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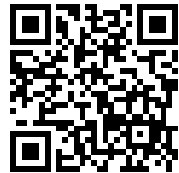
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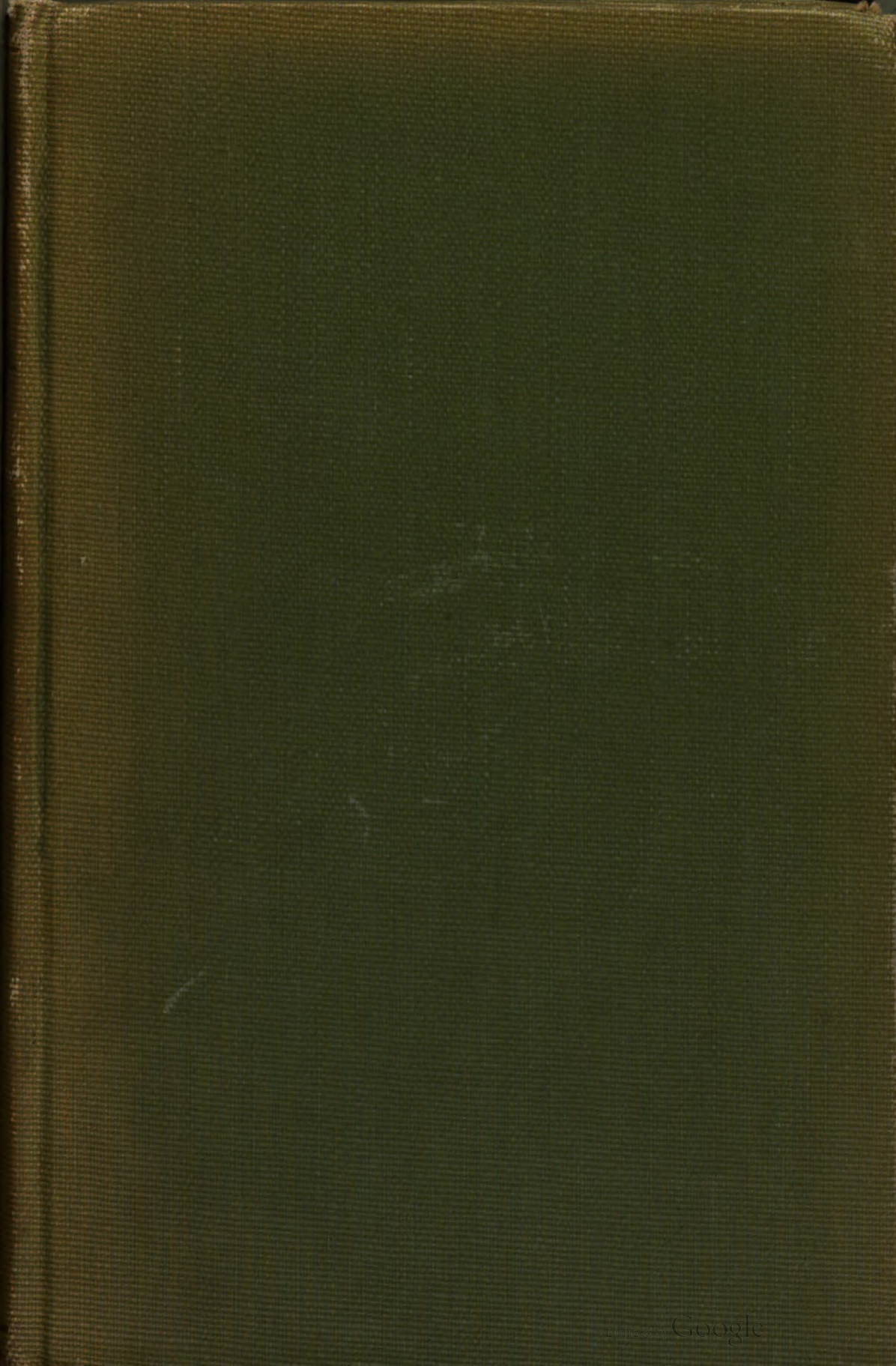
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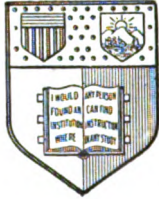
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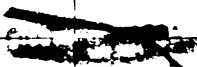


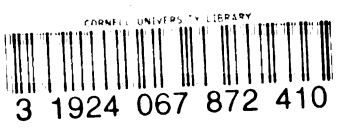
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WASHINGTON, D. C.

MARCH, 1924

**THE AGRICULTURAL OUTLOOK
FOR 1924**

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**PREPARED BY THE STAFF
OF THE
BUREAU OF AGRICULTURAL ECONOMICS**



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THE AGRICULTURAL OUTLOOK FOR 1924.

Prepared by the Staff of the Bureau of Agricultural Economics.

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PLANTING INTENTIONS ON MARCH 1, 1924.

The following statement presents farmers' intentions to plant in 1924, as reported to the U. S. Department of Agriculture between February 15 and March 1, together with a review of the general agricultural outlook. The statement of intentions to plant has been prepared by the Crop Reporting Board of the department, based upon returns from over 43,000 producers. The review of the general situation has been prepared by the staff of the Bureau of Agricultural Economics.

The purpose of this combined report is to furnish information which will enable farmers to make such adjustments in their planting plans for 1924 as may seem desirable in order to prevent the over or underplanting of particular crops.

The statement of farmers' intentions to plant is not a forecast of the acreage that will actually be planted. It is simply an indication of what farmers had in mind to plant at the time they made their reports, compared with what they harvested last year. The acreage actually planted may be larger or smaller than these early intentions reports indicate, due to weather conditions, price changes, labor supply, and the effect of the report itself upon producers' action. Therefore the first acreage reports issued in June should not be expected to show the same increases or decreases as the intentions reports.

COTTON.

Because of pending national legislation specifically prohibiting reports of intentions to plant cotton, no report has been compiled.

CORN.

The report shows on March 1 farmers were planning to increase the corn acreage about 3 per cent over last year, following an increase of about one per cent in 1923 compared with 1922. These increases largely replace wheat. The North Atlantic and East North Central States plan an increase of 1 to 2 per cent. In the West North Central States an increase of about 6 per cent is indicated, and in the Far Western States an increase of about 13 per cent over last year. Increases ranging from 4 to 8 per cent are shown for Iowa, Illinois, Wisconsin, Minnesota, and South Dakota, while the acreage intended to be planted in Kansas is reported as 10 per cent more than a year ago. In the principal cotton states an increase of about 1 per cent is expected.

SPRING WHEAT.

The spring wheat acreage in 1924 will be 14 per cent below the acreage harvested in 1923 if present intentions are carried out. The 1923 acreage was 5 per cent less than in 1922. Much of this acreage is being shifted to flax, oats, and corn. North Dakota plans a decrease of 16 per cent, South Dakota 18 per cent, Minnesota and Washington 15 per cent, and Montana 5 per cent.

OATS.

An increase of 7 per cent is shown in the intended acreage of oats. Increases are reported of about 4 per cent in the North Atlantic States; 6 per cent in the East North Central group; 8 per cent in the West North Central group, and 7 per cent in the far Western States. A decrease of about 14 per cent is shown in the South Atlantic States, due to the heavy loss of fall sown oats from winter killing. In the South Central States the increase was reported at 20 per cent, even after rather severe losses in Alabama and other States from winter freezes. Large intended increase, ranging from 10 to 35 per cent are shown for the double tier of States stretching from Maryland and Virginia through West Virginia, Kentucky, Tennessee, Missouri, Arkansas, Kansas, Oklahoma, Colorado, and New Mexico, and in Texas and Wyoming.

BARLEY.

An increase of 9 per cent in the intended acreage of barley for 1924 over the plantings of 1923 is shown. The intended increase in the Western States is about 19 per cent; in the East North Central States about 9 per cent, and in the West North Central States about 5 per cent.

RYE.

The acreage of rye reported sown last fall was 84 per cent of the area sown in the fall of 1922. Present reports show an acreage to be harvested for grain of slightly less than 79 per cent, indicating that producers are planning to use a larger proportion of the crop than usual for pasturage and soil improvement, and less for grain.

FLAX.

The flax acreage will again be greatly increased if present indications are carried out, these being for a 54 per cent increase over last year. This proposed increase will follow an actual increase of 85 per cent made last year over the acreage of 1922. Producers report their intention to increase the acreage of flax more than double in Montana; 60 per cent in North Dakota, 40 per cent in South Dakota, and 33 per cent in Minnesota.

RICE.

The intended acreage of rice is the same as last year. Increases in Arkansas and California have offset decreases in Louisiana and Texas.

GRAIN SORGHUMS.

An intended decrease of about 6 per cent is reported, the decline being mostly in Oklahoma and Kansas. The extent to which winter wheat may be abandoned due to winter killing will be one of the important factors which will determine the acreage that will actually be planted.

TAME HAY.

An increase of 4 per cent is intended in the acreage of tame hay that will be harvested this year, only a few States showing decreases. The prospective increase is 3 per cent in the Far Western States, 5 per cent in the South Atlantic and East North Central; 6 per cent in the West North Central, and 8 per cent in the South Central. Probable increases of 10 per cent or more are reported for Indiana, Illinois, North Dakota, Alabama, Mississippi, and Oklahoma.

POTATOES.

A decrease of 2 per cent in the acreage for 1924 compared with 1923 will occur if present intentions are carried out. The acreage in 1923 was 12 per cent below the planting of 1922. The reduction is heaviest in the important producing sections, the decrease being 5 per cent in the East North Central States, 10 per cent in the West North Central group, and 7 per cent in the far western States. Intended increase of 4 per cent in the important North Atlantic States and of 9 per cent in the South Atlantic and 12 per cent in the South Central States are reported. Intended decreases ranging from 8 to 20 per cent are reported from New Jersey, Michigan, Wisconsin, Minnesota, North Dakota, South Dakota, Colorado, Idaho, and Washington.

TOBACCO.

The intentions of farmers to plant tobacco on February 15 in the Southern States and March 1 in the North States showed that the same acreage as last year was contemplated, considering all types of tobacco, and all States. The Atlantic Coast States as a whole showed an increase of about 4 per cent, Pennsylvania showing an increase of 7 per cent, while the Carolinas show a slight decrease. The small acreage in Georgia will probably be more than trebled. Ohio and Indiana plan slight increases, while Wisconsin intends a decrease of about 9 per cent. Kentucky expects to decrease about 5 per cent, and Tennessee about 7 per cent. Weather and price changes may make material changes in present intentions before planting time.

SWEET POTATOES.

An intended increase of 16 per cent in the acreage of sweet potatoes is shown for the country at large. The intended plantings in most States range from 10 per cent to 20 per cent greater than last year. The intended plantings of 20 per cent or more are reported for Maryland, Georgia, Tennessee, Oklahoma, Illinois, and Florida.

PEANUTS.

An increase of 19 per cent in the acreage of peanuts compared to 1923 is shown. Such an increase would result in an acreage about 3 per cent larger than that of 1922, but about 14 per cent less than in 1921.

The South Atlantic group of States shows an increase of about 15 per cent, and the South Central group an increase of about 23 per cent. The intended acreage in the Virginia-Carolina territory is about the same as last year, a small decrease in Virginia being offset by a corresponding increase in North Carolina. Georgia and Alabama plan an increase of about one-third over last year's acreage, but the increase in Texas is only about 5 per cent.

4 *Miscellaneous Circular 23, U. S. Dept. of Agriculture.*

INTENDED PLANTINGS COMPARED TO ACREAGE HARVESTED IN 1923.

Acreage intended to be planted compared to acreage harvested in 1923.

[1923 equals 100.]

Crop.	United States.	North Atlantic.	South Atlantic.	East North Central.	West North Central.	South Central.	Western.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
Spring wheat.....	86	111	.....	85	84	.....	92
Corn.....	103	102	101	102	106	101	113
Oats.....	107	104	86	106	108	120	107
Barley.....	109	112	186	109	105	122	119
Potatoes, Irish.....	98	101	109	95	90	112	93
Potatoes, sweet.....	116	100	117	121	110	116	89
Flaxseed.....	151	.....	.....	.....	150	.....	239
Grain sorghum.....	94	.....	.....	.....	90	95	102
Tobacco.....	100	106	104	98	100	95
Peanuts.....	119	115	123
Rice.....	100	100	97	120
Tame hay.....	104	99	105	105	106	108	103

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THE AGRICULTURAL OUTLOOK FOR 1924.

SUMMARY.

The following statement of the agricultural outlook for 1924 based upon current information and upon reports from 43,000 farmers, representing every agricultural county in the country, stating their intentions regarding the planting of spring crops, has been prepared by the Bureau of Agricultural Economics of the United States Department of Agriculture to provide a basis upon which producers may make readjustments to meet economic changes.

The general agricultural outlook for 1924 indicates that farmers are undertaking a normal production program. It is apparent, however, that agricultural production this year will still be attended by the difficulties arising from high wages and other costs, loss of farm workers, and the general disparity between prices of farm and urban products.

Domestic demand for agricultural products is at a high level. Urban prosperity is reflected in a heavy current consumption of fibers and high quality foods, and this may be expected to continue into the summer.

Foreign markets, on the whole, seem likely to maintain about the present level of demand for our cotton, pork, wheat, and tobacco.

The situation this season with respect to labor, machinery, fertilizer, credit, and other cost items is not such as to favor any expansion in production.

The wheat situation shows some tendency toward improvement with the market continuing somewhat more favorable for producers of spring than winter wheat. Spring wheat growers report intentions to reduce their acreage 14 per cent below last spring's plantings. Should abandonment of winter wheat acreage be light, as at present indicated, the reduction in acreage harvested may not be proportional to the reduction in seedings as reported last fall.

Notwithstanding that there will apparently be fewer animals in the country to be fed next winter, corn growers report intentions to increase the acreage 3.2 per cent, and in the Corn Belt proper to increase it 3.5 per cent. This increase, if actually carried out and accompanied by yields as good as in recent years, would result in a large supply relative to the probable demand for corn.

The swine industry is going through a period of liquidation and discouragement. Record runs of hogs to market still continue. In the past such periods of heavy production and low prices have led to a reduction in breeding so drastic as to result later on in shortage and in reversal of the corn-hog balance. Indications are that hog producers have now passed the peak of production and may be moving into one of the recurrent periods of low production.

The dairy industry has expanded to the point where gross domestic production, in terms of whole milk, slightly exceeds gross domestic consumption. Although 18,000,000 pounds net of butter and 64,000,000 pounds of cheese were imported during 1923, stocks of condensed milk and other products, more than equivalent to these imports, were piled up within the country. Judging from the numbers of cows on farms, there will be a further increase in domestic production in 1924. Foreign surplus production is likewise steadily increasing. This competition, coupled with the already heavy production in this country and the possibility that consumer demand may not be indefinitely maintained at levels predicated upon great industrial prosperity, suggest the necessity for conservatism as to further expansion in dairy production.

Total receipts of cattle at public stockyards during 1924 are expected to about equal those of 1923, despite the probability of somewhat lighter runs of strictly range stock. In view of the expected decrease in pork production it seems probable that beef consumption will show some increase and that during 1924 cattle will meet a somewhat more favorable market than during 1923.

With indications of a reduced number of lambs on feed and lower shipments to market, the prospects favor continuation of a strong market for several months with larger market supplies in midsummer. The wool situation is distinctly favorable for producers and there is apparently opportunity at present for profitable increase in the number of sheep.

Poultry production has expanded rapidly in recent years. The record number of chickens now on farms indicates further expansion in 1924. Consumption has also increased at a rate that has maintained average prices to producers. Present comparatively low storage stocks place dressed poultry in a somewhat stronger position than eggs. It would appear that poultry production is now at a point where further profitable expansion may be dependent upon continuation of the present high level of demand.

The tobacco growers generally indicate an intention to plant about the same acreage as last year. The demand for export types of tobacco has encouraged growers to plan expansions of area of these types, while the unfavorable market has led growers of dark varieties to indicate reduced plantings for 1924. Burley stocks are still high and intentions toward increase in acreage should be considered in the light of this fact.

The intentions report indicates a tendency to reduce the acreage of potatoes somewhat below that needed with average yields to provide for average annual consumption. This tendency appears rather pronounced in the central late potato area of Michigan, Wisconsin, Minnesota, and the Dakotas.

A decided increase in peanut acreage in the Southern States is planned by growers, apparently to replace cotton. The stocks on hand and increased imports make it desirable that growers consider carefully the effect of increased acreage at this time.

Sweet potato growers plan an acreage which with average yields would mean a larger crop than the country has ever consumed in any one year. The proposed expansion is largely in the boll-weevil area of the Cotton Belt.

Intentions to plant feed crops (oats, barley, and hay) indicate increases over last year. These increases are generally in line, by regions, with increased numbers of livestock on farms.

An intention to increase flax by 54 per cent is indicated. Such increase is well in line with the consumptive capacity of this country, which at present consumes twice what it produces.

DOMESTIC DEMAND.

Fluctuations in urban prosperity and consequent buying power for agricultural products concern chiefly the fiber crops and the foods of higher quality.

One year ago it was possible to state that all the indications favored a season of heavy business, full employment, and high wages in city industry. Events during the year bore out that prediction.

6 *Miscellaneous Circular 23, U. S. Dept. of Agriculture.*

This spring it can still be said that urban industry is, generally speaking, in a flourishing state. Less can be said, with assurance, of probable conditions next fall, which is the period of especial interest to farmers.

Some of the war-time shortages in housing, railway equipment, and other key industries have apparently been made good. If this is true, it reduces the certainty that such key industries will go ahead throughout this year on quite such a scale of activity as last spring seemed to promise and which last year bore out in fact.

Nevertheless, so far this year the evidence indicates a continuation of heavy production of basic materials such as metals and coal; a larger volume of distribution than a year ago, as measured by freight movement, sales from stores, etc.; a strong credit situation as measured by interest rates, bank reserves, etc.; strong security markets; a generally stable price level; employment fairly well maintained; wage earnings maintained at or near the high level of last fall. This is the general situation, though varying in certain industries and in certain sections of the country. The steel industry is very active, for example, while portions of the textile industry are not so active.

A factor on the demand side is the increase in the Nation's population. This increase adds some 1,400,000 persons annually to be fed and clothed. A further factor affecting the balance between demand and supply is the continued movement of population from farm to town, estimated to have been upward of one million during the past year.

The current consumptive movement of meat, eggs, dairy products, fruit, fresh vegetables, and foods of like class indicates a continued high level of demand for these products. This is natural since, with industrial wages still about 100 per cent above the pre-war level and retail food prices only 50 per cent above pre-war, great advantage rests with the consuming group. Prices of fibers are relatively higher than foods. The retail movement of textiles at current prices raises some points of uncertainty.

The general conclusion would seem to be that present urban prosperity is reflected in a high level of domestic demand for foodstuffs and fibers with good prospects for its continuance into the summer.

FOREIGN DEMAND.

Foreign demand absorbs a large part of the marketable surplus of our cotton, wheat, pork, and tobacco. In the case of cotton more than 50 per cent of the total crop is exported. Of the tobacco crop, one-third is exported. Measuring the market demand for wheat by the amount shipped out of the county where grown, the foreign demand in the year ending June 30, 1923, was 38 per cent of the total. Of the estimated total demand thus measured for the year ending June 30, 1924, 23 per cent had been exported to March 8, 1924. Of federally inspected slaughter in 1923, 13 per cent of pork was exported, while of the lard produced under Federal inspection 54 per cent was exported.

Of the cotton exports last year, as measured by mill consumption, 30 per cent went to the United Kingdom, 12 per cent to Germany, 12 per cent to France, 12 per cent to Japan, and 9 per cent to Italy. Of the pork products, about 40 per cent went to the United Kingdom and over 20 per cent to Germany. Of the wheat and flour probably 30 per cent went to the United Kingdom, either directly or via Canada, about 20 per cent to Italy, and about 25 per cent to China and Japan. Of the leaf tobacco exports, more than 50 per cent measured by declared value went to the United Kingdom.

General business conditions in the United Kingdom have shown distinct improvement in the past three months. Employment conditions are better than at any time in three years. Imports of raw materials and exports of manufactured goods indicate increased industrial activity. There is, however, still considerable unemployment, and sterling exchange in New York is lower than in October and November of 1923. Unless the generally favorable outlook is changed by unforeseen complications, the British market in 1924 should be distinctly better than in 1923. The outlook for greater activity in British mills makes it probable that that British market will absorb more cotton, and the demand for pork products and tobacco should continue strong. It is doubtful, however, if any improvement can be expected in the market for American wheat and flour.

The German situation is very uncertain. During the past year the German market for American agricultural products, particularly lard and cotton, has been unusually good. Paradoxically, the market for lard has been good be-

cause of economic chaos and business depression. American lard has been the cheapest fat obtainable, and it has been generally substituted for other cooking fats and for butter. The improved conditions beginning with the stabilization of the currency, in December, 1923, immediately brought butter and other fats on the German market in competition with refined lard. Reports also show that there are 2,750,000 more hogs in Germany, and it is safe to forecast increased slaughter in the remaining months of 1924.

The demand for cotton in Germany is increased by the fact that German mills have been supplying cotton goods to central Europe generally, and in Czechoslovakia, Austria, and Hungary economic conditions have shown improvement. Imports of cotton will probably continue to be heavy if economic conditions are such that the mills can continue to operate.

The German market for tobacco is not strong. German imports of American wheat from the 1923 crop have been materially reduced below the imports from the crop of 1922, although imports of American flour in the past six months have been somewhat greater than those in the same months of 1922-23. Wheat and flour imports from the United States depend both on internal conditions and on competition of other sources of supply, and can not be depended upon.

The situation in France does not appear as favorable as in the early months of 1923. Even under favorable conditions, France is not an important market for pork products, and buys wheat in large quantities only in years of domestic crop shortage. In case of an acute depression the purchases of cotton and tobacco could easily be curtailed, at least for several months.

Economic conditions in Italy have shown remarkable improvement within the past year. The value of the currency has been maintained and industrial activity has been resumed on a large scale. These facts in themselves would appear to be favorable for a better market in Italy for American products. On the other hand, it should be remembered that our exports to Italy are chiefly cotton and wheat. The marketing of the cotton crop is not likely to present great difficulties in any event, but in the case of wheat the competition of Canada and Russia is likely to overcome any advantage that improved economic conditions might otherwise give.

During the past year there has been an unusual demand for wheat and flour in the Orient, due partly to the poor wheat crop in Manchuria and northern China in 1923. The continuance of this trade in profitable volume beyond the summer months will depend upon crop conditions in the Far East in 1924. There are indications already of increased plantings of wheat. Japan will probably continue to import large quantities of American cotton, and there is no indication of change in the demand for tobacco.

Taking foreign markets as a whole, there is no evidence to justify prediction of very marked changes soon in the demand for American agricultural products. While conditions appear to be better in some of the more important markets, there are adverse conditions in other markets, the influence of which it is impossible to measure.

FARM CREDITS.

In order to tide over the present period of low prices, farmers will find it advantageous to refund wherever possible both real estate and short time loans for longer terms and at lower rates of interest. In the attempt to reduce operating costs the price and term of credit should receive increased attention and full advantage should be taken of the improved credit conditions which now generally obtain and the Federal credit facilities that are now available.

The use of additional credit for production purposes should not be encouraged, except where its use offers reasonable promise of increased net returns or where essential to bring about diversification in the direction of production for local consumption as food and feed.

LABOR.

In all parts of the country wages of farm labor were higher in 1923 than in either 1921 or 1922 and at the present are, on the average, slightly higher than a year ago. The average wages per month without board in 1923 was \$47, which compares with \$42 in 1922, \$43 in 1921 and \$30 for the pre-war year 1913. There is no immediate indication of unemployment or of a sufficient reduction

of wages in other industries materially to affect wages of farm labor during the present season.

Many farmers have decided that it will be better to rearrange the farming program so as to reduce hired help to a minimum, and the demand for labor is considerably less than last year. For the entire country, the demand was reported as 88.7 per cent of normal March 1, as compared with 94.6 per cent on April 1, 1923.

SITUATION IN MAJOR LINES OF PRODUCTION.

WHEAT.

The outlook for a market for our surplus wheat.—The unusually large world supply of wheat for the year is being absorbed at a rapid rate. Notwithstanding that the European harvest outside of Russia is about 240,000,000 bushels greater than last year, shipments to Europe thus far have been nearly equal to shipments for the same period last year. Owing to short crops, the Far East is taking larger quantities of wheat. France has lowered her import duty on wheat, which should be some encouragement to further importation. Low prices are encouraging generally increased consumption. Farm consumption for feed in the United States has been larger than usual and the stocks remaining in the farmers' hands are lower than last year. On the other hand, the visible supply of wheat in the United States, in Canada, and afloat is larger than at the same time last year, and the new crops just harvested in Australia and Argentina are larger than last year. It is probable, therefore, that unless the movement for the remainder of the year is accelerated, stocks of wheat available in exporting countries other than the United States and afloat on July 1, the beginning of a new crop year in the United States, will be greater than last year and greater than usual. But the carry-over at the end of the year probably will not be as great as it seemed a few months ago that it might be, and the outlook for a market for our remaining surplus of wheat for this year seems slightly better than it was a few months ago.

The outlook for 1924-25.—Low prices seem to be generally discouraging further expansion in wheat areas. The area of winter wheat seeded for the crop of 1924 reported to date outside of Russia amounts to 109,000,000 acres, compared with 115,000,000 acres last year in the same territory, which was nearly one-half of the total area reported last year outside of Russia. The reduction in area is mostly in the United States. Eight European countries report a reduction of 1 per cent. Winter seedings of wheat and rye in Russia are apparently slightly increased, the latest estimate being about 1.6 per cent greater than last year, but this is not sufficient to offset the reduction in other countries. Canada, the most important surplus-producing spring wheat country, is beginning the season with the handicap of some reduction in the area prepared for spring seeding. It is reported that the area plowed last fall was only 43 per cent, as compared with 48 per cent in 1922 and 67 per cent in 1921. Areas in Australia and Argentina may be expanded, but, excepting for the encouragement of the high yields per acre of the new crop just harvested, conditions in these countries are not such as to encourage immediately an extensive expansion in area. In Argentina the prices now being received for corn and wheat give more encouragement to the expansion of corn area than of wheat area. The wheat area in Australia had increased to 12,500,000 acres in 1915 but was reduced to nearly one-half of this area in 1919 and recovered to the extent of about 10,000,000 last year.

The production of wheat for the year, of course, depends quite as much upon yield as upon area, and it is too early in the season to make any prediction of yields. It may be observed, however, that last year in practically all important producing countries except the United States yields were equal to the average or better than the average. It does not very often happen that all countries have good harvests at the same time. The tendency to consume more wheat than has developed in the past year may be continued into next year. All things considered, the outlook for the market for next year's crop is more favorable than for the past season.

HARD SPRING WHEAT.

In the past year the tariff of 30 cents per bushel on wheat has been effective in protecting the market for Hard Red Spring wheat, and the recent increase

to 42 cents should make it possible to maintain higher prices for the Hard Red Spring wheat in relation to the prices of other wheats, so long as the production of this wheat does not exceed the domestic demand. Expansion in acreage of Hard Red Spring wheat with yield above the average might result in a surplus for export and might in this manner reduce or nullify the effectiveness of the tariff.

DURUM WHEAT.

Average higher yields of Durum wheat favor its production in some parts of the Hard Spring wheat region. The market for Durum wheat is on an export basis, and the price is determined largely by the market for this wheat in the Mediterranean Basin. There has been some increase in the competition with Durum wheat by hard wheat from North Africa and Canada in the Hard wheat markets of the Mediterranean Basin and increasing competition is to be expected from Russia. The domestic demand for Durum wheat seems to be increasing and will now take from 20,000,000 to 25,000,000 bushels of this wheat. During the war period Amber Durum wheat sold at prices nearly as high as the prices for Hard Red Spring wheat, but in the last two years has sold at prices considerably below. However, with average yields of Durum wheat 2 bushels per acre higher than the yields of Hard Red Spring wheat, it may be profitable in certain sections to grow the Durum wheat, even though the price may be as much as 20 cents below the price of No. 1 Hard Red Spring wheat.

Intentions to plant spring wheat including Durum.—The intention to plant 14 per cent less acreage of all spring wheat in 1924 than in 1923, if carried out, should keep production well within domestic needs for Hard Red Spring wheat.

The selection of high-yielding rust-resistant varieties of wheat which have good milling quality and, therefore, command the best market prices, will influence in no small measure the profits realized in wheat production. Cleaning of wheat before sowing is equally important. Weeds in growing wheat reduce yields and increase costs of harvesting and threshing. The presence of dockage in wheat not only reduces its quality and grade, but adds materially to the cost of transporting it to market.

Abandonment of the winter wheat area.—The significance of the reduction in the fall seedings of winter wheat in the United States will depend upon the amount of abandonment and the yields per acre realized from the crop remaining to be harvested. The condition of the crop December 1 was better than last year and better than the average. If the average percentage, 9.8, is abandoned and yield per acre equals the average of the last 10 years, production will be but slightly less than last year. Should more or less than the usual percentage of area be plowed up the production would be reduced or increased accordingly. It is too early to judge with confidence of the winter losses of fall planted wheat. In the plains region including Nebraska, Kansas, Oklahoma, Colorado, Texas, and New Mexico the damage promises to be light. East of the Mississippi it may be heavier than usual. Much loss has already resulted from the unusually severe freezes in the Southeastern States.

RYE.

Winter seedings of rye as reported to date by 10 countries for the crop of 1924 amount to nearly 24,584,000 acres, compared with 24,439,000 acres for the 1923 crop. The 10 countries reported constitute about 53 per cent of the total area seeded last year outside of Russia. In Russia rye production has recovered more than the wheat production. Before the war Russia exported only on an average about 29,000,000 bushels, and has already nearly reached the pre-war figure in the exports from the crop of 1923. The world production of rye outside of Russia last year as reported amounted to 932,000,000 bushels, compared with 840,000,000 bushels in the same countries in 1922, and was nearly equal to the 1909-13 average. During the war period the rye acreage in the United States expanded to meet the demands of Europe with Russia, Germany, and Poland eliminated from the western European markets. Following the war Germany took large quantities of rye from the United States, but last year had a good crop and home production together with imports from Russia are supplying the German demand at relatively low prices without taking much from the United States.

That the present unsatisfactory situation for rye is influencing spring planting programs is shown by the fact that farmers' intentions to harvest this crop for grain now show a 5 per cent reduction from the plantings of last fall, which were already 15 per cent below the 1923 harvested acreage.

OATS.

The amount of oats on farms March 1, 1924, was about 24,000,000 bushels larger than one year ago, though the percentage of the crop held was slightly lower. The consumption for the crop year to date has been materially larger than last year. If the increased consumption continues during the remainder of the year, it is probable that the carry-over will be small. From reports available it appears that a large percentage of the winter oats in the Southeastern States have been winterkilled, which may tend to keep the market demand firm.

The trend of acreage and production of oats for the country as a whole has been steadily upward for the past 15 years, particularly in western and southern portions of the North Central States. Both the 1922 and 1923 acreages, however, were low compared with the acreage seemingly required for the increased numbers of livestock on farms. Farmers on March 1 expressed an intention to increase acreage 7 per cent over 1923. In the North Atlantic States and North Central States east of the Mississippi River acreage in 1923 was slightly low. With the increased production of dairy products more oats are needed as feed for dairy cows. This factor may tend to offset the decreased quantity needed for city consumption, and a slight increase in acreage over 1923 is probably required. Expressed intentions for these groups of States were respectively 4 per cent and 6 per cent above 1923. In the North Central States west of the Mississippi River and in the South Central States the acreage of oats appears to have fallen considerably behind the increase in livestock units, and in these regions increased quantities above 1923 appear to be needed. Intentions to plant are given as 8 per cent and 20 per cent above 1923.

In the Southeastern States winterkilling has reduced the fall seeded acreage, and farmers' intentions as of February 15 were for a decrease of 14 per cent. Further winterkilling has been reported since that time and it is doubted that spring seedings will be large enough to replace this late winterkilling.

World production of oats in 1923 was more than any post-war year and was about 250,000,000 bushels more than the pre-war average. In the war period there was a strong foreign demand for oats. Recovery of European production tends to reduce the foreign demand for oats from the United States.

BARLEY.

The amount of barley held on farms on March 1, was 44,800,000 bushels, or about 2,400,000 bushels more than last year, yet the stocks represented a smaller percentage of the crop than for the previous year. The larger stocks do not indicate a smaller consumption because the 1923 crop was larger than any since the war.

World production of barley in 1923 was more than in any post-war year, and, excluding Russia, more than the pre-war average. The United States is exporting about 20,000,000 bushels of barley each year, and the price of barley is therefore affected by the world price. The recovery in European production is increasing the foreign competition.

Notwithstanding that production has been maintained, market receipts during the past five years have been less than one-half as large as formerly, and the price level has advanced steadily since 1922. This indicates a materially increased use for farm feed, and reflects the increase in dairy and hog production, particularly in the northern and western fringe of the corn belt. In this region there appears to be a further tendency to increase the numbers of livestock, which should be met by an accompanying increase in barley and other feed crops.

Farmers' intentions at present are to plant 9 per cent more barley than in 1923 for the entire United States and 5 per cent in the States on the western and northern fringe of the corn belt. Intentions in the Mountain States are given at 19 per cent above 1923. In California intentions for an increase of 10 per cent are shown.

FLAXSEED.

The United States produced in 1923 approximately 17,500,000 bushels of flaxseed, which is only about half of the quantity of flaxseed that was available

from production and imports for consumption in this country last year. The average production in the United States in the past five years was around 10,773,000 bushels, whereas the annual average requirements for that period were approximately 30,000,000 bushels.

Approximately 4,165,000 acres, with the average yield of the past five years 7.2 bushels per acre, would be required to produce the total amount that has been available annually from domestic production and imports. The area harvested last year was 2,061,000 acres, and farmers have expressed an intention to increase plantings by 54 per cent. If this intention to increase acreage is carried out, production with an average yield will not be equal to the average annual post-war consumption.

As long as production remains no greater than domestic requirements, the price of flaxseed will remain upon an import basis, with prices determined by the world market and the duty imposed upon imports. Under the present tariff, which levies a duty of 40 cents per bushel, the drawback provisions allows for a refund upon the export of oil cake and reduces the effective duty to about 30 cents a bushel.

The latest estimates place the world production of flaxseed for 1923 at 127,000,000 bushels, as compared with 94,000,000 bushels for 1922 and a pre-war average of all 111,000,000 bushels. The large increase in 1923 compared with 1922 is due primarily to the large crop in Argentina, which is the most important source of flaxseed importations into the United States. In the past year Argentine flaxseed has been imported and shipped to Minneapolis, paying rail and lake rates. Under these conditions the farmers in the Northwest compete with Argentine producers at Minneapolis on the basis of prices in Argentina plus import duty and transportation rates to Minneapolis. Should the flaxseed crop of the Northwest plus the imports from Canada exceed the requirements of western crushers, the surplus flaxseed of this region would be shipped to the Atlantic coast to compete more directly with flaxseed from the Argentine plus only ocean freight rates to Atlantic coast ports.

In deciding whether to put in flaxseed, therefore, farmers should consider carefully not only the relative cost of production and the net return from flax and alternative crops based upon the experience of the past year, but also consider the possibility of a lower margin of profit on flaxseed in the event the larger foreign supply, together with increased plantings in this country, should result in a lower price for flaxseed next year.

RICE.

Since 1914 the United States has produced more rice than she has consumed and the rice market has been upon an export basis. We are competing with India, Indo-China, and Siam in the oriental and European markets.

In 1921 the price of rice fell to the pre-war level and has remained relatively low. The reduction in the rice crop of India from 74,000,000,000 pounds last year to 63,000,000,000 pounds this year may improve the market for our rice.

However, the tendency to increase production of rice through expanding areas in several countries indicates that foreign competition is increasing. The area of rice harvested in India, Chosen, Indo-China, the Philippine Islands, and in Java and Madura has increased from 87,100,000 acres in 1909-1913 to 102,700,000 acres in 1923, an increase of 18 per cent. The short grain rice of California finds a market in Japan in competition with rice from Chosen (Korea).

Farmers express an intention to plant in the United States as a whole the same acreage as last year. The intentions in Arkansas and California to increase is offset by decreases in the Gulf States.

COTTON.

Because of pending national legislation specifically prohibiting intentions to plant reports on cotton, no report has been compiled. The cotton situation is stronger than it was in 1923. The probable supply in America on March 1 was about 4,450,000 bales, as compared with 5,340,000 bales in 1923, 7,436,000 bales in 1922, and 10,754,000 bales in 1921. The reduced supply of American cotton and the resulting favorable price situation has been created by poor yields due to abnormal weather conditions and boll-weevil damage rather than to increased demand or to reduced acreage. The acreage last year was the greatest on record.

The world supply of all commercial cotton for the year 1921-22 amounted to about 29,000,000 bales, for the following year it was reduced to a little less than 27,000,000 bales, and for the year 1923-24 the supply was about 24,500,000. The carry-over was reduced from 14,352,000 bales on July 31, 1921, to 6,341,000 on July 31, 1923. A strong effort is being made to increase production in foreign countries. These efforts, coupled with the high prices, have resulted in some increases in supply, but do not promise to compete seriously with the better types of American upland in the immediate future. The world production of commercial cotton outside of the United States was 6,730,000 bales in 1921-22, 7,885,000 in 1922-23, and 7,994,000 in 1923-24.

The outlook for long-staple cotton is not as promising as for cotton as a whole. According to commercial estimates, the percentage of long staple cotton produced since the war, as compared with pre-war conditions is greater than with the medium and short varieties. The pre-war production of long-staple varieties was 2,167,000 bales of the medium lengths, the ordinary American Upland varieties was 16,220,000, and the short cotton, produced mainly in India and China, was 6,750,000, as compared with a post-war average production of 2,030,000 for the staples, 12,575,000 for American types, and 5,600,000 for the short varieties.

In the light of general business conditions the cotton market gives promise of being able to absorb a moderate increase in supply at a comparatively good price. It must be remembered that a large crop if secured by increased acreage and expensive production methods would tend to result in a decline in price which might more than offset any resulting reductions in cost due to higher yields.

TOBACCO.

Viewing the tobacco crop as a whole, there is an expressed intention to plant about the same acreage in 1924 as was planted in 1923. The trends of particular types differ, however, the controlling influences being the rapid increase in cigarette manufacture and consumption, the improved foreign demand for certain types, and the poor demand for others.

The trend of cigar and cigarette production has had an evident effect upon tobacco prices and prospects. Cigarette manufacture has increased rapidly in recent years. The acreage of Burley and the flue-cured type has accordingly made consistent increases and so far the prices have been fairly well maintained. The combined acreage of the principal cigarette types—Burley and flue-cured—was 1,169,000 acres in 1923. Notwithstanding this large acreage these types outrank all except the better cigar types and Maryland Export in price per pound to the grower and there is an apparent intention further to increase acreage.

The most significant change in acreage for 1924 is indicated in the bright or flue-cured section of Georgia, where cotton was particularly hard hit in 1923. The production of this type has extended into about 30 new counties, and experimental patches are reported from many other sections of the State. Increased plantings are also being made in the old tobacco counties.

A hazard exists in any such violent increase in tobacco production as that contemplated in Georgia, due to the inexperience of the growers planting their first crop of tobacco, the expense of providing curing barns and other necessary equipment, and the uncertainty that present prices will be maintained.

Acreage and production of cigar tobacco have been comparatively low during the past three years, and while the average price for all cigar types is the highest since the war, the crop has moved slowly in New England and Wisconsin. Farmers have expressed an intention to increase acreage in Pennsylvania and New England and to decrease in Wisconsin. In Florida there is an apparent intention to shift from cigar to cigarette types.

A greatly improved foreign market for American tobacco has existed during the past six or eight months, with the result that prices paid for Maryland and Eastern Ohio Export tobacco are the highest since 1919. The best tobacco of this type is used in cigarette manufacture, and a considerable increase in the Maryland acreage is intended.

There is an apparent intention slightly to increase Burley acreage in 1924. Burley prices are considerably less than they were in 1922, but are still higher than for any other type grown in Kentucky and Tennessee. The demand for this type in the manufacture of cigarettes and smoking mixtures has made it one of the leaders, and Burley territory is therefore steadily encroaching upon that of the Green River and dark-fired types. It has already taken the place of much of the territory in Ohio formerly devoted to the export type and the

intended increases in tobacco acreage reported in Indiana and Missouri are apparently Burley. The acreage of One-Sucker in Kentucky appears likely to increase, where there is an apparent intention to decrease Green River.

As already indicated, the dark-fired types, particularly Paducah and Clarksville and Hopkinsville, will apparently show rather heavy decreases, due to unfavorable prices. Both of these types are bringing less per pound than in any year since the World War except 1920, resulting in widespread dissatisfaction.

Exports of unmanufactured tobacco since 1910 have ranged from about 30 to more than 50 per cent of the annual production. Since 1919 exports have steadily declined in volume until the fiscal year beginning July 1, 1923. During the seven months commencing with that date they were heavier by 12 per cent, or 36,000,000 pounds, than in the corresponding period one year previous. If exports continue at the present rate, the total for this fiscal year will be the highest but one on record. In view of the favorable demand situation in England the outlook for exportation of bright tobacco should continue favorable. Demand from Italy for dark-fired tobacco should continue favorable but will probably be more than offset by the less favorable demand situation in Belgium, Germany, and the Netherlands. Exports of Maryland and Eastern Ohio Export tobacco are mainly to France, Belgium, and the Netherlands, where the demand outlook is less favorable than elsewhere in Europe.

The stocks of leaf tobacco held by manufacturers and dealers on January 1, as shown by the Department of Commerce report of January 31, 1924, were approximately 11 per cent in excess of those held January 1, 1923. Stocks of cigar types were about 34 per cent higher; Burley, 184 per cent higher; dark-fired Henderson, Green River, and One-Sucker, 11 per cent higher; Virginia sun-cured, 4 per cent higher; Virginia, dark, 41 per cent higher; Virginia, North Carolina, South Carolina, and Georgia, bright, 14 per cent higher; and Maryland and Eastern Ohio Export, 39 per cent lower than 1923.

PEANUTS.

The stocks of peanuts on hand on March 1 in the southern producing sections were light in the areas growing the Spanish and Runner types, and rather heavy in the territory devoted to Virginia type nuts.

Reports from thousands of farmers throughout the South indicate they intended on February 15 to plant 19 per cent more acreage to peanuts than in 1923. The increase is chiefly in the southern tier of States where continued low yields from cotton as a result of the inroads of the boll weevil have caused farmers to turn to other crops.

The reported intention showed for Georgia an increased acreage of 40 per cent, Alabama 35 per cent, South Carolina 20 per cent, Florida 9 per cent, and Texas 5 per cent. These States grow chiefly the small-podded Spanish type peanut, although Alabama and Florida raise large quantities of the Runner type. With average yields or better such an expansion in acreage as is indicated, however, can be expected to be accompanied by lower prices to the farmer, but even so the return may be more satisfactory than could be secured from any alternative crop.

Farmers in Virginia report that they expect to plant 96 per cent as much land to peanuts as last year, and North Carolina growers report intentions for a 5 per cent increase in peanut acreage. Tennessee, which also grows large-podded nuts, but which planted only 14,000 acres in 1923, may greatly increase its peanut acreage in 1924.

Prices of Virginia type peanuts have been good the past season, but the present large stocks on hand, and the heavy increase in imports in 1923 of Virginia type nuts, render it desirable that producers of this type peanut weigh very carefully the possible effect upon prices of any further increase in acreage over the intentions as indicated above.

HAY.

The country had a large hay crop in 1923. It was, however, about 5,500,000 tons less than the 1922 crop, the latter being the largest ever produced. The reduction in the 1923 crop was in tame hay and was principally in the timothy and clover producing areas.

The movement of timothy and clover hay to market was about the usual volume and resulted in small stocks on hand March 1. The March 1st estimate of stocks of all kinds of hay on farms was 33,400,000 tons, which was 3,200,000 tons less than the previous year.

14 · *Miscellaneous Circular 23, U. S. Dept. of Agriculture.*

The market needs for hay in the North Atlantic group of States and in the eastern portion of the North Central group has been largely met by imports of Canadian hay. During 1921 when the Canadian crop was short and 1922 when the crop in the North Atlantic States was large, imports from Canada were very small. In 1923, however, notwithstanding the increased duty on hay, the imports from Canada were large, amounting to nearly 135,000 tons. Large importations of Canadian hay have continued during 1924 to date and have been a factor in the recent fall in prices of timothy and clover hay in the United States. Because of the shortage of marketable surplus of timothy and clover hay the price level throughout the 1923-24 crop year to date has been about \$4 to \$5 above last year's price level.

In North Central States acreage in 1923 appears to have been ample with average yields to provide for the increases in animals on farms which are occurring in that section. Intentions to harvest show a contemplated increase of 5 per cent.

Favorable weather resulted in rather better yields than usual of alfalfa hay in the Central and Southwestern States, but continued rains damaged large quantities of this hay so that the amount of high-grade hay available for market has been rather limited during the present crop year to date. The scarcity of the better grades caused firm prices and held the price level about \$2 to \$3 higher than at the corresponding time last year to March 1. Efforts to market the remaining surplus before the beginning of the new crop have lowered prices to last year's level, indicating that the present production about equals the present market demand. In view, however, of the tendency to increase livestock in that section a slight increase in acreage over 1923 may be justified for farm feeding. Expressed intentions show an increase of 8 per cent.

In the Mountain States the acreage is slightly low, but the distance from markets and the fact that there is now a marketable surplus in this territory probably explains the growing feeling that to increase acreage much faster than animal holdings is doubtful policy. That farmers in this area have this in mind is shown by the modest increase of 3 per cent intended for that area.

The factors affecting the production and marketing of alfalfa hay in the Central Southwestern and Mountain States apply also to prairie hay.

In the Pacific States the acreage is somewhat low and the surplus from the 1923 crop will probably be nearly exhausted before a new crop arrives, because of the increased demand occasioned by the drought the past few months. Considering these conditions a slight increase in acreage may be good policy. Intentions show less than 2 per cent increase.

Considering the United States as a whole, in view of the continued decrease in the number of horses and other animals not on farms it would seem that with normal yields the low war-time hay acreage has been made up. Such, at least, is the situation from the market angle, although other factors play a part in determining hay acreage on many farms.

From farmers' intentions it appears that the hay acreage of the United States will be further increased by 4 per cent. Only a few States show decreases, and these are small.

SUGAR BEETS.

The international sugar situation does not at this time appear to differ to any great extent from that of the past year. The best data now available indicate a possible small increase in production. Cuban sugar holds a dominating position in the United States supply. Present indications are that the Cuban crop will be only slightly greater than last year. There is, however, a probability of decreased demand for Cuban sugar in Europe due to competition from Poland and Czechoslovakia.

POTATOES.

The 1923 potato crop was 8 per cent smaller than the 1922 crop. Shipments reported to March 1, 1924, have been less than to March 1 a year ago by 7,000 cars, or 4 per cent.

The northeast district (New England, New York, and Pennsylvania), from a crop 13 per cent larger than in 1922, has shipped 20 per cent more up to March 1. From the Lake States (Michigan, Wisconsin, Minnesota, North Dakota, South Dakota), with a 20 per cent smaller crop, shipments have been 10 per cent greater. From the Mountain States (Colorado, Wyoming, Idaho, Montana, and Utah), with a 30 per cent smaller crop, shipments have

been practically 1 per cent more than last year. In the Pacific States (Washington, Oregon, California), with a crop 20 per cent less than in 1922, shipments have been about 2 per cent more. The supplies available on March 1 for shipment do not appear to be excessive in any district and are apparently low in the Lake area.

The acreage in the United States in 1923 was 3,800,000, or 300,000 below the trend of acreage, and also below the trend of per capita acreage. Per capita production has averaged 3.70 bushels. Allowing for years when the entire crop was not utilized in regular manner, about 3.50 bushels per capita would seem to be the quantity needed to maintain a stable market. For a population of 112,000,000 in 1924, a crop of 392,000,000 bushels will give this quantity per capita. With the average yield of 97.2 bushels per acre, an acreage of 4,033,000 is needed. This is 3 per cent greater than in 1923. This, of course, is a generalization and takes no account of regional advantages nor handicaps.

The intentions report shows a decrease of 2 per cent if present intentions are carried out.

By geographical districts, potato acreage in 1923 was somewhat small in the Eastern States outside of Maine, and materially reduced in the Lake States. The intentions report shows a 4 per cent increase in the former and a 12 per cent decrease in the latter. The intended acreage in the Lake States is 27 per cent less than the acreage of 1922. With average yields, it is doubtful if the intended plantings would supply the market needs of that territory during the coming year.

There seems to be a downward trend in acreage and production in the Pacific States which tends to improve the market for potatoes from the Mountain States. There has been also a steady decrease in potato production in the central or deficit producing States. In the Mountain States the intentions report shows an 11 per cent reduction. The acreage there in 1923, while greatly decreased from 1921 and 1922, assumed practically a normal position with respect to acreage prior to 1921. Distance from market in this region has been a big factor in the relatively unsatisfactory potato returns in this region, and the increase in population, with some decrease in production in neighboring States, will improve the situation.

Commercial acreage in the South Atlantic States has been reported to be 186,000 acres, or 11 per cent higher than in 1923. Early varieties in the northern sections for market may, therefore, find increased competition.

SWEET POTATOES.

Reports to the department indicate an intention to plant a larger acreage to sweet potatoes than has ever before been planted. The acreage of this crop exceeded a million acres for the first time in 1921 and rose to 1,117,000 acres in 1922. Following the disastrous losses to growers resulting from the overproduction of 1922, acreage fell to 993,000 acres in 1923.

The price of sweet potatoes received by farmers sharply declined from the high average reached for the crop of 1919, which was \$1.58 per bushel, to 95 cents for the crop of 1922.

The higher price received so far for the 1923 crop seems to have encouraged farmers to plant this year a larger sweet-potato acreage than ever before, about 16 per cent more than in 1923 and about 3 per cent more than the record acreage of 1922.

If present intentions are carried out and an average yield is secured, the total production for the United States would be greater than in any previous year.

CORN.

The fall of 1923 found corn prices soaring, and the number of hogs being marketed continually pushing ahead to new records. The demand for corn to feed hogs during 1923 was the greatest yet recorded; the high prices for corn in the early fall and the low carry-over of corn were the result.

The outlook for 1924 is quite different. Though hog marketings still continue heavy, hog production has begun to decline, and the shortage of corn which characterized the fall of 1923 would not seem likely to be repeated, given normal yields in 1924.

Farm stock on March 1, just past, 1,153,000,000 bushels, are only about the same proportion of the crop as were stocks of last year, and are much smaller

than those of 1921 or 1922. In addition, there is a rather high proportion of soft corn in the principal commercial areas. The demand for corn to fatten steers during the summer and fall of 1924 will probably be about the same as last year, and possibly somewhat greater. However, the reduced breeding herds of swine, and the expected fewer number of spring pigs to be carried over the summer, indicate a net reduction in the demand for corn in the summer of 1924, as compared with the summer of 1923.

The large corn crops of the past five years have been due to high yields per acre rather than to large acreages, the acreage for the country as a whole being somewhat below the usual acreage from 1910 to 1914. From 1919 to 1923 the corn crop averaged 38 bushels in the East North Central States and 33 bushels in the West North Central, as compared with averages of 34.6 and 26.7 bushels, respectively, for the period 1912 to 1918. In judging what the corn acreage to be planted this year should be, it may be well to assume that the most probable yield will be somewhat above the pre-war average, though not quite so high as the yields of the past five years.

The area along the western fringe of the Corn Belt, from Oklahoma and Kansas north, has shown steady increases in corn acreage ever since 1919. Farmers in this region, particularly in the northern sections, can not always be sure of making a crop of marketable corn; in addition, with present freight rates, this region is too far from consuming centers to produce corn for the general markets. It does seem, however, that in so far as corn can be profitably utilized as a feed for stock, or can supply a local demand, it should be more largely grown in this region, particularly as it does not seriously conflict with wheat for labor.

Expressed intentions show a contemplated increase of 5 per cent in these States. Nebraska, Kansas, and the Dakotas, show for January 1, 1924, nearly 3 per cent increase in the number of milk cows and over 1 per cent increase in the number of other cattle, as compared with January 1, 1923. The Dakotas also show an increase of 4 per cent in the number of swine, though Nebraska and Kansas share in the general decrease in swine shown by the Corn Belt. The Mountain and Pacific States also show material increases in dairy cows and swine partly offset, except in Arizona, Idaho, and Washington by decreases in beef cattle. These facts would indicate that the upward trend in corn acreage in this section may be expected to continue. Acreage intentions there are given at 13 per cent above 1923. This increase, however, being almost entirely for corn to feed to stock or for other local consumption, will not materially affect the market.

In other regions no striking changes seem indicated. North and East of the Corn Belt corn acreage has been practically constant since the war, while there has been a decided tendency to the reduction of corn acreage in the South. Corn acreage in the Cotton States in 1923 was about 6 per cent less than in 1922. A 1 per cent increase over the 1923 acreage was contemplated for 1924 at the time of the intentions report.

The livestock outlook gives ground for supposing that the demand for the 1924 corn crop will not be as great as for the 1923 crop. The indicated reduction of about 10 per cent in the spring crop of pigs will reduce the number of hogs to be fattened next winter to fewer than those fattened either last winter or the winter before. If farmers should reduce their breeding herds of swine still further, there will be even less demand for corn to carry breeding herds through next winter, and for fattening out fall pigs in the summer of 1925. Presumably, the demand from the South will hardly be great enough to offset the decreased demands for feeding hogs next winter. However, the yields of the last five years were certainly unusual. A reduction of only 2 or 3 bushels in yield may decrease the crop to such an extent as to balance a considerable increase in acreage. For the States of Ohio, Indiana, Illinois, Iowa, Missouri, South Dakota, Nebraska, and Kansas, farmers show intentions to increase their corn acreage by 3.5 per cent. This increase in corn acreage over 1923 in this region, if coupled with yields as good as recent ones, would result in a large supply relative to the probable demand for corn.

HOGS.

Present conditions indicate that the "hog cycle" passed the peak of production during 1923. The unprecedented run of hogs to market during the fall and winter of 1923, and the record marketings of the past two months, were due largely to the large crop of pigs in the fall of 1922 and the spring of 1923. As reported in the pig survey of last December, the number of sows actually

farrowing in the Corn Belt last fall was 6 per cent less than in the fall of 1922, and for the country as a whole, 9 per cent less. Further, the farmers' reports of sows bred or to be bred for spring farrowing in 1924 show that in the Corn Belt 94.6 per cent as many sows as farrowed the previous spring have been bred, while in the entire country but 98.8 per cent as many have been bred as farrowed last spring.

However, a considerable proportion of sows bred are slaughtered before farrowing. For the entire country the number of sows bred to farrow in the spring of 1923 was 13.1 per cent greater than the number that farrowed in the spring of 1922. Actual farrowings, however, were only 3.9 per cent greater than the year previous. For the Corn Belt the number bred to farrow in the spring of 1923 was 15.6 per cent greater than the number that farrowed in the spring of 1922, while actual farrowings were only 8.2 per cent greater.

This would seem to indicate that this spring (1924) only about 85 to 90 per cent as many sows will farrow in the Corn Belt as farrowed there last spring, while, for the rest of the country, the number of sows farrowing will be around 90 per cent of last spring. This indicates that when the winter run of 1923-24 is completed, the supply coming to market will begin to be lower than last year.

Estimates indicate that the Corn Belt 1923 spring crop of pigs was about 2,500,000 larger than in 1922; while the winter slaughter of hogs to March 1 was over 3,000,000 larger than during the same period last year; but since the slaughter of 1923-24 included an unusual proportion of sows, it is to be expected that the marketings of hogs from March to May, inclusive, will continue high, though relatively not as high as those of the preceding months.

The decreases in the fall crop of 1923, and the prospective decreased spring crop of 1924, indicated by the pig surveys, are borne out by the character of the hogs slaughtered since July 1. From July to the last of January, 3,400,000 more sows were slaughtered in commercial slaughter than during the same period a year earlier. This was an increase of 22.5 per cent in the number of sows. Slaughtering of barrows and boars increased by 18.4 per cent in the same period. Had the number of sows slaughtered increased only as much as the number of males, 630,000 fewer sows would have been slaughtered during that period. This indicates that breeding herds have been reduced by around 600,000 sows between July 1, 1923, and February 1, 1924, and that the spring crop of pigs will be at least 3,000,000, or 7.5 per cent, less than the crop of last spring.

Smaller market receipts of hogs during the second half of 1924 may be partially balanced by a decrease in the export demand. During 1923 the foreign market took an amount equal to 13 per cent of the pork and 54 per cent of the lard produced under Federal inspection. While lower than the war years, the exports of pork were the largest since 1919, while the exports of lard were the largest ever recorded. However, during the five years 1909 to 1913, inclusive, exports amounted to 10 per cent of the pork and 55 per cent of the lard produced under Federal inspection, so the 1923 exports were not abnormally high, especially in view of the prevailing low prices. Whether our foreign customers will be able to take as large a share of the 1924 production is problematical. However, it is evident that there would have to be a very marked decrease in the export demand to offset the probable decrease in hog slaughter during the second half of 1924 and in 1925. In view of the continued strong demand from Europe in the last year, such shrinkage of export demand seems unlikely.

In the past, a period of low hog prices has generally been followed by too drastic a reduction in breeding herds, and a period of high prices by too great an expansion in hog production, with accompanying surpluses of corn in the first case and shortages in the second. To maintain a fairly stable relation between corn and hog production, the farm management program should aim to keep from getting the two enterprises too far out of balance. It seems probable that by the fall of 1924 breeding herds of swine will have been reduced enough to bring hog production thereafter up to a profitable level.

BEEF CATTLE.

The number of cattle other than milk cows on farms in 1920 was 43,398,000. By January, 1924, this number had been reduced 1,272,000. In 1920 the number of milk cows was 23,722,000. By January, 1924, this number had been increased by 953,000. All dairy cattle eventually produce beef and the dairy industry furnishes about 75 per cent of the veal.

18 *Miscellaneous Circular 23, U. S. Dept. of Agriculture.*

Slaughter of cattle and calves in 1923 was about 5 per cent more than in 1922, but only 1.4 greater than the 5-year average. The proportion of females slaughtered in November, 1923, was 61 per cent, compared with 52 per cent for the same period in 1922. Stocker and feeder shipments back to the country in 1923 decreased 6.4 per cent.

It is estimated that beef consumption in 1923 increased only about 3 per cent over 1922, or 1.1 pounds per capita. This compared with an increase of 15.4 pounds per capita or nearly 22 per cent in consumption of pork excluding lard. Even lamb and mutton consumption increased 5.3 per cent.

In a word, during 1923 the beef cattleman was able to move into consuming channels a slightly increased number of cattle at practically steady prices. He succeeded in holding the modest gains made during 1922 but was unable to materially improve his market position.

A survey covering the more important feeding areas indicated that on January 1, 1924, there were just about as many cattle on feed in the Corn Belt as a year earlier, whereas in some of the Western districts, particularly those which normally supply Pacific coast markets, there were decreases amounting to as much as 40 per cent. Average weights, however, were somewhat lighter.

Present indications would seem to lead to the expectation that the marketward movement during 1924 will be orderly and about normal in volume. There are those, however, who anticipate lighter receipts at markets next fall because of an anticipated decreased movement of range cattle. If prices advance sufficiently to encourage cattlemen to expand their operations this may eventuate. If, however, prices do not show more marked improvement than in 1923, it seems reasonable to expect sufficient liquidation to bring total market receipts of cattle up to or above those of last year.

The condition of ranges on the Plains and in the far West on February 1, 1924, averaged 88 per cent of normal compared with 86 per cent a year ago. In fact the range at the present time is in the best condition it has been for years with the single exception of some of the valleys in southern California. In most regions the past winter has been comparatively mild and cattle have wintered well. The average condition of cattle on February 1 was 92 per cent compared with 90 a year ago. Cows are generally in good condition and the calf crop this spring should be above the average. Supplies of hay and other dry feed have been conserved and surpluses are reported from certain sections.

Total importations of live cattle into the United States during 1923 were only 138,481 heads, whereas in 1922 Canada alone sent 206,419 cattle across the border. Total importations of beef and veal in 1923 decreased more than 47 per cent compared with those of 1922. During the latter year Canada alone exported to the United States 19,625,000 pounds of beef and veal, whereas in 1923 total importations into the United States from all sources amounted to only 19,356,000 pounds.

The expected decrease in hog and pork production in 1924 should help the cattleman in two ways—first by reducing the demand for, and therefore the price of, corn, and second, by relieving the market from the deluge of cheap pork which was so much in evidence during 1923 and allowing beef and cattle prices to make a nearer approach to the general commodity price level.

General industrial conditions will, of course, have much to do with determining beef and cattle prices. Beef is a prosperity meat and for that reason the cattleman usually suffers more than the hog producer during periods of business and financial depression.

To sum up, total receipts of cattle at public stockyards during 1924 are expected to be about equal to those of 1923 despite the possibility of somewhat lighter runs of range cattle next fall. If less pork is offered and pork prices advance, beef consumption may show some increase. In view of prospective favorable range and pasture conditions, cattle should come to market next fall carrying considerable flesh and fat. This, together with cheaper corn, may result in an increase in the average weight of cattle slaughtered during the early spring of 1925.

In a word, most signs appear hopeful for the experienced cattleman possessed of good judgment and reasonable resources: for the man who can keep down production costs. Although the cattle industry appears to have turned the corner, there is little apparent in the present situation to encourage material, immediate expansion.

DAIRY PRODUCTS.

The dairy industry since the war has been relatively more prosperous than certain other types of farming due to an increasing consumption of dairy products in this country.

In 1919, the per capita consumption of dairy products expressed in terms of whole milk was 831 pounds. In 1920 it was 841 pounds and in 1921, 923 pounds. In 1922 it rose to 950 pounds. This represents an increase of 14 per cent from 1919 to 1922. Available data for 1923 indicate a continued increase in per capita consumption.

This marked increase in consumption, total and per capita, was met by an increase in production of milk in the United States from 90,000,000,000 pounds in 1919 to 102,500,000,000 pounds in 1922, an increase of nearly 14 per cent.

In 1923 the net imports of butter and cheese amounted to 18,000,000 pounds and 56,000,000 pounds, respectively. With the net exports of condensed milk amounting to 184,000,000 pounds, deducted from these imports, there was left a net import balance equivalent to 477,000,000 pounds of whole milk.

Another significant fact to be noted is that during 1923 there was accumulated in the United States surplus stocks, principally of condensed milk and cheese, equivalent to 603,000,000 pounds of whole milk in excess of the stocks at the beginning of the year.

Estimates of the number of dairy cows in the United States on January 1, 1924, indicate that milk production will closely approximate the amount required for consumption at the present rate of consumption. A somewhat unfavorable factor in the outlook is the possibility of increase in supplies imported from foreign countries.

Dairy production has increased in foreign countries since the war. Already in 1922 the surpluses from exporting countries were fully equal to the pre-war exports and data available for 1923 indicate that a further increase was made that year. If the trend of milk production in exporting countries continues to increase as in recent years, the surplus available for export in 1924 will exceed that of 1923.

Preliminary reports show that Denmark has just finished a record year of butter export, with 242,000,000 pounds shipped out. Holland's exports of butter during 1923 amounted to 53,000,000 pounds, a slight increase. New Zealand, with 127,000,000 pounds of butter to the United Kingdom, more than maintained its record exports of 1922. Butter exports from Argentina were materially increased; its shipments to the United Kingdom alone were 55,000,000 pounds compared with 40,000,000 for 1922 and 7,000,000 before the war. Australia, on the other hand, suffered from severe drought last year which cut in half her 1922 butter exports of 101,000,000 pounds to the United Kingdom. Siberian butter has again come into the British markets. The Baltic States are becoming factors of some importance with their small but growing surpluses of butter.

Great Britain is the chief buyer of the world's exportable surplus of dairy products. In 1923 Great Britain imported besides shipments from the Irish Free State, approximately 5 per cent more butter than in 1922, bringing her total net imports up to 575,000,000 pounds. This was more than the amount of butter imported by that country in any pre-war year and indicates a total consumption of butter in Great Britain exceeding any pre-war year. British imports and domestic production, when measured in milk equivalent about balance each other. It is to be noted therefore that the British dairy industry has likewise been expanding in recent years.

If, in 1924, demand in the United States maintains greater strength in comparison with foreign demand, it is quite probable that a larger share of the world's exportable surplus will seek market in the United States and may prove to be an important factor in the dairy situation. The effect necessarily will be most marked upon those products which are imported.

Production of creamery butter in the United States has increased in the past five years an average of approximately 45,000,000 pounds annually. The estimate of number of dairy cows in the United States on January 1, 1924, showed an increase during the last year of 238,000 head. This represented more than the average annual increase for the previous five years and occurred mainly in butter producing territory. In other words, the probable increase in domestic butter production in 1924 is not likely to be below the prior average figure of 45,000,000 pounds.

From the best information available, the per capita consumption of butter in the United States in 1923 was approximately up to the pre-war level.

Available information shows the production of cheese in the United States in 1923 as an increase over 1922. Cheese imports amounted to 64,000,000 pounds, which slightly exceeded the heaviest pre-war annual importations.

It appears that any further increase in domestic cheese production must take account of the fact that our per capita consumption of cheese is practically back to the pre-war level. A very sensitive relationship usually exists between the price of cheese and the price of butter.

Total unsold stocks of condensed and evaporated milk at the beginning of 1924 are exceedingly large. The foreign demand in 1923, by the inclusion of purchases for European relief, about equaled that of 1922. There was a slight increase in the domestic demand. The present tendency to reduce production of condensed and evaporated milk may help toward bringing the prices of these products back to a parity with butter and cheese.

There is an increasing demand in cities for ice cream and milk drinks which may possibly offer an outlet for a part of the milk supply previously used for condensing purposes. Condensers usually also turn to the butter industry as an outlet for any milk which can not be profitably manufactured.

From many cities reports are current that the surplus of fluid milk and cream available for city distribution is increasing. The effect of this surplus and the relation of the milk market in general to the whole dairy situation may be expected to cause milk prices in 1924 to follow closely the general trend of butter and cheese prices.

In the last two years fluid milk and cream consumption in households has increased 4 gallons per capita or approximately 8 per cent. Improvement in quality accompanied by better merchandising and advertising should tend to promote a still larger increase in consumption.

The past year was one of great industrial prosperity, and consumer demand was maintained at a relatively high level. While the general situation does not appear necessarily disadvantageous to efficient producers, it clearly raises possibilities of increasing imports and a lower margin of profits. Although consumption is increasing, it is not a time for undue expansion of production but rather for greater efficiency.

SHEEP AND LAMBS.

The drastic liquidation in the sheep and lamb industry during 1920 and 1921 brought the production of lamb and mutton during 1922 and 1923 into a more favorable relation to demand. In a year when other meat animals were selling at relatively low prices, lambs sold during 1923 at generally satisfactory prices, though there was a downward tendency in prices until the last part of November. This decline checked the movement of stockers and feeders to the country in the late fall of 1923 and early winter of 1924, and resulted in fewer lambs being placed on feed. Since then prices have rallied sharply, and the market has been strong.

Though the estimated number of lambs on feed in the Corn Belt and the Western States on December 1, 1923 (5,170,000), was 3 per cent higher than twelve months previous, heavy marketings in December and a falling off in the purchase of stockers and feeders decreased the estimated number on feed by January 1, 1924, to 4,120,000 head, 4 per cent less than the number on the same date of last year. The decrease, as compared with a year ago, occurred mainly in Idaho, Nevada, California, Southern Colorado, and the Corn Belt, and was partly balanced by increases in Utah, Montana, Wyoming, and northern Colorado. The reduction of lambs on feed in the Western States was confirmed by the low shipments to market from that territory during January and February as compared to last year.

Information now available regarding conditions in the early lambing areas—California, Arizona, Kentucky, and Tennessee—indicates a material reduction in the market supply of spring lambs in April, May, and June, as compared with last year. The Corn Belt and the Northwest give promise of a larger crop than last year, hence, market supplies in July and August will probably be larger.

Prospects with regard to future market supplies favor a continuation of the present strong market during the next two or three months. The crop of late lambs, however, if it proves to be as large as present conditions would indicate, is a factor which can not be ignored. The rather limited outlet for lamb and mutton as compared with that for other meats results in the market being

often oversupplied temporarily, and these gluts cause sharp price fluctuations. Furthermore, while lamb consumers as a class are usually able to pay more for their meats than those who depend mostly on beef and pork there is a limit to the price which even they will pay for this delicacy.

The demand for wool makes part of the composite demand for sheep and lambs. The future trend in the sheep industry will be partly the result of changes in the price of wool. Future development in lamb and mutton production will be affected by the trend in wool prices, and no long time outlook can ignore this side of the question.

WOOL.

Since the United States produces only 10 per cent of the world's total production and we consume 25 per cent of the total world supply, the conditions and the activity of foreign markets have a decided influence upon domestic conditions.

In 1923 wool production in the United States was 50,000,000 pounds less than the 1909-1913 yearly average, but slightly greater than in the preceding year. The world's wool production decreased about 600,000,000 pounds since 1909-1913, which is about equal to the yearly requirements of the United States. The world's production for 1923 was about 66,000,000 pounds below that of 1922.

Thus it will be seen that the immediate trend of wool production is downward. Advices from the principal wool producing countries other than the United States indicate that production in 1924 will not equal the 1923 clip. In no case is there any intimation of a substantial increase in production for 1924. A slight increase in the United States may be expected in view of the 3.1 per cent increase in numbers of sheep on farms on January 1, 1924.

United States 1923 imports were 190,000,000 pounds more than the 1909-1913 yearly average. Imports into the United States for the seven months ending January 1, 1924, were, however, only 37 per cent of the imports for the corresponding period one year previous. Moreover, exports and reexports from the United States during 1923 were the largest on record. Imports into England, France, Belgium, and Germany also showed a decrease to an amount of 750,000,000 pounds. The 1923 imports of these European countries showed a decrease of approximately 50 per cent compared with 1922.

Wool prices in London during December, 1923, were higher (scoured basis) than those prevailing for the same month one year previous. Fine wools were selling slightly higher, while medium wools sold from 7 to 10 cents per pound higher.

Indications point toward considerably lower quantities of world carry-over stocks. Enormous supplies held by the British-Australian Wool Realization Association decreased from 913,215 bales on January 1, 1923, to 209,614 bales on January 1, 1924. Reports from South America and Australia indicate that stocks on hand were very small. Stocks in the United States on January 1, 1924, were the lowest reported since 1917.

On the supply side, the wool situation is distinctly favorable for producers. The price of wool has stimulated production in this country during the past year and it appears that, with present tariff rates, a further increase in production could be profitably made.

POULTRY AND EGGS.

Farms are equipped for producing more chickens and eggs in 1924 than in any previous year. It is estimated that there were 474,000,000 chickens on farms January 1, an increase of about 50,000,000 or nearly 12 per cent since the preceding year and of 115,000,000 since January 1, 1920, or about 32 per cent.

In the West North Central States, which rank first in surplus farm production of poultry and eggs, there were 140,000,000 chickens on farms January 1, a gain during 1923 of 18,000,000, or 15 per cent. The South Central States also gained 15 per cent in numbers during 1923.

Production of eggs increased 33.3 per cent from 1920 to 1923, whereas the population of the country increased only 5.3 per cent. The possibility of export trade becoming a material factor in absorbing this increased production is negligible.

The per capita consumption of domestic chicken eggs, exclusive of those set for hatching, has increased from 14.6 dozens in 1920 to 16.5 dozens in 1921, 16.9 dozens in 1922, and 18.6 dozens in 1923.

The average weighted price of eggs to farmers in 1923 was 27.27 cents per dozen against 25.86 cents the previous year, or 5.4 per cent higher. This spring, however, market prices of eggs have taken a big drop and are below prices on March 15 of last year.

The dressed poultry situation presents a somewhat more favorable outlook at this moment. The carryover of frozen stocks on March 1 was 17.6 per cent lower than on the same date last year, and was 1.1 per cent lower than the 5-year average. Poultry prices also are in a more favorable position than egg prices. This shortage of storage stocks of poultry may be expected to permit an increased production of poultry to be marketed without greatly reducing prices. Turkeys do not share in this favorable storage position for the stocks are heavier than ever before. The possibility of lowered egg prices, however, may have a material effect upon the dressed poultry situation. If egg prices decline sufficiently to discourage producers, causing them to reduce their flocks, a materially larger number of hens will be marketed with the resulting effect on poultry prices, especially of hens. Such reduction of flocks would tend to reduce egg production and strengthen egg prices.

No important change may be expected in import and export trade movement. Although the tariff of 1923 was higher than during the greater portion of 1922, the imports of dried and frozen eggs dropped off only about 2,000,000 pounds, or about 12 per cent. Production costs in China, which is the principal source of our import supply, are apparently such that we may expect to continue to receive egg products in considerable quantities from that country during 1924. Under the present tariff, imports of shell eggs are likely to be negligible. While there may be some fluctuations in exports of both poultry and eggs, the quantities exported will probably approximate those of 1923 and will not be sufficient to influence materially the poultry situation. The situation in 1924 clearly indicates an increase in production of both poultry and eggs. The increase will probably be such as to make an accelerated rate of consumption of eggs necessary.

While an increase in the supply of poultry on the markets is also indicated the comparative shortage in the carryover of cold-storage stocks of most classes may enable the market to easily absorb the supply.

In view of the outlook for poultry industry in 1924 producers should consider carefully the results of an expansion of poultry production. Every effort should be made to obtain more economical and more efficient production for eggs produced at a lower cost and a larger production per hen would tend to increase the profits, should lower prices prevail. Higher quality products will help to stimulate consumption and thereby strengthen market prices.

FARM HORSES AND MULES.

On January 1, 1924, the number of horses and mules on farms in the United States was less than 90 per cent of the number on farms five years previous. During this period the average value per head of horses decreased from \$98 to \$64, and mules from \$136 to \$84.

Receipts of horses and mules at 67 markets in the United States decreased from 1,068,000 in 1919 to a low point of 317,000 in 1921 and increased to 551,000 in 1923.

Stallion and Jack registration figures indicate that the numbers of mares being bred has been decreasing regularly since 1915. The stallion registration figures from 22 States show that the number registered in 1922 was 34 per cent of the number registered in 1915. There was little if any increase in 1923.

It is probable that a shortage of good work horses will occur before many years and that the prices of horses will reach a higher level within the next few years. Although there appears to be a tendency in the larger cities to utilize horses for short hauls, there does not seem at present to be any marked increase in the general city demand for horses.

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THE AGRICULTURAL OUTLOOK FOR 1925

Prepared by the Staff of the Bureau of Agricultural Economics

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THE PURPOSE OF THIS REPORT

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U.S.

President Calvin Coolidge in his address at the International Livestock Exposition last December said:

“Inasmuch as orderly production is a necessary preliminary to orderly marketing, the well-informed farmer must keep himself posted, months in advance, concerning the probable production of various kinds of livestock during the coming season, as well as concerning the probable requirements of the market.”

Orderly production for agriculture is the end in view in preparing this report. Farmers who determine what to produce and how much to produce on the basis of prices which will probably prevail at the time when the product will be ready for the market stand a much better chance of securing a profit than those who are guided entirely by prices at planting or breeding time.

This and previous annual outlook reports have been prepared by the United States Department of Agriculture to provide a better base upon which farmers may make plans for the coming season, and especially to aid leaders in the cooperative movement in formulating production and marketing programs. They are based upon surveys of conditions affecting agricultural production and demand at home and abroad at the present time. In considering the suggestions for changes in acreage due regard should be given to the fact that variations in yield caused by the season's weather conditions are not here predicted.

American agriculture has made good progress since the war in readjusting the proportions of the major lines of production. Further reduction, however, in the total amount of land, labor, and capital employed in agriculture would improve the prospect for satisfactory prices.

The situation on major lines of production presented in the following pages should be studied with particular care. As a whole, radical changes from the general trend of the past year are not recommended. The future will be safeguarded principally by maintaining production on an even keel, avoiding, so far as possible, violent changes in any direction as the result of unusual prices now prevailing which are not assured for the next crop.

SUMMARY

The general outlook for American agriculture is fairly encouraging this year as compared with recent years, although there may be a slackening in domestic demand for farm products next winter.

Some aspects of the situation should receive special consideration. For the United States as a whole, little change from the production program of 1924 is recommended. Present high prices for wheat are mainly due to low yields in some countries. The indicated winter wheat acreage is somewhat larger than last year, and it is probable that the total world acreage will be at least as large as last year. If the yield in 1925 is normal present prices can not be expected for the 1925 crop.

Growers of spring wheat, especially those who may expect to benefit from the tariff, should be cautious about increasing their acreage over last year. The production of flax, on the other hand, is still somewhat under domestic consumption and flax prices for the 1925 crop will probably be relatively higher than wheat. Some slight shift from wheat to flax, therefore, may be profitable.

A marked shortage of hogs during the coming year appears probable and hog prices should advance to much higher levels. Increased breeding for fall farrowing, therefore, should be profitable. The feeding demand for 1925 feed crops evidently will be smaller than during the present crop year. Corn and oat acreages, therefore, should not be increased especially by farmers who sell their crop.

Continued expansion in the dairy industry has depressed prices of dairy products, and with a growing foreign competition a further increase in the number of dairy cows would probably retard recovery of prices.

A cotton crop as large as last year should be absorbed at sustained prices. Present prices, therefore, should not discourage growers from planting the usual cotton acreage.

Producers of the major farm products should follow a program of balanced and economical production about the same as last year. In general, the higher prices realized for 1924 products were due to reduced production, here or abroad, rather than to any marked improvement in demand. Farmers should continue to devote available resources to the reduction of existing indebtedness rather than to general expansion of production which might result in another period of low returns to farming.

In making plans for 1925, farmers in each section should consider the outlook for all the commodities that they produce or can produce. Though in general, marked shifts in production do not seem advisable, yet each farmer may possibly add to his net income for the year by modifying the acreage of his crop or the numbers of his livestock in the light of the outlook for each of the products he can grow.

A brief summary of the detailed outlook statements, which constitute the main body of this report, follows.

General business prosperity during the first half of this year will maintain the domestic demand for the 1924 farm products yet to be marketed and should stimulate the demand for the better grades of certain farm products. It is not assured, however, that the industrial improvement of the first half of 1925 will continue into 1926 at the same high level.

The foreign market for most American farm products promises to be at least as good as during the past year.

From present indications ample credit for farming purposes will be available in most regions of the United States on more favorable terms. Interest rates are now somewhat lower than in recent years and needed credit should be arranged for early in the season.

The present tendency in industry points to stronger competition for farm labor during the spring and summer of 1925 than prevailed during 1924. From present indications little change in farm equipment and upkeep costs are to be expected.

If there is an average world crop of *wheat* in 1925, the present high price of wheat can not be expected to prevail for the 1925 crop, although prices are likely to be better than in 1923. Growers of hard spring wheat are cautioned not to increase production above domestic requirements.

The shortage in the European crop of *rye* which was a contributing factor in the export demand for wheat does not seem likely to be repeated.

Flax acreage may still be increased somewhat before production with average yields will equal the present consumptive demand, and it seems probable that flax prices in the United States will be on a relatively higher level than

wheat during the next crop year if production is below the domestic requirements.

The outlook for *cotton*, although perhaps less favorable than in 1924 from the standpoint of production costs, is otherwise encouraging. From present indications stocks at the end of the current season will not be large and the improved foreign demand should be maintained. Another 13,000,000-bale crop could probably be absorbed at sustained prices.

Hog producers enter 1925 with every indication that prices during the next 18 months will be higher than at any time since 1920. Conditions therefore are favorable for expanding fall farrowings.

While the 1924 *corn* crop will probably be well cleaned up an increased acreage in 1925 does not appear advisable in view of the indicated reduction in the feeding demand.

Immediate prospects for the *cattle industry* appear moderately favorable. Prices for 1925 should average somewhat higher than for 1924, with the decreased supply of pork products as the chief strengthening factor. All conditions indicate that the industry is gradually working into a more favorable position.

Further expansion in *dairying* in 1925 seems inadvisable. An improvement in the prices of dairy products can hardly be expected if the number of cows is increased.

Prospects for the *sheep industry* in 1925 appear favorable. There does not appear to be any immediate danger of overproduction, as the increase in the number of sheep has as yet been only slight.

Although there are as many *horses and mules* of working age on farms as will be needed for the coming season, a decided decline in colt production in past years indicates a shortage in work horses a few years hence. It is believed that on farms where conditions are favorable to colt raising there might well be a somewhat larger number of mares bred in 1925 than in 1924.

The outlook of the *poultry industry* during 1925, from the standpoint of market egg prices is favorable, but from the standpoint of immediate poultry prices it is not so encouraging. Higher prices for other meats and possibly reduced feed costs should increase poultry profits during the latter part of 1925 and early 1926.

Oats production in 1924 was slightly in excess of domestic requirements and with no increase probable in domestic consumption during the next crop year any increase in the oats acreage in 1925 does not seem advisable.

While *barley* prices are at relatively high levels the general situation suggests that last year's acreage was sufficient under normal conditions to produce sufficient barley for domestic requirements and for the limited export demand for malting barley.

The production of *market hay* should be more closely adjusted to the decreasing demand. Production of alfalfa and other legumes might be increased profitably where the local supply is not equal to the consumption.

The supplies of *feedstuffs, forage, and manufactured feeds* are apparently sufficient until the new feed crops become available, and the price trend is more likely to work downward than upward.

The present low price of *potatoes*, which is due to the unusually heavy yield of last year, is likely to result in too small an acreage of potatoes this year. Since exceptionally heavy yield per acre again in 1925 is not probable, a potato acreage about the same as last year should be maintained.

Present high prices for *sweet potatoes* should not influence growers to plant a largely increased acreage of this crop this year.

Any substantial increase in *peanut* acreage in 1925 over that of last year may result in lower prices.

A *bean* crop in 1925 in excess of domestic needs would tend to put the price of the entire crop on an export basis, thus losing to the grower the benefit of the tariff of \$1.05 a bushel. If the usual acreage is planted in California in 1925 and other States equal the 1924 acreage, a crop in excess of domestic needs may result.

During 1925 there probably will be a sustained or slightly increased demand for such vegetables as *lettuce, celery, spinach, and cucumbers*, but little prospect for any increase in the demand for cabbage and onions and for such staple *canning crops* as *corn* and *tomatoes*. During recent years, however, the production of vegetables has been increasing rather more rapidly than the demand, and the tendency seems to be toward generally lower prices with increasing competition between the various commercial producing sections.

Present conditions indicate that increased plantings of *citrus fruits* and *western grapes* should be discouraged, and that any plantings of *apples*, *peaches*, and *pears* and other tree fruits should be confined to the best commercial sections and to the gradual replacement of old farm orchards in localities where a good local market seems assured.

Any increase in *tobacco* acreage this year is undesirable, excepting perhaps in some of the flue-cured types. The price outlook for most types of tobacco is better now than last year, but stocks on hand are still large.

Higher prices for *sugar* and *sugar beets* during the coming season are unlikely, because of the probability of a large carry-over of sugar from last year's crop.

Any considerable increase in production of *rice* in the United States is inadvisable. The efforts of rice growers in this country may well be directed toward increasing the quality rather than the quantity of their product.

DOMESTIC DEMAND

General business prosperity during the first half of this year will maintain the domestic demand for the 1924 farm products yet to be marketed and should stimulate the demand for the better grades of certain foods; but the domestic demand for the 1925 crops, from present indications, will be no better than the present demand, if as good.

The year 1925 opened with many factors pointing toward continued progress in business activity for the first half of the year. Agriculture, itself, out of the 1924 crops, is contributing an increased money income of about \$500,000,000, which is 4 per cent above the total farm income from the 1923 crop. The improvement is particularly marked in the Wheat and Corn Belts, where about 90 per cent of this increase is found. While contributing to an increased prosperity of the agricultural population in certain sections, too much importance should not be placed upon this moderate improvement. A large proportion of the additional income has already gone to reduce accumulated indebtedness of the past few years.

In addition to improvement in general business due to agriculture, there has been a marked increase in industrial wage earnings as a result of the increase in employment in basic industries, particularly in woolen fabrics, pig iron, and steel production. Building activity remains at a high level. Present easy credit induces further business expansion. The general price trend has been upward since June, 1924, and is now at the level it reached during the period of active business in the spring of 1923. The unusual activity of the stock exchanges since last November indicates further general business prosperity, at least during the first half of this year. Therefore sustained urban demand may be expected for the portion of the 1924 farm products yet to be marketed. Active business with full employment of wage earners at good wages, such as is indicated by the present outlook, will stimulate particularly the demand for certain products like cotton, wool, the better grades of fruits and vegetables, eggs, dairy, and meat products.

Although the factors influencing the demand for the current crop are favorable they do not necessarily indicate the conditions under which the 1925-26 crops will be marketed. It is not assured that the industrial improvement of the first half of 1925 will continue into 1926 at the same high level. Should an overstimulation of business and overproduction of manufactured goods occur in the next few months, there may be expected to follow a reduction in business activity, and, therefore, slackened demand for some of the 1925 farm products.

It is further probable that in the season for marketing the 1925 crop there will be a lessened farmers' total income in certain regions, which, through reducing the demand for industrial products, may reciprocally weaken the urban market for agricultural products. In the Wheat Belt, for example, farmers should not expect a repetition of the unusual situation of 1924: A very good crop in this country and a short crop for the rest of the world. In the Corn Belt, the short crop of hogs will probably be only partially offset by higher prices, while reduced feeding demands for corn will tend to reduce the total value of the corn crop. It is therefore probable that in the Wheat and Corn Belts, which comprise a substantial portion of American agriculture, there will be a diminished income as compared with 1924.

Furthermore, the poorer returns for these sections will not be materially offset by the better conditions in the range and dairy sections, and by the continuation of present conditions in the South. Relatively high prices for

many farm products may prevail through 1925, but possible reduction in marketings as compared with 1924 makes it unlikely that income from the 1925 crops will be sufficiently large to continue to support any marked expansion in general industrial activity.

FOREIGN DEMAND

The foreign market for most of the products of the American farmer promises to be at least as good as it has been the past year. For specific products the strength of demand will depend both upon the purchasing power of the most important foreign markets and the competition to be expected in these markets from the most important foreign producers.

The European economic situation is distinctly brighter than it was a year ago. In the great industrial centers of western Europe more confidence is apparent and production has been resumed on a larger scale. Loans from the United States have been largely instrumental in strengthening the financial situation. Employment of labor at increased real wages has increased the purchasing power of agricultural deficit countries. This increased purchasing power, however, does not necessarily mean greater imports of absolute necessities. In the wheat trade, for example, improved economic conditions facilitate trade but may not increase imports or consumption of wheat. Higher purchasing power, however, will improve and develop European markets for products which are not absolute necessities, but which give greater variety to the supply of food and clothing.

Economic improvement is most marked in Germany, where the stabilization of the currency in December, 1923, followed by the acceptance of the Dawes plan appears to have improved credit and revived industry. Employment and real wages have increased nearly to the 1913 level. If this favorable situation continues, Germany should be a good market for American farm products during the next few months. The revival of industry means greater consumption of cotton, of which the United States is the chief source. Short grain crops in 1924 coupled with higher purchasing power in industrial centers and better facilities for financing imports are favorable for continued sales of American wheat and rye, at least, until the next harvest. In spite of increased prices, the demand for American pork products in Germany has continued strong.

The United Kingdom is still suffering from depression in several of its key industries. Textile mills show greater activity but are not yet on a full-time basis. About 1,000,000 workmen in all industries are still listed as unemployed. The British situation, however, is bad rather in relation to pre-war conditions than in comparison with the present situation in continental Europe. Through all the postwar period British credit has been maintained and British people have always been able to purchase almost their normal supplies of farm products possibly excepting cotton and wool. The rise of sterling exchange nearly to par will tend to facilitate purchases during the coming year. The United Kingdom is the most dependable market for American farm products, and in spite of all efforts to favor the Dominions, it is likely to take American pork products, cotton, tobacco, and many other agricultural commodities in approximately the same quantities as in the past. Takings of wheat and flour, however, will depend somewhat upon the size of the Canadian crop.

France and Italy show continued economic improvement. Industries in both countries are generally active, bank deposits show large increases and employment conditions are healthy. France is more self-sufficient agriculturally than either the United Kingdom or Germany and furnishes a dependable market only for cotton and some minor products. Italy buys cotton and also is second to the United Kingdom in imports of wheat.

In general the present tendency in Europe is toward increased purchasing power in the great industrial centers together with increased production of agricultural products. To a large extent the heavy purchases of agricultural products in the United States by European countries since the war have been due to decreased domestic production of these products. But each year since the war has marked some progress in returning to pre-war production in the countries of central and western Europe. This increase in production which is encouraged by the governments of these countries tends to make them more self-sufficient and to diminish the need for our farm products. Grain production, however, has not recovered in Russia and the Danube Basin and lacking these former sources of supply western Europe must still purchase much greater quantities of grain from overseas than she did before the war. The

share of the United States in this greater market will depend upon the strength of competition from such countries as Canada, Argentina, and Australia. As eastern Europe recovers, competition will become still more keen. Producers of wheat especially should watch Russian and Danube conditions closely.

Of non-European markets, the Orient is taking much less wheat and flour this year than last, and is not likely to repeat last year's large imports of American flour unless there is a failure in the 1925 crop in Manchuria and North China. Japan is importing more cotton but less wheat and rice than last year. With its large sugar crop to exchange for our agricultural products, Cuba should be a good market this year, and Mexico shows economic improvement which should increase her purchasing power.

There is no reason to expect any less competition from Argentina, Australia, and Canada than in the past year. High prices for the present wheat crop in Argentina and Australia will certainly stimulate the seeding for the crop of next season in those countries. In Canada the competition will depend upon yields which may be expected to be higher than in 1924. Competition in meat and dairy products promises to be as keen if not keener than last year.

AGRICULTURAL CREDIT

From present indications ample credit for farming purposes will be available in most regions on more favorable terms. Interest rates are now somewhat lower than in recent years, and credit needed should be arranged for early in the season.

Additional credit for production purposes should not be used unless there is fair prospect of increasing thereby the net farm income, or unless essential to bring about sound diversification. Refunding of farm mortgage and short-term loans for longer terms and at lower rates of interest will prove in some instances advantageous. Full advantage should be taken of the improved credit conditions that now prevail and the available Federal credit agencies.

Farmers in general are now in somewhat better position than in recent years to finance their needs. This improvement in the situation is shown in a reduced demand for credit and in the growth of country bank deposits during 1924. The general ease in credit conditions is reflected in the low interest rates prevailing during most of the year. Discount rates at Federal reserve banks have continued to decline since 1920 and were at low levels in December, 1924. The interest rate on Federal farm loans is now 5½ per cent, while the Federal intermediate credit bank rate is 4½ per cent for direct loans to cooperative marketing associations and 5 per cent for discounts. Interest rates charged by commercial lending agencies have also declined since 1921.

While credit conditions in general are more favorable, there are some weak spots in the situation. Owing to numerous bank failures present credit agencies in some sections of the country are now inadequate. The breakdown of the old packer-controlled livestock loan companies and the weakened condition of many local banks have aggravated the credit situation in the range country. The funds of the Federal intermediate credit banks are available for sound loans when presented by solvent, well-managed credit agencies. This source of credit should be utilized in so far as possible to supplement the agencies now serving these regions. In the Cotton Belt efforts to reduce the amount of merchant credit for production purposes continue with resulting lower costs for credit and greater freedom in marketing. Merchant credit in general is expensive and unsatisfactory and its use should be still further reduced.

FARM LABOR AND EQUIPMENT

The present tendency toward increased employment in industry, road building, and construction work points to a stronger competition for farm labor during the spring and summer of 1925 than prevailed during 1924. Somewhat higher wages will probably be paid farm labor as a result. From present indications little change in farm equipment and upkeep costs for the country as a whole are to be expected.

Farm wages were higher in July, 1924, in the South and Southwestern States than in July, 1923, and lower at that time over the remainder of the country. During the latter part of the summer of 1924, the improved conditions of the spring wheat farmers and the demand for harvest labor brought wages in North and South Dakota and Minnesota to levels higher than a year previous, while most of the Southern States held to the wage levels established in July.

The cost of farm equipment and upkeep has been increasing since the low point of 1922 when retail prices of representative items purchased by farmers were between 60 and 70 per cent higher than pre-war prices. In November, 1924, prices of farm machinery and other materials averaged between 75 and 80 per cent above pre-war prices. Recent reports from the farm implement industry, however, indicate slight reductions in wholesale prices and increased sales.

No marked change in farm equipment and upkeep costs is to be expected however, during the present year, and, with the present upward tendency in farm wages, both labor and equipment costs during the summer of 1925 will be about the same level—something like 75 per cent above the pre-war averages of 1910-1914.

WHEAT

If there is an average world crop of wheat in 1925, the present high prices of wheat can not be expected to prevail for the 1925 crop, although prices are expected to be better than in 1923. Growers of hard spring wheat are cautioned not to increase production above domestic requirements. If the spring wheat acreage in the United States is held to that of last year and an average yield is secured, the production of hard spring wheat should about equal domestic requirements.

The year 1924 witnessed the very unusual situation of a large United States crop of wheat coming at a time of short world crop. The result was that the wheat grower in this country with a larger crop than in 1923 realized a much higher price per bushel than he received for the smaller crop of the year before. Present prices should not lead wheat farmers to deviate from programs looking toward a balanced system of agriculture.

The short crop of the world was due chiefly to low yields outside of the United States, and only slightly to a smaller acreage. The greatest decrease in production occurred in Canada, with considerable decreases in Argentina, Italy, and Germany. The prevailing high price of wheat, as compared with the price for several years past, is due not alone to a 10 per cent reduction in the world crop, but also to an increase in the world demand, which since 1918 has been on a definitely lower level than it was before the war. The low price that prevailed last year up to midsummer, due primarily to the large 1923 crop and heavy stocks, stimulated foreign consumption.

It appears that the world supplies at the beginning of the harvest of this year's crop will be very low. A small carry over will be a strengthening factor in the market until the movement of the new crop gets well under way, and should help maintain prices for the early crop, but the world's wheat acreage and the developments in the condition of the 1925 crop will determine the market trend and ultimately the price.

The winter wheat acreage sown for the crop that will come onto the market this year, as reported for the United States, Canada, India, and eight European countries, shows an increase of about 3½ per cent over that of last year. The total acreage reported for winter wheat represents more than half of the total winter and spring wheat area of the Northern Hemisphere outside of Russia and China. The European countries reporting, which represent more than half of the total wheat acreage of Europe, show a slight decrease. If the plantings in other European countries have shown no increase, the winter wheat acreage in the Northern Hemisphere is still somewhat larger than last year, and barring serious winter killing and unfavorable weather during the growing season should produce a crop of winter wheat equal to that of 1923. The condition of winter wheat in the United States and western Europe is generally reported as good, but conditions are less favorable in the important wheat section of the lower Danube Basin.

Canada will begin the season next spring under somewhat of a handicap, for the fall plowing of land intended for next year's crop is reported as only 32 per cent, as compared with 43 per cent last year and 48 per cent in the fall of 1922.

If the spring wheat acreage in the United States is held to that of last year, and an average yield is secured, the production should about equal the domestic requirements. It seems probable that with the present tariff in effect a production less than our requirements will bring a price for spring wheat appreciably higher than would a larger production. A situation may, of course, arise when the tariff will hold the very high-milling wheats above the general level but leave the price of the remainder of the crop at the general price level for wheat.

Durum wheat will probably be less profitable than hard spring wheat except in those regions where higher yields are generally secured. A short crop of durum wheat in the Mediterranean Basin and an increasing demand in this country have recently forced prices for this class of wheat to a level nearly as high as that for hard spring. The prices of durum wheat depend largely upon the export demand, since the production in this country is larger than our consumption. There has been some increase in the competition with durum wheat in the foreign markets by hard wheat from Canada and North Africa. If an average crop is secured in foreign countries, it may be expected to reduce the export demand for our durum, and a continuation of the present high price of durum as compared with hard red spring wheat could not be expected.

RYE

A review of the rye situation is necessary in considering the outlook for wheat since rye is an important competitor of wheat in many European markets. The shortage in the world's rye crop last year not only caused high prices for the rye produced in the United States, but has also contributed to the high prices of wheat. The rye acreage sown for next year's harvest in 12 countries reporting to date shows an increase of 5 per cent over last year's acreage. These countries last year had more than half of the world's total rye acreage outside of Russia. The area sown in the 10 European countries reporting to date is 6 per cent greater than last year's area in the same countries. No report has yet been received as to the acreage sown to rye in Germany which is the largest rye producer in the world outside of Russia. The condition of the winter rye seedlings in Germany is reported to be above average.

The rye crop outside of Russia was 16 per cent or 149,000,000 bushels below the crop of 1923. Moreover, last year Russia contributed 35,000,000 bushels to the supply outside of Russia, whereas this year she will contribute nothing. Such a shortage is not to be expected from next year's harvest.

FLAX

Seed flax acreage may still be increased somewhat before production with average yields will equal the present consumptive demand. It seems probable that flaxseed prices in the United States will be on a relatively higher level than wheat during the next crop year if production is below the domestic requirements.

Some margin must be allowed between production and consumption needs to make the full amount of the duty effective but from the best information available it appears that the present active demand for flaxseed is likely to continue during the next crop year and that it will be sufficient to absorb a material increase over this year's production without placing United States flax on an export basis.

The flax acreage has been increased between 800,000 and 900,000 acres each year since 1922 and flaxseed production in 1924, totaling slightly over 30,000,000 bushels, was the largest on record. But increased building and repainting, which had been neglected during the war, together with improving financial conditions, have caused increased demand for oil with resulting advance in prices.

During the war period, flax acreage was reduced in favor of wheat until production was brought down to around 12,000,000 bushels. Exports were almost negligible while imports exceeded yearly production by about 2,000,000 bushels.

Acreage in 1921 was still smaller than during the war period, totaling but little over a million acres. Because of the general business depression, however, prices declined to about \$1.45 per bushel, as the average farm price and imports were decreased until the total supply of flaxseed in the United States for that year was only 21,650,000 bushels.

In 1922 production and net imports totaled 38,243,000 bushels and in 1923 about 37,438,000 bushels. According to the best information available the linseed-oil requirements of the United States for 1924-25 will be the equivalent of about 40,000,000 bushels of flaxseed.

Since 1921 world production has increased about 55,000,000 bushels. If world production is increased further during 1925, flax prices likely will be lower than at present.

COTTON

The outlook for cotton production in 1925, though perhaps less favorable than 1924 from the standpoint of production costs, is otherwise encouraging. From present indications stocks at the end of the current season will not be large, foreign demand should be sustained, industry is in a liquidated condition, and cotton growers in general are in an improved financial position. It appears that the world could absorb at sustained prices a crop of 12 to 13 million bales and that producers in those sections of the belt where conditions are favorable for cotton production at present prices would be justified in planting not to exceed their 1924 acreage.

It now appears probable that the consumption of American cotton during the season 1924-25 will be considerably greater than that of last season and that although the carry over at the end of this season will be somewhat in excess of that from the 1923-24 crop, it will not be burdensome.

From the movement of the 1924 crop it may be inferred that the present season's supply of American cotton will be well enough digested to permit easy distribution of the 1925 crop. Exports to date have been much heavier than last year. European purchasers have been buying freely and there is greater activity in the cotton mills in England and Germany than at this time last year. The stabilization of exchange has made it possible for European merchants to participate to a larger extent in the handling of the crops, and stocks in European ports which have for the past three years been abnormally low are now increasing. On the other hand, although mills in Great Britain have slightly increased the number of working hours per week over last year, they are still on a short-time schedule with but little increase in exports of cotton goods. United States exports of raw cotton to France, Italy, and Japan are substantially greater than last year.

Offsetting the strength in the export movement was the low consumption of American mills in the early fall compared with the fall of 1923. But on the other hand, the American industry seems to be fully liquidated, stocks of manufactured goods being much less throughout the industry, so far as ascertainable at this time, than in the fall of 1923. Mill stocks of raw cotton are also less than last year. Consequently any increase in consumer demand would be likely to be felt promptly in the movement of raw cotton. The sections of this report on "foreign and domestic demand" show that a sustained if not increased demand, especially in the United States, is probable, indicating that the season's large crop will be well absorbed.

A survey of the foreign growths shows an unusually large production in India this season. Most Indian cotton, being of shorter length, does not ordinarily compete directly with the American crop except when the price of American cotton is relatively high, but the general effect of an increased supply of Indian cotton can not be ignored. It should be noted, incidentally, that there is an increasing area in India in which varieties which do compete directly are being grown, though it will probably be some years before the tendency toward better staples will offer serious competition. The Egyptian crop is larger this year, but not unusually large. Material increase of production in Egypt is unlikely. In other countries, notwithstanding the continued effort to encourage cotton growing, the total production is not a large factor in the world market. No very good figures of world carry over of all cotton can be obtained at this time. Such information as is available indicates that the world carry over will be somewhat larger than for either of the two preceding years but not excessively so.

Looking at the conditions under which the 1925 crop will be produced it is apparent that although the present crop was of about the same value as that of the last year it was produced more uniformly throughout the belt than in the two preceding seasons. As a result, financial conditions in the Cotton Belt have materially improved, particularly in regions that have escaped the boll weevil. Banking conditions are good, and interest rates are lower. Present indications are that the 1925-26 cotton crop will be produced at a slightly higher cost per acre than the two preceding crops. The trend of wages paid to farm labor is slightly upward, especially in Texas, Oklahoma, North Carolina, and Alabama, where competition with industries is most noticeable. The cost of keeping mules will be appreciably higher because of higher feed prices. Wholesale prices of materials used in the manufacture of fertilizers indicate that cotton fertilizers will cost the farmer slightly more than last

year. These three items of cost roughly approximate two-thirds of the total cost of production, taking the belt as a whole.

On the other hand, there are a few costs that in many regions have a tendency toward lower levels, such as farm machinery, planting seed, and calcium arsenate. Calcium arsenate, from present indications, will be available at the lowest price prevailing since it has been recommended for weevil control. Individual growers should estimate the minimum amount they will need and secure that amount during the early spring. By doing so farmers not only save money by avoiding the higher prices forced by rush demands on limited local supplies, but also will make it possible for manufacturers to stabilize their production and provide an adequate supply.

In addition to a general tendency for slightly higher costs for growing an acre of cotton in 1925, it is likely that there will be an even greater increase in the cost of growing a pound of cotton as compared with 1924. This is based on the assumption that there is a greater chance that yields will be less in 1925 as compared with 1924 than the chance of their being greater, since 1924 witnessed unusually high yields. Low yields, however, with accompanying lower production would probably result in a price that would offset the increased cost per pound.

In summary it appears that, assuming a continuance of business prosperity and barring unusual developments, the world could absorb at sustained prices a crop of American cotton in 1925-26 of twelve to thirteen million bales. However, in the event that the producers of cotton respond to prices of the pre-planting season in the same manner that they have for the past 10 years, there will be a decrease in acreage, although the better financial conditions in the belt, with producers in position to finance a full acreage, will tend to offset this usual tendency. In the event that this should prove to be the case, and assuming lower yields, the 1925-26 crop will be somewhat less than the 1924-25, hence would be absorbed at sustained or higher prices. It must be remembered, however, that the effect of the growing season's weather can not be foretold—good weather would mean another high yield.

In shaping their program for 1925 growers should, of course, consider carefully local conditions in connection with the more general situation, and the prospects for a profitable employment of their land, labor, and equipment in the production of other crops, particularly in the production of feed.

HOGS

Hog producers enter 1925 with 18 per cent fewer hogs than a year ago and every indication that prices during the next 18 months will be higher than at any time since 1920. Six to eight million fewer pigs will be born next spring than last spring. Fewer sows will farrow next fall than farrowed last fall if producers respond to the unfavorable relation of corn and hog prices as they have done in the past. Nevertheless, conditions are favorable for expanding fall farrowing. Breeding plans should be based not on present price relations, but on the relations that are expected to prevail when the pigs are ready for market.

A further reduction in hog production is highly undesirable both from the point of view of requirements for domestic consumers and from that of long-time policy of production.

Compared to the trend in the slaughter of hogs, the pigs born during 1924 represented about a normal crop. The reduction to normal has already caused hog prices to rise to about the equivalent of the average price for the period 1909-1913, taking account of the change in the purchasing power of money. Farmers' reports of sows bred or to be bred for spring farrowing indicate that the spring crop of pigs in the Corn Belt will be about 25 to 27 million, as compared to 33 million in 1924 and 40 million in 1923. This will result in receipts in the fall and winter of 1925-26 much lighter than for several years.

The present business situation indicates that during 1925 American demand will be at least as active as during 1924. The foreign outlook is for steady demand, the improved purchasing power of Germany and the gradually improving economic conditions in other countries enabling them to continue as active bidders for pork and lard. However, still higher prices will undoubtedly result in decreases in the volume of our pork and lard exports.

Present supply and demand conditions are sufficient to assure a year of prices higher than in any recent period except that of war-time inflation.

If the recent high price of corn stimulates some increase in acreage, even with a yield per acre as low as that of 1924, the total production would be somewhat greater in 1925. The number of livestock has been so greatly decreased since a year ago that even an average yield of corn would prove more than enough for all ordinary feeding demands. Should there be a large yield of corn, with the reduced demand, considerably lower corn prices would result.

These facts indicate that the chances are in favor of fall pigs proving profitable enough to justify some expansion in sows bred for fall farrowing above the number of last year. Fall farrowings may be materially increased by breeding gilts for early fall farrowing that might otherwise be sent to market. It is probable that prices will be good for sows next winter. In fact, the full force of the shortage of hogs will probably not be felt in the markets until the early part of the run of 1925-26 or later, depending upon the size of the 1925 corn crop.

The shortage of the hogs for 1925-26 offers the South an opportunity to supply a large part of its own demand for pork in a year when prices will be attractive. The extent to which hog production in the South may be profitably expanded depends largely upon the extent to which the production of feed crops can be increased. Where peanuts or more corn can be grown in 1925 it probably will pay to expand farrowing in the fall of 1925 up to the limit of the available feed.

CORN

The 1924 corn crop will probably be well cleaned up, but an increased acreage in 1925 does not appear advisable in view of the indicated reduction in the feeding demand. Stocks of old corn on farms are likely to be smaller than usual in the beginning of the new crop year 1925, but it appears that not more than an average crop will be required to supply the needs of the country for both feed and commercial purposes.

Acreage as large as that planted in 1924, if coupled with yields as large as in recent years, except 1924, would produce a crop in excess of the probable feeding demand and other domestic requirements and result in materially lower prices to farmers who sell their corn.

The prospect for a large corn crop in 1924 indicated by slightly increased plantings failed to materialize because of adverse weather conditions, and the total production fell short of the 1923 crop by more than 600,000,000 bushels. The carry over from the 1923 crop was not large, so that the prospect of a much smaller supply of corn this year resulted in a rapid advance in prices.

This advance in price, together with the decreased feeding demand on farms, has caused a heavier marketing of corn than was expected, and commercial stocks have been materially increased. The reduction in the number of cattle and hogs on feed will result in a reduction of between 350,000,000 and 400,000,000 bushels in feed requirements during the present crop year. Other feed grains, the total supply of which is about 235,000,000 bushels larger than last year, and which have been relatively cheaper than corn, are also being used extensively to supplement the short crop.

The higher prices have caused the most economical feeding of corn, and it appears that the feeding requirements are being rapidly adjusted to the supply so that sufficient corn will be available for commercial needs and allow for some carry over into the next crop year. The poor quality of the crop in a large section of the Corn Belt, however, will reduce the effective supply considerably below the amount indicated by the production figures. With the smallest hog production during the past 10 years indicated, and with no material increases contemplated in the number of cattle or other livestock, the domestic feeding demand will be materially smaller for the 1925 crop than during the present crop year.

Farmers who will need corn early in the fall should plant an early maturing variety for at least a portion of the crop to supply these needs.

BEEF CATTLE

Prices for beef cattle in 1925 should average somewhat higher than for 1924. The industry is gradually working into a more favorable position due to the relation of beef to competing commodities, especially pork, and to improved industrial conditions, and in no small measure to the cattleman's own sacrifices. Market receipts will probably be somewhat smaller than in 1924. All conditions indicate that the long-time outlook for the industry is even more favorable. In a word, the sun of hope for the cattleman seems to be in sight,

but it is still on the horizon, and will probably not reach the zenith until several years hence.

For the next few months reductions in the number of cattle at markets will be confined largely to better grades or, in other words, to grain-finished cattle. Lower grades will be plentiful and the supply is expected to meet increased competition from dairy cattle. Presumably the price spread between the better grades of grain-finished cattle and the lower grades will lessen in seasonal manner during the next few months and then widen materially as the year advances. With any improvement in the feed situation and in the prospective prices for fed cattle, a fairly active demand for stockers and feeders is expected in the fall of 1925, and prices on such cattle should average a little higher than in the fall of 1924.

As a war legacy the beef cattle industry has been suffering from overproduction during the last five years. The domestic demand has not been sufficient to consume the quantity of beef produced at prices remunerative to the cattleman. The trend to a more normal production has been evidenced by a marked shift from beef cattle to dairying and to sheep, particularly during the last two years. Some of the most pronounced signs of liquidation were evident during the past year. As compared with 1923, nearly 600,000 fewer cattle and calves were returned from market centers to the country for finishing, although receipts were the largest since 1919. This resulted in an increase of 6.3 per cent in the number of cattle and calves slaughtered over 1923.

The stocker and feeder movement at all markets during the last six months of 1924, compared with 1923, showed a decrease of 14 per cent. The estimate of cattle on feed in the Corn Belt on January 1, 1925, showed a decrease of 18 per cent, compared with January 1, 1924. Marketing and slaughter in December were the largest for that month since 1919. While feeding cattle were bought lower than in 1923, this small saving has been, in many instances, discounted by high feed costs. The high cost of feed will no doubt shorten feeding periods, thus limiting the number of well-finished cattle for the summer and fall markets.

The estimated number of cattle other than milk cows on farms and ranges January 1, 1925, was 39,609,000, compared with 41,720,000 in 1924. The estimated number in 12 range States declined 4.6 per cent from last year, and is 7.9 per cent below 1922, indicating a continued downward trend in range cattle production.

Physical conditions in the range States during the last half of 1924 were generally the poorest since the disastrous year of 1919. Fall and winter ranges were generally poor to bad. Hay and forage crops were short and prices high. Since the middle of the summer the drought condition has extended to the large areas in the Southwest. On January 1 the condition of ranges was 77 compared with 91 for last year. Condition of cattle was 84 compared with 93 for January 1 last year. Already considerable losses have been reported and the 1925 calf crop will doubtless be below the average for the last four years.

Liquidation of old range cattle loans continues. The balance due the War Finance Corporation by livestock loan companies on November 30, 1924, was 21.9 per cent of the amount originally advanced to all livestock loan companies. Old loans made by private agencies have been greatly reduced. Credit for new range cattle loans is limited and should be used to improve the herd rather than increase its numbers.

Even at present price levels, American beef can not compete with Argentine beef in European markets, so there is no prospect of an improved export trade. On the other hand any probable increase in the price level is not likely to be great enough to attract Argentine beef to the United States.

While industrial conditions are expected to continue favorable, the greatest strength in the beef market will be due to the decreased supply of pork products. The price situation has changed materially during the last six months and consumers' demand is expected to shift more to beef as the supply of pork diminishes.

DAIRYING

Further expansion in dairying in 1925 seems inadvisable. A recovery in prices of dairy products could hardly be expected should the number of milk cows be further increased. In addition to the fact that domestic production appears adequate, the foreign dairy situation is such as to keep world market prices low and thus limit the height to which our butter prices can rise without bringing in foreign butter.

The marked expansion of dairying in the principal butter sections shown by the increase of 4.2 per cent in the estimated number of milk cows in that area during 1924 as compared to a 2.2 per cent increase for the whole country, was largely caused by the unfavorable returns from other farm enterprises since the war.

Beginning the year 1924 with an increase in estimated number of milk cows on farms of but 1.4 per cent over January 1, 1923, production increased fully 3 per cent during 1924, because of the unusually favorable weather and pasture conditions during the flush season, resulting in the low butter prices which prevailed the second half of the year. With most of this increase in production diverted into butter, production of butter increased approximately 8 per cent over 1923. This heavy production was reflected in the accumulation of stocks in storage which on September 1 reached a peak of 156,440,000 pounds. Under the influence of these conditions butter prices did not follow the usual upward tendency during the late summer and early fall months.

Domestic consumption should continue heavy in 1925 as favorable industrial conditions throughout most of the year are expected, and because of the tendency toward heavier per capita consumption of milk and dairy products stimulated by advertising and educational work.

European demand for dairy products can not be expected to improve in the near future as it did during the past year. The United Kingdom is now consuming more heavily than in pre-war years. Germany is already fully back to pre-war volume of butter imports. The recovery of imports in that country took place within the past year, exerting an unusually strengthening influence upon world markets and offsetting the effect of heavier world production. Russia is an increasingly important source of supply for the world's markets. Countries in the Southern Hemisphere, including New Zealand, Australia, and Argentine, where dairy production is now exceeding all previous records, are to be regarded as important influences in the world's butter markets during the coming year and probably as increasingly important influences in the future.

While 1924 may not have been as profitable a year for dairying generally as was 1923, those who have recently gone into the dairy business would do well not to abandon it because of a single year of higher returns from other farm enterprises. Weeding out the least efficient cows and feeding more carefully would help to meet the present situation, and still leave the farmers of the country in good position to meet the steady growth in the demand for dairy products which each year is showing.

SHEEP AND WOOL

Prospects for the sheep industry in 1925 appear favorable. The world outlook and the prospective meat situation in this country promise prices for 1925 at least on a par with those of 1924. There does not appear to be any immediate danger of overproduction, as the increase in the number of sheep has as yet been only slight.

For more than two years lambs and wool have commanded prices well above those of most farm products and more than 50 per cent above the pre-war level. After 1925 some recession in returns from sheep may occur.

Market receipts of sheep and lambs may show a moderate increase over those of 1924, but with somewhat better demand it is not anticipated that this increase will be sufficiently large to bring about any marked lowering of the average price but frequent and wide temporary and seasonal fluctuations in price are anticipated.

During 1924, wool advanced sharply with increasing consumption and the disappearance of the war accumulations. American wool prices are ordinarily closely related to world prices, since more than half of all our wool is imported though a large portion of our requirements of certain grades are produced here.

With low business activity, American mills consumed about one-sixth less wool in 1924 than in 1923. There has been a decided increase in activity since the middle of 1924, and with expected further improvement in business activity it seems probable that the demand for wool during 1925 will be stronger than during 1924. Our wool prices are still somewhat below the world level, taking account of the tariff, and with increasing domestic consumption further advances may occur.

Some expansion has been going on in the industry ever since the low point of production was reached in 1922. Thus far this expansion has not mate-

rially affected market receipts, which in 1924 were only 175,000 head greater than in 1923. This may mean that animals were kept at home to increase the breeding stock instead of being sent to market. However, the 2 per cent increase in the estimated number of sheep this January over last January does not indicate that the expansion has yet been great.

During the past year or two there has been a rather marked tendency for cattlemen to shift to sheep, and if this movement continues for a time it will materially increase and hasten expansion in the sheep industry.

There has been some expansion of sheep in the spring-wheat country. On farms in these sections and in other sections where there is a definite place for a flock of sheep, even with materially lower prices for lambs, they may be profitable, but this should not be interpreted as a recommendation that sheep be introduced on those farms where they can not ordinarily compete with hogs and cattle.

HORSES AND MULES

Though there are as many horses and mules of working age on farms as will be needed for the coming season, a decided decline in colt production during the past few years points to a future shortage of good work stock. This shortage is likely to be acute during the time that colts foaled this year and next, and even young horses purchased now, are still in active service.

To prevent a shortage of good farm work stock a few years hence there might well be a somewhat larger number of mares bred in 1925 than in 1924 on farms where there are good mares that can be bred to good stallions or jacks.

On January 1, 1925, the number of horses and mules on farms in the United States was about 91 per cent of the number on farms in 1920. During this time colt production fell off decidedly, indicating that a large part of the decrease was in the number of young animals. Reports from 32 States show that in 1920 the number of colts foaled per 1,000 head of all horses and mules on farms at the end of the year was about 92 per cent of the number foaled in 1919; in 1921, 80 per cent; in 1922, 67 per cent; in 1923, 53 per cent; and in 1924, only 50 per cent. In 1924 the general downward tendency to colt production was checked decidedly, indicating that farmers in some areas are beginning to realize a need for younger horses to replace the older ones now in use.

By the time the present supply is so short as to cause an upward change in horse prices there is likely to be a considerable shortage of young animals. Any attempt to overcome this shortage at a late date would accentuate the shortage of work stock because large numbers of mares would be bred and could not then do a full year's work.

* While the primary reason for the decline in the price of horses, which began in 1911, was overproduction, undoubtedly this decline was accentuated because of the increasing use of trucks, automobiles, and tractors. Also, it is believed that there has been a general let-up in breeding for high-grade animals, and that at present a relatively large proportion of farm horses and mules are not only old but of an inferior quality.

POULTRY

The outlook of the poultry industry during 1925 from the standpoint of market egg prices is favorable, while from the standpoint of immediate market poultry prices it is not as encouraging. It seems probable that higher egg prices will prevail during the season of flush production this year than last. With an abnormally large stock of dressed poultry in storage it seems probable that lower prices on market poultry may prevail for at least the first half of the year. However, higher prices for other meats should have a strengthening effect upon poultry prices during the latter part of 1925 and the early months of 1926, which, coupled with probable reduced feed costs, should make that period a more profitable one.

The laying stock of chickens now on farms must produce the egg crop of the coming spring and summer and its output can be supplemented toward the close of the year only to a limited extent by the pullets hatched in 1925. Egg receipts at the principal markets during 1924 were decidedly below 1923. This decrease in receipts persisted through the fall and winter to the end of January. With a 9 per cent decrease in the number of poultry on farms on January 1, 1925, compared with a year ago, there is reason to suppose that the egg crop of this year will not exceed that of the last year.

The storage-egg business last year was very profitable. Storage-egg stocks, both shell and frozen, at the beginning of this year were well below those on January 1, 1924, and slightly below the five-year average. These facts, together with present good prices and an indicated crop of moderate size should result in a higher price level during the storage season and a favorable price level during the remainder of the year.

The present poultry disease epidemic complicates the situation to some extent. If the epidemic is controlled in the near future, as seems probable, it will have little effect upon either the egg or poultry crop of 1925.

Present high feed costs on commercial egg farms and the shortage of corn which exists in sections of the Middle West may also affect egg production unfavorably owing to a less liberal feeding policy.

The immediate outlook for poultry is less favorable. The disease epidemic has seriously interfered with the movement to market live poultry and has resulted in a decreased demand for both live and dressed poultry. As a result, prices paid to producers have declined materially in many sections, while the stocks of dressed poultry in storage have mounted rapidly, reaching a total on January 1, 1925, of over 133,500,000 pounds, the largest holdings ever recorded.

The consumption of poultry must increase somewhat in order to move these stocks out of storage. To effect this increase in consumption, lower prices appear inevitable, unless meat prices in general increase, thus making poultry relatively more economical as food.

OATS

Oats production in 1924 was slightly in excess of domestic requirements, and with no increase probable in domestic consumption during the next crop year, any increase in the oats acreage in 1925 does not seem advisable.

Exports from the 1924 crop totaled only about 4,000,000 bushels to January 1, 1925, with no indications at this time of any material improvement in the export demand. Without an important export outlet the oats crop must be utilized largely on the farms.

Scarcity and high price of corn this year is no doubt increasing the use of oats as feed for horses and for dairy cattle, sheep, and young stock; but there are nearly 3,500,000 fewer horses and mules on farms than five years ago, while the number of other livestock on farms has also been slightly decreased.

Receipts at the principal markets for the crop year to date have been about 24 per cent larger than for the corresponding period during the past two years and commercial stocks have reached nearly 75,000,000 bushels, the largest amount on record.

The large supply of oats is causing prices of this grain to lag behind the prices of other grains. Prices are slightly higher than last year, but the advance has been caused almost entirely by the high corn prices. Had the corn crop equaled the five-year average it is probable that the 1924 crop of oats would have sold below the 1923 prices.

BARLEY

Barley prices are at relatively high levels because of a sharp decrease in the world's production and the high price of other feed grains, but the general situation suggests that last year's acreage was sufficient under normal conditions to produce sufficient barley for domestic requirements and for the limited export demand for malting barley.

European production was materially smaller than normal in 1924, and the quality of the crop was damaged somewhat by rain. This increased the export demand in the United States. A larger percentage than normal of the current year's exports has been drawn from the North Central States because of the relatively larger crop in these States and the small crops on the Pacific coast.

During the past five years market receipts have been less than half as large as formerly, notwithstanding that production has been maintained, which indicates increased farm feeding, but it is probable that with the sharp reduction in hog production the feeding demand may be materially smaller next year unless there should be a small crop of feed grains.

In those sections where corn is short and feed grains will be urgently needed early in the season sufficient barley to meet these needs might be very advantageous, but an analysis of the general situation suggests that the 1924 acreage in the United States except on the Pacific coast should produce as much as will be needed for the domestic feeding demand.

On the Pacific coast acreage should probably be brought back to that of 1923 as a fairly steady demand prevails for barley in that territory.

HAY

The relatively lower level of timothy hay prices at this time compared with last year suggests that the production of market hay should be more closely adjusted to the decreasing demand. Dairy hay has held firm, particularly alfalfa, and a general survey of the situation indicates that production might be increased profitably where the local supply is not equal to the consumption.

With the record crop in 1924, hay prices with the exception of those for alfalfa, declined close to the level of the heavy 1922 crop. Even at the reduced prices offerings were ample for market needs and it was apparent that country holdings were large so that any advance in prices would call out increased shipments.

The 76,034,000 acres of hay harvested in 1924 represented an increase of 0.2 per cent over the 1923 acreage while the yield of 1.44 tons per acre was only slightly larger than the 1923 production of 1.41 tons which equalled the 10-year average. Given normal yields it appears that this acreage is sufficient for balanced production.

The tendency is toward a greater degree of self-sufficiency in forage production as evidenced by an increasing acreage of tame hay in many of the Southern States and by a greater acreage of alfalfa in the North Central States. Market reports indicate that some few territories which formerly purchased alfalfa now have a small surplus for shipment. It is obvious that unless the total production is to be increased this increase in consuming territory must be balanced by a corresponding decrease in the surplus-producing sections. High freight rates may make it inadvisable to attempt to produce for more than local needs in territories remote from market.

FEEDSTUFFS AND FEED CROPS

Supply of feedstuffs and forage, including grains, high protein concentrates, and manufactured feeds is apparently sufficient until the new feed crops become available, and the price trend based on approximately normal conditions is more likely to work downward than upward.

The 1924 hay crop was the largest on record. A large part of the increase was in timothy territory and timothy prices will probably remain below last year. The supply of alfalfa, clover, and other legumes appears to be adequate at practically last year's prices until the new crop is available.

It seems probable that the consuming demand for feed grains for this period will not equal that of 1924. The use of feed grains, which depends largely upon the number of domestic animals available to consume such feedstuffs is considerably influenced by available supplies of high protein concentrates. A substantial decrease in the number of hogs is assured. The number of beef cattle has also decreased materially, while there has been only a slight increase in the number of sheep and dairy animals. As feed grains are at present quoted relatively higher in most sections than are the high protein concentrates the increased use of commercial feeds will lead to a corresponding decrease in the amount of grains fed. Furthermore, it is likely that the demand for prepared feeds, and feed grains from the poultry trade will be less than it was during 1924 owing to a less liberal feeding policy and smaller numbers of poultry on farms.

The supply of barley is limited and prices have advanced because of an active export demand and the high price of corn. Less barley is available for feed than a year ago, and the supply will no doubt be largely consumed before the new crop is available.

Despite the very large decrease, approximately 600,000,000 bushels, in the corn crop and the apparently unsatisfactory condition of pastures in Western and Southwestern States, these factors will be largely offset by the availability of other grains and feeds and by the increase in the last hay crop.

POTATOES

The present price of potatoes is likely to result in too small an acreage of potatoes this year. Many growers, including even some who are producing potatoes at a low cost per bushel, have been unduly discouraged by the ruinous prices which were paid in many localities for much of the 1924 crop. Such growers should bear in mind that much less than the usual acreage of potatoes was grown in 1924, and that the exceptionally heavy production was largely the result of remarkably favorable weather. On the other hand, the planting of such a large acreage of potatoes as that of 1922 would be a great mistake, for although a yield per acre as heavy as that of 1924 may not be secured again for a number of years, there is reason to expect future yields to average substantially higher than they have in the past. This means that the needs of the country can be met with fewer acres of potatoes per thousand of population. In the South, however, the increasing yield per acre is less of a problem this season than is the prospect of competing with the low-priced potatoes now on the Northern markets.

Potato growing is in a state of transition. A steadily increasing proportion of the potatoes raised for sale is being produced by those growers who have an acreage large enough to justify the use of improved machinery for cultivating, spraying, digging, and grading the crop. A growing proportion of the acreage is being planted in those sections where the average yield is high. A greater emphasis than formerly is being placed on seed improvement, seed treatment, and the use of fertilizers. The better quality of product, the increased yields secured and the use of improved equipment are together increasing the number of bushels of marketable potatoes which the larger growers can produce with a given amount of labor. The more efficient growers are reducing the cost of production. In the long run this will reduce the profits of those growers who raise potatoes for sale in quantities too small to justify the purchase of efficient equipment.

An example of the changes taking place in the method of growing potatoes is the fact that the quantity of seed potatoes certified by public agencies as suitable for seed has increased to nearly six times the quantity certified three years ago. There is now sufficient certified seed to plant nearly a fifth of the entire acreage. In addition, a very large quantity of seed potatoes grown from stock certified in 1923 is available. This represents an advance in the average quality of potatoes used for seed which has no parallel in the case of any other important crop in this country.

In 1924 less than the usual number of acres were planted to potatoes, the acreage being 4 per cent less than in 1923 and 15 per cent below the very large acreage grown in 1922. If the yield per acre in 1924 had been only 99 bushels, or the same as the average of the previous 10 years (1914-1923), the production would have been an average of only 3.2 bushels per person in the United States, or 15 per cent less than the 20-year average per capita production. The yield in 1924 was, however, 124.2 bushels per acre, 25 bushels per acre above the previous 10-year average and 11 bushels per acre above the largest yield previously secured in the United States as a whole.

During the last 30 years the average yield of potatoes in the United States has been increasing at an average rate of nearly a bushel per acre each year. Additional allowance must now be made for the effect on yields of the great improvement in the average quality of the seed potatoes used. It therefore appears that if in 1925 weather conditions are about as favorable to potatoes as they are in an average year, the yield per acre may reach, say 108 or 110 bushels per acre, instead of 100.6 bushels, the average of the last 10 years, including the heavy yield of 1924. If the higher of these yields is secured this season an acreage even 5 per cent larger than the reduced acreage of 1924 would produce the usual quantity of potatoes per capita.

There are many local variations in the potato outlook. During the war when the prices of farm products were high in proportion to freight rates, potato production was greatly stimulated in some States remote from the principal markets. The acreage of potatoes in the five States of Minnesota, North Dakota, South Dakota, Colorado, and Idaho increased from less than 500,000 acres in 1914 to over 1,000,000 acres in 1922. Since then overproduction and low prices, combined with higher freight rates, have caused the acreage in these States to decline. In 1924 only 700,000 acres were grown and yet the price there has been so low that millions of bushels have been fed to livestock and in the Dakotas a considerable acreage was left undug. Growers

in these States should watch closely the acreage planted elsewhere because in recent years of overproduction they have been the ones who suffered the most.

SWEET POTATOES

Present high prices for sweet potatoes should not influence growers to plant a largely increased acreage of this crop this year. Present prices are due more to low yields in 1924 than to short acreage. An increase of more than 10 per cent over 1924 acreage with an average yield is likely to produce more than can be marketed profitably.

The trend of per capita production of sweet potatoes has been markedly upward. It has increased from the pre-war average of 0.6 bushels to an average of 0.94 bushels for the 5-year period previous to 1924. In 1922, when the crop averaged slightly more than 1 bushel per person for the entire population of the United States, the high point of profitable production per capita was passed, for prices dropped so low that the acreage the next year was sharply reduced. On the other hand, the extent to which the demand for this crop is increasing is shown by the fact that in a number of the Southern States the price for the 1924 crop was the highest on record, notwithstanding the fact that the per capita production in the United States was nearly 8 per cent above the pre-war average. Probably under present conditions production can be increased to about 0.95 bushel per capita before sweet potatoes become less profitable, on the average, than competing crops.

The increased consumption of sweet potatoes is due partially to the fact that the consuming season has been lengthened and losses in storage reduced by the development of improved methods of curing and storing the crop, and partially, as with vegetables generally, to the higher standard of living of a large part of the population. The ideal for growers as a whole should be, therefore, to maintain such a moderate and uniform production from season to season that prices to growers will be reasonably profitable and yet the price to consumers sufficiently low to maintain and, if possible, to increase further the per capita consumption of this crop.

Much of the increase in production during the last 10 years has been in the southern districts, where the bulk of the crop is consumed locally and where farmers have found it desirable to substitute sweet potatoes on some of their former cotton acreage. The increase has been shared by the commercial sections which ship to northern markets.

There are some local variations in the outlook for sweet potatoes. In the Cotton Belt, where moist-fleshed varieties, such as the Nancy Hall, are grown and preferred, the price has been particularly high this season and it is there that an excessive acreage in 1925 is most to be feared. In the commercial sweet potato region that extends from the Eastern Shore of Virginia into New Jersey, the northern or Jersey type of sweet potato is grown for shipment to northern markets. This region has less than 10 per cent of the total acreage of sweet potatoes in the United States but ships about two-thirds of those that move by rail. Growers in this section raised the usual number of acres of sweet potatoes in 1924, had a fair yield and secured high prices. In planning their 1925 acreage they should not overlook the fact that the present high prices are, in part, the result of the very short crop of sweet potatoes in the States further South.

PEANUTS

Any substantial increase in peanut acreage in 1925 over that of last year may result in lower prices. It would appear that the 1925 acreages of both the large-podded Virginia type and of the small-podded Spanish and Runner types should not be appreciably increased but may remain fairly safely at the present levels. However, the present price level for Spanish and Runner types is not as satisfactory as for the Virginia type and there is danger of further price reductions if acreage is increased.

Although the recent trend of production of the Spanish and Runner types which are produced principally in Georgia, Alabama, Florida, and South Carolina, and to a lesser extent in Texas, Oklahoma, and Arkansas, has been downward, the 1924 crop was 16 per cent larger than that of the preceding year. This was due to an increase in both acreage and yield per acre. Quality was poorer, however, and a larger proportion than normal has been sold to oil mills.

Imports do not materially affect the situation with regard to these varieties, as imported peanuts are almost entirely of the Virginia type. There is no reason to suppose that domestic demand will increase to any great extent during the next year and therefore any substantial increase in production will under normal conditions result in considerably lower prices. Growers generally agree that present prices can not be lowered appreciably without wiping out whatever margin of profit now exists.

Consumption of Virginia-type peanuts for the crop year ending November 1, 1923, was approximately 350,000,000 pounds, including about 75,000,000 pounds imported from the Orient, and for the following year consumption reached a total of 390,000,000 pounds, including imports of about 80,000,000 pounds. (Practically all imported peanuts are shelled, but for purposes of comparison these figures are on an unshelled basis.) With estimated production for the current season of about 238,000,000 pounds and with practically no carry over, it will require over 100,000,000 pounds of imported peanuts (unshelled basis) to take care of domestic requirements.

These figures show that the total domestic demand for Virginia type is far in excess of domestic production and would seem to indicate that the production in this country can be increased considerably at the expense of imports. But it must be remembered that recent imports from the Orient have been confined chiefly to large-size shelled Virginia type stock and this is the only class of peanuts for which there is a demand appreciably in excess of domestic production. An increase in production of the classes of peanuts now being grown would probably serve only to increase unduly the supply of the smaller-size shelled peanuts without supplying the large sizes which are now being imported. If foreign competition is to be met there must be greater attention to seed selection with a view to producing large-sized peanuts.

BEANS

A bean crop in 1925 in excess of domestic needs would tend to put the price of the entire crop on an export basis, thus losing to the grower the benefit of the tariff of \$1.05 a bushel. If the usual acreage is planted in California in 1925, and if other States equal the 1924 acreage, a crop 2,000,000 bushels in excess of domestic needs may be produced. No increase in acreage seems desirable.

If an average yield had been secured, the acreage harvested in the commercial bean States in 1924 would have produced about 16,000,000 bushels, probably more than ample for our needs. Should California, where the acreage was cut in half last year owing to drought, plant her usual acreage this year and other States plant the same as last year the acreage would be increased about 10 per cent over 1924 and an average season would give a crop of over 17,000,000 bushels. The consumption in recent years appears to be something over 15,000,000 bushels compared with about 12,000,000 bushels before the war.

Imports of 2,000,000 bushels were required to supplement our crop of 13,000,000 bushels in 1922. With a production of 16,000,000 bushels in 1923 on an acreage smaller than in 1924 there were practically no net imports. The drought in 1924 cut the home crop to 13,000,000 bushels and imports are again heavy.

In sections where potatoes and beans compete, commercial growers who may be tempted to shift from potatoes to beans should remember that the present relative prices for these two crops are due to the lowest yield of beans since 1917 and the highest yield of potatoes of record.

The bean crop as a whole is made up of a number of very distinct classes and the price of a particular class may react more strongly to the supply of that class than to the supply of the crop as a whole. Adjustment of the acreage by varieties in adapted sections well within the limits of the 1924 total acreage would have a stabilizing effect on the bean industry as a whole.

Full data on production and price of beans by varieties are not available, but the information at hand indicates the following situation as to the different classes:

The production of the small white pea bean of Michigan and New York was about 10 per cent less in 1924 than in 1923, and only slightly above pre-war production. It is a staple variety, making up about 40 per cent of the total present bean crop, but its production has not increased in late years as rapidly as that of some other varieties which the market absorbs at higher prices. The facts of the general bean situation have particular application

to growers of this variety and do not appear to warrant any increase in the acreage.

The greatly increased production of Great Northerns, chiefly in Idaho and Montana, seems to have been easily absorbed, and this class is finding a more ready market, at prices equal to or higher than those prevailing for pea beans. The production in 1924 reached about 1,500,000 bushels.

The production of red kidneys has increased about 30 per cent in two years. Prices in 1923 fell somewhat, and the present price increase no doubt reflects in part the general shortage, so that some caution would appear desirable in making further increases in the acreage of this type.

The unusually low yields per acre of pintos on the greatly increased acreage in Colorado and New Mexico prevented the supply from exceeding current requirements. The low California production of pinks and other classes of colored beans caused by drought in 1924 contributed to the present favorable price position of all colored beans, including pintos.

COMMERCIAL VEGETABLES

During 1925 there probably will be a sustained or slightly increased demand for such vegetables as lettuce, celery, spinach, and cucumbers but there is little prospect for any increase in the demand for cabbage and onions and for such staple canning crops as corn and tomatoes. There are indications that during recent years the production of vegetables has been increasing rather more rapidly than the demand and the tendency seems to be toward generally lower prices with increased competition between the various commercial producing sections. As vegetable crops are now being produced in many areas poorly adapted to their cultivation and poorly situated with respect to market, some readjustment of acreages to meet this situation is desirable.

Unusual weather conditions east of the Rocky Mountains in 1924 retarded shipments in the earlier sections. This interference with the normal marketing period brought some of these vegetables into keen competition with those from later districts and gave others exceptional markets. Growers should therefore avoid being influenced too much by profits or losses last season.

The acreage devoted to cabbage, onions, and other vegetables that have long been in general use has been adequate and any increase in plantings over those of last year should be made with caution.

The increased availability and use of other fresh vegetables throughout the year tends to restrict further increase in per capita consumption of these staple crops.

FRUIT

Present conditions indicate that increased plantings of citrus fruits and western grapes should be discouraged and that any plantings of apples, peaches, and pears, and other tree fruits should be confined to the best commercial sections and to the gradual replacement of old farm orchards in localities where a good local market seems assured.

Aside from the usual wide fluctuation in the annual production of all fruits, because of weather conditions, total production has taken a sharp upward trend the past few years, principally because of increases in the production of peaches in the Southern States, especially in Georgia and North Carolina. Increased production of pears has also contributed to this situation. Apple production has remained on a fairly constant level, although there has been some substitution of good commercial varieties for poorer ones in the older orchards and the proportion of the crop produced in the best commercial sections and in orchards large enough to justify the use of modern spraying equipment has increased.

Apples.—The immediate outlook for the portion of the 1924 apple crop remaining unsold is bright. The lighter crop produced in 1924 is reflected in the cold-storage holdings of apples on January 1, 1925, which were approximately 30 per cent below those on January 1, 1924. This lighter supply, coupled with a satisfactory economic situation at home and abroad, has created a good demand and caused a recent strengthening of the market, and it appears that present prices will be maintained or increased slightly during the remainder of the season.

As a long-time outlook a continuance of the practice of substituting the best commercial varieties for poorer varieties in the older orchards and the elimination of orchards planted on unfavorable sites seems advisable. In certain sections where growing conditions are especially favorable and where there is

a suitable market outlet it is probable that small net increases in plantings may be justified, especially where direct marketing in towns of a few thousand population not now well supplied with high-grade fruit is possible.

Peaches.—The situation with regard to peaches is somewhat the same as for apples. In general such new plantings as are made should be confined to the renewals of older orchards and only standard varieties should be used. Replacement in the Southern States, at least in the southeastern group, should generally be discontinued for the next year or two, as it is doubtful whether a full crop produced from present plantings can be marketed at prices profitable to growers. Any replantings that may be made in that section should be confined to areas and land especially well-suited to peach production and early-maturing varieties should be avoided for the most part.

Growers in northern sections who contemplate new plantings of early maturing varieties should study carefully the possible competition of the more popular later varieties in southern districts. In many sections there is a conspicuous need of attention to standardization of pack and grade in the peach industry.

Grapes.—Grape production in California is increasing rapidly as the result of heavy plantings of raisin grapes and to a lesser extent of table and juice grapes, during the past few years. Production will continue upward for several years even without additional plantings, as many new plantings have not yet come into bearing. The yield of the 1924 crop in California was reduced by the drought and the full effect of average production from the increased plantings in that State has not yet been felt upon the market.

This increasingly heavy production in sight in California during the next few years gives no promise of anything except a continuation of the generally unsatisfactory prices which have prevailed there for the past few years. In view of this situation it is believed that no new plantings should be undertaken at present.

Prices in recent years generally have been more satisfactory to eastern grape producers than to those in California, but the effect of heavy supplies from California can not be ignored and it is probable that the general price level for grapes will be lower during the next few years. This fact should be considered by eastern growers before any new plantings are attempted, although it is believed that in particularly favored eastern sections some increase in acreage may profitably be undertaken.

Citrus fruits.—Unless per capita consumption of citrus fruits increases considerably and foreign markets are developed rapidly the citrus-fruit industry is confronted with an exceedingly difficult problem of readjustment. With a few exceptions such as summer oranges, and possibly some replacement plantings, no new acreage will be needed to supply the market for the next decade, except in the event of a severe freeze.

Production of all citrus fruit increased from 20,000,000 boxes in 1909 to around 40,000,000 in 1923. If all the young nonbearing groves in existence at present are given sufficient care and attention to bring them into bearing and if new and old trees continue to produce at the present rate there will be a production of at least 70,000,000 boxes by 1930.

Oranges show the greatest prospective increase. New plantings of oranges during the past few years in California have been sufficient only to maintain the present acreage of bearing trees, but more than 7,000,000 trees were planted in Florida in the five years, 1919-1924. There are large acreages of young grapefruit in both Florida and Texas. New plantings of grapefruit in Florida have been at the rate of from 250,000 to 500,000 trees per year since 1919 and a total of more than a million have been planted in Texas during this time.

In recent years there has been a downward trend in prices especially of grapefruit and of oranges that are marketed during the winter season. Auction prices in New York for Florida oranges of Golden grade averaged \$6.07 per box during the season of 1919-20 and only \$3.27 in 1923-24. Prices of Florida grapefruit averaged \$3.72 per box in 1919-20 and \$4.55 in 1920-21 but only \$2.98 per box in 1923-24. The auction prices for a group of representative brands of California navel oranges averaged \$5.70 in 1919-20 and only \$3.67 in 1923-24. Prices for the 1924-25 season have not varied widely from the prices last year.

There is doubtless a possibility of increasing the number of car-lot markets but it must be remembered that through redistribution from central markets citrus fruit now reaches practically every market in the country and the problem, so far as domestic trade is concerned, is almost entirely one of stimulating the demand and increasing the consumption in the territory now being

served. Lemons and oranges are sent to market every month in the year but the bulk of oranges must be marketed in the period from November to June and practically all of the grapefruit comes to market during this period. The problem thus becomes one of stimulating demand, particularly during the winter and spring months.

It is to be expected that the growth of the population of the country will result in a corresponding growth in the demand for citrus fruits, but at present our population seems to be increasing at the rate of only 1 to 2 per cent a year. Thus our population in 1930 will very probably not be more than 10 per cent greater than it is at present, while the prospects are that citrus production will be at a rate of more than 50 per cent greater than at present.

To some extent the consumption of citrus fruits can be increased through the use of by-products. At the present time a considerable amount of fruit is used for such purposes but the by-products industry can never be expected to take more than a relatively small amount of the fruit.

The United States may look for increased exports in her citrus fruits. In 1924 the total oranges exported amounted to over 2,500,000 boxes. This is only a small amount of the total production but the potential demand is of considerable importance.

Most of this fruit went to Canada. The exports of citrus fruits to European countries is at present difficult because of competition with producing areas in the Mediterranean district, Palestine, and South Africa. Transportation, especially from the Mediterranean countries, is at a cost much lower than from the United States to the various consuming centers in northern European markets.

The immediate foreign situation seems to favor an improvement in the market for lemons. Production of lemons in Italy, the chief competitor of the United States in domestic markets as well as in Canada, appears to be declining. There also seems to be some prospect for an improvement in European economic conditions which will increase the European demand for lemons and afford some relief to the United States by taking more Italian lemons off the domestic and Canadian markets. A relief from competition in these markets would turn over to American producers a market which now takes about a million and a half boxes.

The problem of the foreign market for grapefruit is primarily that of creating a demand. In increasing sales in Europe it is necessary both to develop the European taste for grapefruit and to find economical methods of marketing which make it possible to sell at relatively low prices.

TOBACCO

The price outlook for most types of tobacco is better now than a year ago. While stocks held by dealers and merchants on October 1, 1924, were 163,000,000 pounds larger than a year previous, the 1924 crop was 272,000,000 pounds less, a net decrease of 109,000,000 pounds, or 3 per cent, in the total supplies as of October 1, 1924. The current price per pound for most types is as good or better than one year ago, and there is no apparent indication of a slackening of domestic or foreign demand for tobacco.

Domestic manufacture of cigarettes in 1924 has been estimated at 71,000,000,000, compared with 65,000,000,000 in 1923; manufacture of smoking, plug, and snuff in 1924 was much greater than the previous year. Exports in 1924 were 547,000,000 pounds, or 15 per cent greater than in the previous year.

Cigarette types.—The situation as to the different cigarette types differs radically. Burley, which is important in cigarette manufacture, is at present almost negligible in exports. The production of this type in 1923 was extremely heavy and decreased only moderately in 1924. The accumulated holdings of burley of 428,000,000 pounds on October 1, 1924, were 25 per cent larger than in 1923, so that its market situation is the least satisfactory of the cigarette types. The increasing consumption of cigarettes, and steps recently taken to stimulate foreign sales, may reduce stocks of this tobacco during 1925; but the general situation is not such as to warrant an increase in the acreage planted to burley in 1925.

The price per pound to the growers will probably not vary much from last year. The crop in the main producing sections is somewhat shorter than last year owing to drought, but the crop has more body.

Flue-cured tobacco is in an unusually strong position, due not only to the fact that it shares in the increasing manufacture of cigarettes and is one of the important export types, but also to the reduced acreage and low average yield

in 1924. Total supplies on October 1, 1924, were 10 per cent less than a year previous. Exports during 1924 were 35 per cent greater than in 1923. Should exports in 1925 equal those of 1924, there will remain from the latest crop to supply the domestic needs less than 176,000,000 pounds, compared with 327,000,000 pounds of the 1923 crop.

The heaviest importers of this type are England, China, and Germany, in which countries there is now no indication of a slackening demand. It is significant also that in other countries, such as Canada, British India, Japan, and Australia, importations are increasing.

The price per pound to growers for the 1924 crop is several cents per pound higher than a year ago.

Maryland and eastern Ohio export.—Demand for Maryland and eastern Ohio export type of tobacco in the last few years has been strengthened because the domestic demand for use in cigarette blends now competes with the long-established export business for this tobacco.

Dark tobacco.—The statistical position of this group taken as a whole, is stronger than that of other groups. The total supplies at the close of 1924 show a reduction of 56,000,000 pounds, or 9 per cent from the high point of 1923, whereas the exports in 1924 showed an increase of about 10 per cent over 1923. Should exports in 1925 equal those of last year, there will remain from the 1924 crop for domestic consumption about 72,000,000 pounds compared with 149,000,000 pounds of the 1923 crop, and 155,000,000 pounds of the 1922 crop. The bulk of the exports are provided by the Clarksville and Hopkinsville, the Mayfield and Paducah and Virginia Dark. The production of the last-named type has declined moderately in the last year, that of the other two types has fallen off about 18 per cent. The remaining dark tobacco types have decreased in production about 31 per cent in 1924 compared with 1923. There is nothing to indicate that foreign demand will not continue good for dark types, although it is to be noted that production of dark tobacco in European countries is on an upward trend.

The general outlook for dark tobacco does not suggest material changes from last year's plantings, but it does offer hopes for improved prices for the 1924 crop, and a still further reduction in the holdings on October 1, 1925.

Cigar Types.—The outlook for cigar leaf suitable for wrappers, binders, and fillers of next year's crop is strengthened by decreased production and the unusually large percentage of the last crop that has been damaged and will be used for stemming. Of the crop produced, that in Wisconsin is the poorest in quality reported in many years. Considerable hail damage was done to the Connecticut Valley crop.

SUGAR

The 14 per cent increase in world sugar production for the season 1924-25 over the previous record production in 1923-24 caused a distinct decline in world prices. Since cane sugar production, which furnishes about 80 per cent of the sugar supply of the United States, does not respond quickly to price changes, the production of 1925-26 is also likely to be large. With a probability of a large carry over to cover the demands of the early part of the season of 1925-26, the chances of higher prices for sugar and sugar beets during the coming season seem remote.

World production of sugar, both beet and cane, for the season 1924-25 is now estimated at 25,134,000 short tons, as compared with the previous record production of 22,054,000 short tons in 1923-24. Cane sugar production is estimated at 16,455,000 short tons, an increase of 5.8 per cent over last year and beet sugar at 8,679,000 short tons, an increase of 33.5 per cent over last year. The largest increases are in the European beet sugar areas. All of the leading cane sugar surplus areas outside of the United States show material increases in production over last year.

Sugar production in continental United States amounted to about 1,200,000 short tons in 1924-25, as compared with 1,043,000 short tons in 1923-24; Hawaii will probably produce about the same as last year; Porto Rico shows an increase of about 75,000 short tons; and reports from the Philippines indicate a large increase in production, although definite figures are not available.

Cuban sugar production in 1924-25 is estimated at more than 5,200,000 short tons, which is an increase of 600,000 short tons over the crop of the previous year, and 1,000,000 short tons over the crop of 1922-23. As far as dutiable sugar is concerned the Cuban crop, enjoying tariff preference, dominates the sugar situation in the United States.

European countries outside of Russia and Poland have practically reached pre-war production, and with lower prices this year a further general increase in production next year would seem unlikely. Cane sugar producing countries, which increased acreage during the war period to supply the deficit caused by the loss of the beet-sugar areas of Europe, have not increased production as rapidly in the last few years, and present prices are not likely to stimulate further plantings. Immediate reduction in sugar-cane acreage, however, is unlikely because of the character of cane cultivation in tropical countries.

Until the present season, world consumption of sugar has kept pace with the rapid increase in world production, and at the beginning of the season 1924-25 stocks were low in Cuba, and in the leading European countries stocks on September 1, 1924, were only about 600,000 short tons as compared with 770,000 short tons on the same date both in 1922 and 1923. It is expected that, with lower prices prevailing, there will be a further increase in consumption but hardly sufficient to absorb the increase of 14 per cent in the supply. A part of this supply therefore will doubtless go to increase stocks and so enter into competition with the crop of 1925-26.

RICE

During recent years the United States has exported about 50 per cent of its rice crop, and the price of rice in this country has been determined chiefly by the production in the foreign countries with which our exported rice competes. The world's rice crop in 1924 was somewhat larger than the crop of 1923, but not up to the record crop of 1922. The acreage in the United States was slightly less in 1924 than in the preceding year, and considerably less than in 1922. The world acreage, however, has shown but a slight decrease below 1922, and has even increased slightly over 1923.

The tendency seems to be to decrease the rice acreage in this country and to increase it in foreign countries. The prevailing price of rice is about 25 per cent higher than the price a year ago, which may lead to a further increase in the acreage in foreign countries, and make inadvisable any considerable increase in the production of the United States.

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THE AGRICULTURAL OUTLOOK FOR 1926

Prepared by the Staff of the Bureau of Agricultural Economics

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PURPOSE OF THE OUTLOOK REPORT

This outlook report is designed to provide farmers with facts and interpretation of the probable future trends of demand and supply for agricultural products to aid them in planning intelligently for production and marketing. It presents facts on world-wide and national conditions for farmers to consider along with local conditions.

The report is based upon all available information bearing on agricultural conditions both domestic and foreign. Suggestions for changes in acreage are made with due regard to the fact that variations in yield caused by the season's weather conditions can not be known in advance. The report merely presents what a study of past seasons and experience has shown to be the most likely result from the present situation in major lines of production.

This report necessarily presents the national point of view and should be carefully considered by producers in every region to determine whether the general suggestions apply to conditions in that region to a greater or lesser extent. The end in view is to promote orderly production and to provide farmers with information indicating what market conditions will prevail at the time next season's product will be ready for market. This should help to avoid periods of serious overproduction and underproduction of the different commodities and help to make the returns from farming more satisfactory.

This is the fourth annual outlook report that has been issued by the Department of Agriculture and it has been demonstrated that general trends of the markets for agricultural products can be anticipated with a very helpful degree of accuracy. The facts upon which these reports are based are becoming more comprehensive and reliable as the agencies for collecting such information have been extended and improved.

The readjustment of agriculture in the major lines of production has proceeded steadily since the war, and as a whole no radical changes from the general trend are recommended in the following report. Through the efforts of leading farmers, cooperative associations, and agricultural extension workers, it is believed that the future may be safeguarded by maintaining production in its proper relation to changing trends in consumption. Close study should be given to these facts and suggestions by local leaders that they may

adapt the suggestions properly to the requirements of each locality and to the needs of individual farmers.

In making plans for the year, each individual farmer must bear in mind not only the probable conditions of the market and the prices he may expect for his product, but also the possible lines of production in which he may safely engage considering the conditions under which he is farming and the characteristics of his own farm. Both the requirements for production and the probable returns from the product should be considered in making decisions as to what to produce and how much to produce.

In the preparation of this report the staff of the Bureau of Agricultural Economics has had the assistance of specialists from other bureaus of the department and from several of the State colleges of agriculture.

SUMMARY OF THE OUTLOOK

Agricultural production has been so readjusted that the farming industry as a whole is now in the best general position since 1920. An important feature of this readjustment has been the better general balance finally achieved in livestock production. Further readjustments would be desirable in the production of some crops. Farm products, taken all together, still stand at a disparity in exchange for industrial goods and services. Any general expansion in production at this time would tend to place agriculture in a less favorable economic position.

DOMESTIC DEMAND

There is little likelihood of a greater demand for farm products in 1926 than existed in 1925. During the first half of the year business activity will probably be maintained at the present prosperous level and factory and other wage earners will continue to constitute a satisfactory market for the balance of the 1925 crops yet to be marketed. For the period in which the 1926 crops will be harvested and marketed there are more facts pointing toward lower than toward greater demand.

Just as certain basic industries are now adjusting their future production schedules for a lower domestic demand during 1926-27, so should agriculture as a whole, in so far as it depends upon domestic demand, also plan its 1926 production for a market at best no stronger and probably somewhat less favorable than the present.

FOREIGN DEMAND

The present prospects in foreign markets are that the demand for most of the products of our farms in 1926 will be no better than for the products of 1925, if as good, unless the competing products of foreign countries should be reduced by a less favorable season. Although the purchasing power of consumers in most countries for the products which they will have to import may be as good or better than in the past year, recovering domestic production and the imposition of protective tariffs is reducing the demand in some countries for foreign products, and competition in all foreign markets probably will be at least as strong as last year.

AGRICULTURAL CREDIT

Although there has been a slight tightening in commercial interest rates during the last year, present conditions indicate that ample capital will be available for farming purposes in most regions at rates during 1926 about the same as in 1925.

FARM LABOR AND EQUIPMENT

During this spring and summer no material change in the supply of farm labor and no reduction in the level of farm wages below that of last year is to be anticipated.

The cost of farm equipment and upkeep will probably remain at the present comparatively stable level so long as industrial conditions and the purchasing power of farmers do not change materially.

WHEAT

With an increase of 4 per cent in the hard winter acreage planted last fall and the crop going into the winter in good condition, a production of this class of wheat somewhat larger than in 1925 seems probable. Therefore, if any acreage of spring wheat equal to last year is planted and average yields are obtained, there will be a surplus of hard wheats for export. Present indications are for another short crop of soft winter wheat in 1926. Although it is yet

too early to form an estimate of the 1926 world wheat production, a slightly smaller world crop outside of the United States may be expected. The areas of winter wheat in the countries already heard from are slightly smaller, and unusually high yields of 1925 are not likely to be repeated. World stocks at the beginning of the new crop year will probably not be large. From present indications it is reasonable to expect that the returns from spring wheat in 1926 will compare favorably with the returns that might be realized from other grains in the area adapted to spring wheat production, although there is not likely to be a continuation of the present unusually favorable situation which is due to the short crop in 1925.

FLAX

The unusually large flax crop which has just been harvested in Argentina will no doubt materially affect the world price during the next year. Because domestic production is much below domestic requirements the margin between the domestic price and the world price would not be materially changed by some increase in acreage.

RYE

Rye acreage in the United States for harvest in 1926 is practically back to the pre-war level but prices will be determined by the world crop. The trend of world production is upward and though the unusually high yields of 1925 are not likely to be repeated in 1926 the possibility of increased exports from Russia and a fairly large carryover in other countries does not offer much encouragement for material improvement in price.

OATS

If last year's oats acreage is maintained, relatively low prices for this grain are likely to continue unless yields are much reduced. Oats production in 1925 was about 20,000,000 bushels smaller than in 1924 in spite of a 5 per cent increase in acreage, but the larger carryover brought the supply for this season above last year's total and prices have worked to the lowest figures since 1921-22. The decreasing number of horses, both on farms and in cities, is especially important in this connection.

BARLEY

Both the export and domestic demand for barley next year seem likely to be less than in the last year. An acreage equal to that of last year with average yields would probably result in continued low prices. The export demand for high-grade malting barley from the Pacific coast may be expected to continue.

CORN

A corn acreage the same as in 1925 with average yields will be sufficient to meet feeding and commercial requirements as fully as in 1925. A yield slightly above average and an increase in acreage coincident with decreased feeding requirements for hogs and cattle were principally responsible for the low prices now prevailing. Although the low prices have stimulated the commercial uses for corn this outlet requires only a small part of the crop and the feeding demand should be given particular attention by corn growers.

COTTON

Costs of production of cotton will probably be about the same as in 1925 and growers would do well to proceed with care when planning their acreages for the present year. For the last two seasons the rate of world production of cotton has exceeded the rate of world consumption with the result that stocks have been increased. Although these stocks are not yet burdensome as a whole, further material increases might easily make them so. The conditions under which the new crop will be marketed are somewhat uncertain but there is no marked indication that the mill demand will exceed that of the present season.

BEEF CATTLE

Both the immediate and long-time outlook for the cattle industry now appear more favorable than in recent years. The number of steers is the lowest in many years, with present breeding stocks apparently large enough to supply as much beef as it will pay cattle producers to raise. A reasonably constant demand for beef is anticipated, and no prospect of early competition in our markets from foreign sources is in sight. The maintenance of high-quality breeding herds will place the cattlemen in a position to increase production as rapidly as demand justifies.

HOGS

The outlook for the swine industry throughout 1926 appears very favorable, with indications that hog prices will be maintained at high levels. The number of hogs in the areas of commercial production is the smallest since 1921 and for the entire country the smallest in many years. Stocks of pork and lard are the second smallest in 10 years and the present strong domestic demand for pork products seems likely to continue through most of the year.

DAIRY PRODUCTS

The dairy industry as a whole is in a relatively strong position. The number of dairy heifers on farms has been decreasing since 1922 and the number of milk cows on farms is slightly less than a year ago. Some slight increase in numbers of young stock during the next two years may be desirable. However, if the present trend in foreign production continues upward and unless consumption in Europe continues to increase, foreign competition in our markets will likely become more important.

SHEEP AND WOOL

Indications are that 1926 will be a good year for the sheep industry, though possibly not quite so favorable as 1925. More ewes have been bred. If favorable weather conditions prevail during lambing time slightly larger lamb production in 1926 will result. A gradual slackening in the demand for both lambs and wool in late 1926 and in 1927 seems possible. There could be a further increase, however, in lamb and wool production in some sections at a profit, as contrasted to alternative enterprises. But those who are planning to increase immediately their breeding flocks should consider the high initial investment now required and the probability of somewhat lower lamb prices in the future.

HORSES AND MULES

The present number of work animals is apparently ample to meet farmers' needs during 1926, although there has been a marked decrease in the number of colts foaled during the past six or seven years. Continued reduction will eventually result in an acute shortage of work animals. Individual farmers are advised to study carefully the type of power best suited to their own farms, and determine individual needs for horse and mule replacements 3 to 10 years from now.

POULTRY AND EGGS

The market for poultry, at least during the first six months of 1926, will probably be better than during the same period in 1925 when heavy storage stocks of dressed poultry had a depressing influence. Storage stocks this year are considerably below those of the same month of last year which may be expected to result in broader outlets for fresh-killed poultry. Present conditions indicate that the production of eggs will be somewhat larger and prices lower during the first half of the year 1926 than for the same period in 1925.

HAY

There appears to be no need for new seedings to increase present acreage so far as market hay is concerned, but farmers should not lose sight of the fact that low costs in livestock production are based upon abundant pasturage and hay supplies.

FEEDS

The cost of feedstuffs, including mill feeds and high protein concentrates, will probably not make any material advance during the first six months of 1926 should normal weather conditions prevail during the remainder of the winter and spring pasturage be available at the usual time.

POTATOES

Growers of very early potatoes who can market their product by the first week of June have an unusual opportunity this season, but there is danger that growers in the later potato States may be influenced by present prices and plant too heavily. An increase of 10 per cent in acreage with normal yields is about the limit that would prove profitable. Seed is now so high that those who expect to plant a large acreage should keep a close watch on the acreage being planted elsewhere.

SWEET POTATOES

Growers of sweet potatoes should not permit the satisfactory prices during the last two seasons to lead them into the mistake of planting an excessive

acreage this spring. It must be remembered that exceptionally low yields rather than reduced acreage caused the low production which resulted in high prices.

CABBAGE

Producers of early cabbage should be in a favorable market position, at least during the opening months of the season. There is danger that present high prices will induce growers in the late cabbage States to increase their acreage too much.

ONIONS

The total acreage of onions in late States can not be increased appreciably without the probability of a crop too large to be marketed at satisfactory prices. Acreage in Indiana and Ohio was sharply cut last year by freezing. If growers in these two States plant the same acreage this year as they did originally in 1925, and if those in other producing States do likewise, average yields will bring the total production about 5 per cent above that of 1922, a year of extremely low prices.

BEANS

The production of cleaned beans in 1925 apparently overran domestic requirements by about 2,500,000 bushels. A material reduction in the acreage of white beans and some reduction in that of pintos appears advisable.

CITRUS FRUITS

Barring freezes, a very material increase in production of citrus fruit is to be expected from trees already planted and further planting should not be made without serious consideration. In Florida only about 58 per cent of the orange trees and about 78 per cent of the grapefruit trees have yet reached bearing age and not much over half of the bearing trees have reached full production. Heavy plantings of grapefruit trees have recently been made in Texas. Plantings of oranges in California are about sufficient to maintain the present acreage.

APPLES

As a long-time outlook, apple growers appear to have turned the corner, and with the decrease in bearing trees can reasonably expect marketing conditions to improve gradually. So far as commercial production is concerned, the decrease in the number of bearing trees has been more than offset by increased yields in the commercial sections. However, in the Northwest the point of maximum production seems to have been nearly reached and in the commercial sections of the East the rate of increase will be gradual. Conditions for the unmarketed portion of the 1925 crop do not seem likely to improve during the remainder of the season.

PEACHES

New plantings of commercial peach orchards do not seem advisable in the South Atlantic States and other areas where plantings in recent years have been heavy. Plantings on desirable sites in favored districts in Northern States sufficient to maintain present production would seem to be justified.

GRAPES

Grape production in California is on the increase and will probably continue upward for a few years without additional plantings, which makes new planting undesirable. In favored localities in States where the native type of grape is grown for local markets, it is probable that new plantings may be undertaken upon favorable sites. Recent expansion in the Ozarks should be studied carefully before undertaking extensive plantings.

CANTALoupES AND WATERMELONS

Conditions indicate that the cantaloupe acreage should be increased but little if any in the early producing States, and should be reduced in the intermediate and late sections. Watermelon acreage can be maintained on about the same basis as last year with prospects of fairly satisfactory returns to growers.

PEANUTS

Plantings of Virginia-type peanuts should not be increased this spring. It is probable that if imports continue light, plantings of this type equal to last season would bring satisfactory returns. However, if conditions in China improve so that imports increase, the same acreage as last year would mean low prices to the grower. If the 1925 acreage of Spanish and Runner varieties harvested for nuts is maintained or slightly increased this spring, satisfactory returns to the grower are reasonably certain.

CLOVER AND ALFALFA SEED

Inasmuch as red and alsike clover seed stocks are considerably below normal and prices are higher than normal, the production of these seeds might well be increased. On the other hand, stocks of sweet clover and alfalfa seed are much larger than normal and prices generally lower. The attention of farmers who wish to sow alfalfa or sweet clover for hay, pasture, or soil-enriching purposes is called to the fact that an ample supply of good seed is available at prices that are the lowest since 1922.

TOBACCO

The outlook for tobacco is that there will be no significant change in the demand for the 1926 crop. The constantly increasing consumption of cigarettes throughout the world has helped to maintain prices for cigarette types at a fairly high level, which in the absence of increases in production should continue for the crop of 1926. Chewing, snuff, and dark export types are, as a rule, bringing unremunerative prices at the present time, and improvement in the situation will depend largely upon readjusting production to the manifest decrease in consuming needs. Cigar types are proving profitable except in the Connecticut Valley where stocks are excessive.

SUGAR

Domestic sugar-beet and sugar-cane producers may reasonably expect no further decline and possibly some improvement in prices for the 1926 crop. The extremely low price of sugar during the past year makes it unlikely that any material expansion will be made in foreign sugar-cane areas in the immediate future.

RICE

A tendency towards increased acreage in the principal rice growing countries is in evidence. The present domestic demand so far as it has been influenced by high potato prices may not continue next year. Farmers in the rice-growing sections should consider the situation carefully before deciding upon any increase in their rice acreage.

THE AGRICULTURAL OUTLOOK FOR 1926**GENERAL AGRICULTURAL SITUATION**

During the last year agriculture as a whole has made further progress toward normal stability. Apparently the heavy net movement of population away from the farms has declined. Farmers have paid off a substantial amount of indebtedness. Increased sales of fertilizers, machinery, fencing, and building materials indicate that the farm productive plant is being restored.

The gross income from agricultural production for the present 1925-26 season will about equal the 12-billion-dollar figure of the previous year. The indicated purchasing power of farm products in terms of nonagricultural commodities averaged 89 for the year 1925 (the five years immediately preceding the war being considered as 100). This index has risen about 5 points per year since the low 1921 average of 69. During the last three months, however, it has stood at 87.

The trend of total crop acreage has been slightly downward in recent years, while population has been steadily increasing. The production of the principal crops has been at approximately the 1919 level during the last three years. Marketings of meat animals, on the other hand, declined materially during 1925 and represent the turn from the peak of the animal production cycle, reached in 1924.

In short, agricultural production has been so readjusted that the farming industry as a whole is now in the best general position since 1920. An important feature of this readjustment has been the better general balance finally achieved in livestock production. However, feed-crop acreages last year were so large that the production of most of these crops resulted in prices too low to be satisfactory to those who raise such crops for sale.

Farm products, taken all together, still stand at a disparity in exchange for industrial goods and services. Any general expansion in production at this time would tend to place agriculture in a less favorable economic position.

DOMESTIC DEMAND

The prospect for active business conditions during the first half of 1926 indicates that the present domestic demand for farm products to be marketed during the early part of this year will be maintained, but for the season of marketing the 1926 crops indications are that domestic demand will be no stronger and probably somewhat weaker than at present. Plans for agricultural production this year should therefore be on a conservative basis.

There are several factors in the present business situation which will tend to maintain an active demand for farm products during the first half of 1926. In the first place, agriculture itself is contributing toward national activity approximately the same buying power as that of 1924-25. For the last few months factory employment has been maintained at a high level and total wage payments during the last quarter of 1925 were nearly 10 per cent greater than in the same period of 1924. The cumulative effect of the recent and present employment at high wages should extend well into 1926.

Another favorable element in the present business situation is the fact that industrial production has been maintained on an efficient and profitable basis. Greater production has been accomplished at lower labor costs per unit of product, and prices of producers' goods, which at the end of 1925 were only 3 per cent above those of 1924, have not shown any tendency toward inflation or any indications of overstimulated buying on the part of manufacturers. Commercial and manufacturing enterprises have not been carried away by the speculative spirit in the stock and real-estate markets, as is further evidenced by the fact that bank loans for commercial purposes are only slightly in excess of similar loans a year ago. Furthermore, interest rates on loans for productive purposes are still relatively low, which may tend further to stimulate and maintain industrial activity.

Agriculture itself, taken as a whole, is likely to contribute nearly as much to the national purchasing power during 1926-27 as during the current year, should the consumer demand for farm products remain as high as at present.

As against these favorable factors, there are several important ones which may have a very decided bearing upon the level of domestic demand through the crop year 1926-27.

A number of factors indicate that the building and construction industry has reached its peak of expansion and may begin to recede in 1926. Rents for offices, apartments, and residences have been declining in a number of important cities, and there is an increasing proportion of unused space. Building permits, too, show a recession of 10 per cent more than the normal seasonal decline from October to December. The building contracts awarded during the second half of 1925, however, were 45 per cent larger than during the same period of 1924, whereas building permits increased about 30 per cent for the same period, indicating that there is still a considerable volume of contracts to be fulfilled during the first part of 1926.

Road construction, which is about one-tenth of total building and construction, during 1926 will be at about the same volume as in 1925. Should the proposed Federal office building program and other new State and Federal Government construction be initiated in the second half of 1926, the possible decline in activity might be further deferred. The general expectation, however, is that building activity in the second half of 1926 will not be as great as during the second half of 1925.

A similar situation exists in the automobile industry. During 1925 the industry broke all previous records. Production during the last quarter was 55 per cent above that of a year ago, and wage payments totaled 52 per cent greater. The greater volume of production has been sold only by means of lower prices and a considerable expansion of installment buying. With the number of cars in use getting closer and closer to filling the potential market it seems unlikely that 1926 will see a repetition of the 1925 increase in production, and competent observers feel that a decrease is more likely.

In view of these facts, it can not be expected that the three outstanding sources of our present business prosperity—namely, agriculture, building, and automobile production—will continue to give the same combined impetus to general business as they are doing at the present. Should a recession occur in either or both the building and automobile industries, the output, employment, and wage payments of a host of allied industries and activities would be affected. The consequent decrease in the incomes of city workers would tend

to reduce their purchasing power for farm products, particularly for food products such as butter, poultry products, and the better grades of meat, while a reduction in manufacturing activity would affect directly cotton, wool, and flaxseed prices, and indirectly through decreased employment, would tend to affect food prices.

Just as certain basic industries are now adjusting their future production schedules for a lower domestic demand during 1926-27, so should agriculture as a whole plan its 1926 production to supply a domestic market at best no stronger and probably somewhat less favorable than the present.

FOREIGN DEMAND

The present prospects in foreign markets are that the demand for most of the products of our farms in 1926 will be no better than for the products of 1925, if as good, unless the competing products of foreign countries should be reduced by a less favorable season. Although the purchasing power of consumers in most countries for the products which they will have to import may be as good or better than in the last year, recovering domestic production and the imposition of protective tariffs is reducing the demand in some countries for foreign products and competition in all foreign markets probably will be at least as strong as last year.

In the present outlook situation the favorable factors are: (1) Improvement in the general economic conditions of the United Kingdom. (2) Probable reduction in 1926 in competitive production of wheat and cotton in India. (3) Possibility of lower yields in Europe than the universally high yields of 1925.

The unfavorable factors are: (1) Unstable economic conditions in several European countries, resulting in unemployment and reduction in purchasing power. (2) Tendency to increase plantings of crops and livestock breeding in Europe. (3) Possible increased competition from Russia. (4) Tendency for continued expansion of agricultural production in Argentina, Australia, New Zealand, and Canada.

In the United Kingdom, our most important foreign market, the demand for agricultural products continues stable with a tendency to improvement in some lines. Great Britain more than any other important country is dependent on foreign supplies for its staple foodstuffs. For wheat, the demand is relatively inelastic. Large quantities are imported each year from the most available sources of supply. During the last year the United States has been a smaller factor than usual in the British market for grains and pork products, but for bacon, hams, and lard the United Kingdom has paid us more than in 1924 for smaller supplies. Larger quantities of butter were imported in 1925 than in 1924 and the sustained British demand has been a factor in relieving the American butter situation, since large foreign butter supplies might otherwise have come on the American market.

The British market for fruits has been essentially sustained at the high level reached during the last few years. There has been a moderate falling off in apple imports, but increased imports of bananas, citrus fruits, grapes, and raisins indicate a strong prevailing demand for fruits. Tobacco imports have increased in quantity although with some decrease in value. The takings of cotton from the United States last year were a third greater than in 1924 and nearly double those of 1923. Prices were lower than in the previous years, but the total value of imports remained slightly higher than in 1924 and considerably higher than in 1923.

The purchasing power of consumers in the United Kingdom appears to have increased to some extent during the last year, and present conditions are favorable to continued improvement. Unemployment has been steadily decreasing for some time, and there is in business a distinct note of confidence which in itself is a factor in steadying demand.

The influence of the United Kingdom upon cotton and wool markets depends quite as much upon her foreign markets for manufactured products as upon her domestic demand for goods. The outlook for strengthened demand for cotton textiles in India and China is somewhat uncertain, with immediate prospects rather unfavorable. Prospects are more favorable in South America and in Canada. Actual orders, however, are coming in very slowly, since with declining cotton prices buyers hesitate to place orders. A moderate recovery in woolen textile manufacturing is expected with lower and steadier prices for raw wool.

The British demand for American pork products may be somewhat weaker next year than in the last year, because of stronger foreign competition and a probable tendency to increase domestic production toward the end of the year.

Recovering agricultural production in Germany, increasing competition from the products of other countries, the imposition of protective tariffs and the incidence of an acute industrial depression have combined to weaken materially the present demand and immediate outlook for our agricultural products in Germany. There is little reason to expect next year a reduction in domestic supplies of foodstuffs unless present low prices and credit difficulties discourage German farmers to the extent of curtailing planting and breeding for next year or unless crop yields are reduced by a poor season. Our exports of pork products to Germany fell off very sharply from 1924 to 1925, even lard exports which were best sustained, falling from 282 million pounds in 1924 to 174 million pounds in 1925.

Apple imports into Germany also declined, although citrus fruits and dried fruits were imported in somewhat larger quantity. Tobacco imports increased but the increase was chiefly in imports from the near eastern countries, imports of American tobaccos showing a material decline. Cotton imports have been heavy during the last year, but the present business depression will affect the demand for raw cotton as well as for some food products.

The German market for the agricultural production of 1926 depends largely upon the length of the present industrial depression. The immediate outlook is discouraging but many observers look for an upward turn within a few months. If this depression proves to be only temporary, the next cotton crop may find the German market stronger than it is at present.

France and Italy which are important in this connection chiefly as markets for cotton and wheat, are not likely to take more of these products in 1926-27 than in the present season. The wheat market in these countries will depend largely upon the outcome of the 1926 crops since in years of good yields both are able to supply a large part of their own requirements. Italy has sown a larger wheat area for next year. These countries have for some time maintained a high degree of industrial activity with full employment. The course of business in France with continued inflation or with an effort to stabilize currency is quite uncertain. Although there is not at present as much uncertainty as to the financial situation in Italy, further material expansion in industrial activity is not to be expected, and some are doubtful as to the ability of Italy to maintain for long her present activity.

Although of minor consequence to American agriculture production, Austria, Hungary, and Czechoslovakia are in a better economic position than a year ago. Poland is suffering a severe depression. Denmark and Norway are also experiencing some depression. Sweden, the Netherlands, Switzerland, and Belgium are in a satisfactory position.

Turning to the Orient, we find much uncertainty in China because of political unrest and civil war. The effect of this situation is problematical. It is probable that China's takings of tobacco, which last year constituted about 13 per cent of the leaf tobacco and 75 per cent of the cigarettes exported from the United States, will be largely sustained during 1926. Japan continues as a strong buyer of certain American farm products, particularly cotton. Unless an industrial depression should follow the recent strengthening of exchange, Japan should continue to be a good market throughout the year.

With normal seasonal conditions there is no reason to expect any less competition next year from Argentina, Australia, and Canada. India, however, is facing a poor harvest and will not be a competitor in world wheat markets. Russia, as usual, is an uncertain factor, but with a reasonably good season following the good crop of 1925 some increased competition from Russia may be expected.

AGRICULTURAL CREDIT

Although there has been a slight tightening in commercial interest rates during the past year, present conditions indicate that sufficient funds will be available for farming purposes in most regions at rates in 1926 about the same as in 1925. During the fall of 1926 rates to cooperative marketing associations, in so far as they are affected by acceptance rates, may be somewhat higher if a further advance in commercial rates takes place.

The accumulation of capital has kept pace with the demand for credit, and comparatively low interest rates have prevailed during the past year. The Federal Reserve Bank discount rate, which is now 4 per cent in all districts, remained unchanged during 1925 at seven of the reserve banks which serve predominantly agricultural districts and increased in the remaining five dis-

tricts. Interest rates on Federal farm loans have remained at 5½ per cent in nine districts for the entire year of 1925, and are now from one-fourth to one-half per cent lower than a year ago in three of the districts. On the other hand, there has been a slight increase in Federal Intermediate Credit Bank rates. Although the rates for discounts have remained practically unchanged at 5 per cent, the rates on direct loans to cooperative marketing associations have been advanced from 4½ to 5 per cent.

In general the ability of farmers to finance their needs has been strengthened over recent years. This is reflected in the reduced demand for credit, and in the continued growth of country bank deposits. Although the general credit situation is thus favorable, there are spots where credit conditions are far from satisfactory. Local capital in some regions is insufficient to meet the needs of farmers, and the cost of short-time loans is relatively high. The small farmer especially is often handicapped in obtaining credit accommodations at reasonable cost. In still other regions the credit situation has been aggravated by numerous bank failures. The Federal Intermediate Credit Banks were established to meet conditions of this kind, and this source of credit should be utilized wherever needed to supplement the credit agencies now serving the agricultural industry.

FARM LABOR AND EQUIPMENT

During this spring and summer no material change in the supply of farm labor and no reduction in the level of farm wages below that of last year is to be anticipated. Should a marked decline in industrial employment take place toward the end of the year, farmers may expect a more plentiful supply of farm hands and a consequent lowering of wages.

In western States farm wages have been tending upward during 1925, and there has been some tendency for increases in the North Central States east of the Mississippi River. Wages were nearly the same as in 1924 in other sections, and the average for the United States was 2 to 3 per cent higher on January 1, 1926, than on January 1, 1925. Whether wages will continue at this level throughout 1926 depends largely upon the developments in industry. Even if a recession in industrial employment should occur by the middle of the year, it would be too late to affect materially the farm-labor situation until late in the fall.

The prices of most lines of farm machinery are now practically the same as a year ago. In many cases wholesale prices at the end of 1925 were identical with those at the beginning of the year, and it seems that no material changes are to be expected.

Prices to farmers of the more important building materials were slightly higher in October, 1925, than at the beginning of 1925. The wholesale price of lumber has been tending upward for several months, and building activity in prospect will doubtless prevent any decline during the next few months.

In general it seems that the cost of farm equipment and upkeep will remain at the present comparatively stable level so long as industrial conditions and the purchasing power of farmers do not change materially.

WHEAT

From present indications it is reasonable to expect that the returns from spring wheat in 1926 will compare favorably with the returns from other grains in the areas particularly adapted to spring wheat production. With an acreage increase of 4 per cent in the hard winter wheat States last fall, and the crop going into the winter in good condition, a production of hard winter wheat somewhat larger than in 1925 is to be expected. On the other hand, the production of soft winter wheat may not be any larger than the short crop of 1925, as the acreage in the principal soft winter wheat States was reduced and the crop went into the winter in poor condition. This class of wheat may therefore continue to command some premium.

If an acreage of hard spring wheat equal to last year is planted and average yields are obtained, there is likely to be a surplus of hard wheats for export and domestic prices may be expected to be more in line with those in other surplus-producing countries than at present. In making their crop plans for the coming season farmers in the spring wheat States should watch closely until planting time not only the winter wheat prospects in the United States but also the foreign crop prospects as well as the possibilities for profit in alternative crops. Although it is yet too early to forecast the 1926 world wheat crop, a slightly smaller world crop outside of the United States

may be expected unless Russia should become important. The areas of winter wheat planted in the countries already heard from are slightly smaller and the unusually high yields of 1925 are not likely to be repeated. World stocks at the beginning of the new crop year will probably not be large.

The total production of wheat in 1925 in all countries of the Northern Hemisphere reporting to date, representing practically all wheat produced in the Northern Hemisphere outside of Russia and China, was 3,284,000,000 bushels, compared with 3,023,000,000 bushels in 1924, or an increase of about 9 per cent. The United States crop for 1925 was 669,000,000 bushels, compared with 863,000,000 bushels in 1924, a decrease of about 22 per cent. The wheat crops in Canada and most European countries were greatly increased over 1924, resulting in almost a complete reversal of the 1924 situation, when the United States crop was large and those in most other countries of the Northern Hemisphere were small. Estimates received to date for the Argentine and Australia, the chief wheat-producing countries of the Southern Hemisphere, for the crop just harvested, indicate a crop about 30,000,000 bushels smaller than the 355,000,000 bushels harvested in the winter of 1924-25. Most of this wheat will move to market within the next few months.

The present prospects for 1926 indicate that the crop outside of the United States will not be as large as in 1925, although the Russian situation is still uncertain. The expected decrease, however, may be largely offset by an increase in the United States crop. The indications are that wheat production in Russia is recovering and the exportable surplus from that country is likely to again become an important factor in the world market. The 1925 estimate of the Russian crop was about twice as large as that of 1924, being not far below the pre-war average for the same territory.

The crop of India will be small, for a decreased acreage is reported and crop conditions are reported to be somewhat below normal. Though favorable crop conditions are reported over most of Europe, a smaller crop than last year is probable, for a repetition of last year's unusually high yields is not likely to be realized. The reported seedings of winter wheat in Canada and seven other countries of the Northern Hemisphere outside of the United States in the fall of 1925 are one-half of 1 per cent less than the seedings reported for the same countries in the fall of 1924.

World stocks of grain on hand at the beginning of the 1926 harvest will probably not be large. The short crop in the United States will no doubt result in a rather small carry over into the 1926 crop year. Canada, on January 1, 1926, had about 160,000,000 bushels available for export and carry over, and if the rapid export movement which characterized last fall is continued after the opening of navigation, it is probable that stocks will be reduced to a normal carry over. The probable carry over in European countries is uncertain, but with large 1925 crops in those countries expected to stimulate domestic consumption, the carry over is likely to be about normal.

If average yields of winter wheat in the United States should be obtained, and allowing for average acreage abandonment, the production of winter wheat this year would be about 25 to 30 per cent greater than in 1925, but about 10 to 15 per cent less than in 1924. The increase in winter wheat production is expected to take place in the hard winter States, where an increase of about 4 per cent in the acreage planted is reported. The conditions on December 1 in these States was considerably higher than on the same date in 1924, and somewhat above the 10-year average. In past years such a situation has usually resulted in a lower than average abandonment and a slightly higher than average yield.

On the other hand, the planted acreage in the soft winter States shows a decrease of about 6 per cent. Farmers in the chief soft winter States were unable to sow as much as they intended, owing to unfavorable weather for plowing and seeding; but there was some increase in the seeded area in the Middle Atlantic and Southeastern States producing soft red wheat. The reported December 1 condition in the four principal soft winter States averages 17.5 per cent below the 10-year average, and 12.9 lower than last year. The situation would indicate a crop of soft winter wheat in 1926 not much different from the small crop of 1925.

The situation in the Pacific Northwest for the crop of 1925 has differed materially from the situation in the country east of the Rockies. An increased production, with high costs of transportation, has kept the price of wheat in that region more nearly on an export basis than in other parts of the country. Attractive prices for soft red winter wheat have caused some movement of

Pacific coast wheat toward the eastern markets, by way of the Panama Canal, as well as by rail to the Middle West. If another short crop of soft red wheat should occur in 1928, as present prospects indicate, the growers in the Pacific Northwest may continue to find a favorable market in the East for a part of their output. The Australian crop is considerably smaller than last year, and will offer less competition in the export market with Pacific coast wheat.

SPRING WHEAT

The protection of the tariff to spring-wheat growers has maintained prices in this country well above those in Canada. The average price of No. 1 Dark Northern at Minneapolis for the six months ended in December, 1925, was 164.5 cents, which averages 15.7 cents above the price of No. 1 Northern at Winnipeg for the same period; whereas for the same months of 1924 Winnipeg averaged half a cent above Minneapolis. Whether the tariff will continue to maintain the price of spring wheat above Canadian prices during the coming crop year will depend both upon the production of spring wheat in the United States and upon the production of winter wheat, particularly hard winter, which can be substituted for spring wheat in milling. In deciding whether or not to increase their spring-wheat acreage, farmers should remember that an increased production of hard winter wheat is expected.

Since Canadian spring wheat is the most important competitor of the hard spring wheat of the United States in the world markets, the outlook for the Canadian crop is of particular significance. The acreage of wheat in Canada reached its highest point in 1921, and has since remained fairly constant. In 1925 there was a good yield, and the crop was marketed at relatively high prices, which will no doubt encourage farmers to keep the wheat acreage up to the level of the past five years. Although the unusually wet weather last fall hindered fall plowing, it provided an abundance of subsoil moisture, and should conditions this spring be favorable, there is no reason to expect a decrease in yield because of lack of fall plowing.

The production in this country in 1925 of a greater quantity of durum wheat than was necessary for domestic consumption is keeping this class of wheat upon an export basis, and the price has fallen to a level considerably lower than last year because of competition in the world market with larger supplies of durum from the countries of the Mediterranean Basin.

Prospects for durum wheat prices depend largely upon the progress of the crops in the Mediterranean Basin, which supplies the countries of southern Europe with much of their durum wheat. The countries in this region report increases in acreage and generally favorable conditions. Should conditions continue favorable, there is likely to be a lighter demand for United States durum, and possibly a reduction in price. Prospective growers of durum wheat should watch carefully the crop conditions in these countries up to planting time.

In those regions where materially higher yields are generally secured from durum, wheat growers may find this class of wheat more profitable than hard spring. Even with the price of durum on an export basis, the premiums paid for amber durum of good quality will probably continue to make this class more profitable than red durum.

Severe losses due to discounts for smutty wheat are reported from the grain market centers. The treatment of seed for smut this spring would seem to be particularly desirable if such losses are to be avoided.

FLAX

With a record crop of flaxseed in Argentina from which a large surplus will likely be offered at lower prices in competition with domestic seed, any general increase in the flax acreage does not seem advisable this year. Where, because of unfavorable conditions, the acreage in 1925 was considerably reduced, it may be advisable to increase in areas favorable to flax production. Farmers operating where new prairie or sod lands are coming into use or where flax ordinarily supplements the wheat crop on low-priced land may find it advisable to increase the flax acreage. In choosing between wheat and flax they should bear in mind that the relative price that prevails next fall rather than present ratios will determine which will be the most profitable.

Flax acreage this year equal to that of 1925 with yields equal to the average for the last five years would produce a crop about 15,000,000 bushels below the probable domestic consumption. The flax acreage in 1925 was about 450,000 acres smaller than in 1924, as a result of unfavorable weather at seeding time which caused a reduction of more than 500,000 acres in North Dakota. Average

yields of only 7.3 bushels per acre further reduced the crop which totaled slightly more than 22,000,000 bushels, or about 19,000,000 bushels below domestic requirements, for seed purposes and for oil production.

The distribution of the exportable surplus of the Argentina crop together with the European demand for flaxseed and linseed oil will be dominant factors in the flaxseed market situation during the coming year.

The latest estimates place the Argentina crop for this year at 75,000,000 bushels with an estimated exportable surplus of from 67,000,000 to 69,000,000 bushels. If as in previous years we take practically the entire exportable surplus of the Canadian crop, which is approximately 6,000,000 bushels, our requirements of Argentina seed would be around 7,000,000 bushels for the remainder of the present crop year, as imports of Argentina seed so far during the present crop year, July to December, have amounted to approximately 6,000,000 bushels. This will leave around 60,000,000 bushels of Argentina seed available for export to other countries and to be offered in competition with our domestic crop this fall.

Assuming that the surplus in India will be as large as last year there will be available for export to European and other countries outside the United States around 70,000,000 to 75,000,000 bushels during 1926. This is a much larger quantity than has been taken by these countries during recent years although European imports in 1913, when the world crop was around this year's estimate, were nearly as large.

The materially lower prices of flaxseed and linseed oil in European markets will favor increased consumption but it seems probable that this supply will continue to be a weakening factor which will be reflected in lower prices in the United States market during the coming season.

RYE

A review of the rye situation will aid in interpreting the outlook for wheat, since rye is an important bread grain in many European countries and may assist rye growers in deciding whether to harvest their rye for grain or make some other use of it. Notwithstanding a decrease in the crop of rye in the United States from 64,000,000 bushels in 1924 to about 49,000,000 bushels in 1925, the price of rye has fallen to a level considerably below that for the 1924 crop, because of a 38 per cent increase in the world crop. The prices of rye in many sections of the United States are now on a feed basis. The rye acreage sown for harvest in 1926 in eight countries reporting to date, including the United States, shows a decrease of about 11 per cent, as compared with the harvested acreage last year. These, however, do not include Russia, Germany, and Poland, the most important rye-producing countries of Europe. The acreage planted in the United States for harvest in 1926 shows a decrease of 16.2 per cent below that of last year, and is now not far above the pre-war level. As is the case with wheat, production outside of the United States, especially in Russia, Germany, and Poland, will be the governing factor. Crop prospects in these countries are officially reported to be above average, and as the trend of production has been upward, the prospect for improvement in our prices, except in years of deficient world production, is not promising.

OATS

Oats production in 1925 was about 20,000,000 bushels smaller than in 1924 in spite of a 5 per cent increase in acreage but the larger carry over brought the supply for this season above last year's totals and prices have worked to the lowest figures since 1921-22. If last year's acreage is maintained relatively low prices for this grain will likely continue unless yields are reduced.

Around 3 per cent of the oat crop is milled for human consumption whereas net exports, war years excluded, have totaled less than 3 per cent of the crop. Nearly all the crop is utilized in animal feeding so that a downward trend in the demand for this grain may be expected on account of the smaller number of animals on farms. The decreasing number of horses, both on farms and in cities, is especially important in this connection.

Receipts of oats at the principal markets have been smaller than a year ago and commercial stocks are also somewhat smaller although they are much larger than at this time in 1924 or 1923. Considerable quantities have moved to the South and Southwest and for the last two months the takings have practically equaled the moderate receipts. Relatively low prices have favored heavier feeding of oats and it appears probable that large quantities were fed on farms before the new crop of corn became available.

BARLEY

An increased world crop of barley in 1925 and the larger supply of feed grains in the United States have resulted in materially lower prices for both export and feeding types of barley. Indications are that there may be a continued reduction in export demand, while domestic feeding requirements likely will be slightly reduced as a result of the present increased supply of corn. An acreage in 1926 equal to that of last year with average yields will produce a crop nearly as large as in 1925.

On the Pacific coast the 1925 barley production was over twice the short crop of the previous year, but rains just before harvest lowered the quality of much of the California barley ordinarily going for export, so that it sold at wide discounts in English markets.

East of the Rocky Mountains production was moderately increased, particularly in North Dakota, Minnesota, and Wisconsin. Market receipts in this territory have been practically the same as a year ago, suggesting increased local feeding of barley. Probably considerable barley was substituted for corn before the new corn crop became available because of the high price of old corn last fall, but it is likely that less barley will be fed next fall in view of the larger supply of corn. Domestic malsters bought freely of the best malting barley received at Milwaukee and Chicago, as the crop was of unusually good quality. Exports from the interior States from July to December totaled about 2,000,000 bushels more than for this period in 1924, but increased offerings of Russian barley in European markets competed sharply with feeding barley from the United States and Canada.

CORN

Although feeding requirements may be slightly larger next season, a corn acreage this year equal to that of 1925, with yields as large as in recent years except in 1924, will produce a supply as plentiful, compared to the probable demand, as in 1925. With lower corn prices stimulating consumption and considerable corn required to replenish the nearly depleted stocks, the supply of old corn next fall for the country as a whole is not likely to be unusually heavy, although larger than on November 1, 1925.

Although the present low price of corn is viewed as a favorable factor to the livestock industry, where cheap feed tends to lower the cost of producing livestock and livestock products, the cash corn grower and the farmer with few hogs or livestock are vitally interested in the causes of the present situation and the general outlook for corn prices. The present low price of corn is due mainly to one of the largest crops on record for the Central States, where the bulk of the surplus corn of the country is usually produced. Southern States, however, suffering from summer drought, produced much less corn than usual and are now using feeds from other sections.

The carry-over from the 1924 crop was unusually small, but 1925 yields for the country as a whole were slightly in excess of the average and resulted in a total supply about 542,000,000 bushels larger than last year, although smaller than for any other year since 1919-20. This increased supply, a further decrease in the number of hogs and cattle on feed, together with the high moisture content of a large percentage of the marketings, are principally responsible for the lower prices which farmers have received for corn which they have marketed this season.

The lower prices, however, are stimulating the increased commercial use of corn and causing heavier feeding on farms. Though no definite figures are available as to the quantity taken by industries, over 200,000,000 bushels can be accounted for in glucose and starch manufacture and for milling purposes. Since lower prices have prevailed more activity has been reported in these industries.

Hog prices have been favorable for feeding to heavier weights, and receipts of hogs at the principal markets are averaging materially heavier than last year. If this is continued it may largely compensate for the smaller numbers on feed. The number of cattle on feed increased during December to nearly the number on feed on January 1 last year.

Marketings of corn to the first of February were larger than last year, but materially smaller than during recent years, when crops were slightly larger. The crop generally was well matured, but rains late in the fall in the Corn Belt retarded the movement and lowered the quality of a large percentage of the receipts, causing them to sell at abnormal discounts under the higher grades

of dry corn. Where farmers are in position to hold their corn in the cribs the average grade is likely to improve as the moisture dries out. Farmers may also find it desirable to hold some corn for next fall and winter feeding.

The supply of other feed grains which may be used to supplement the supply of corn is no larger than last year, and feeding of such grains before new corn was available was apparently heavier than last season, so the amount of other grains that can now be drawn upon is less than last year.

COTTON

For the last two seasons the rate of world production of cotton has exceeded the rate of world consumption with the result that stocks have been increased. Accumulated stocks are not yet burdensome as a whole, but further material increases might easily make them so.

It is almost certain that the world carry over of American cotton, as well as of other growths, on July 31, 1926, will be appreciably larger than on July 31, 1925, owing to the size of the 1925 crop. It is also probable that if the 1926 crop is as large as that of 1925, the price will be somewhat less, since the world will go into the new season better supplied with raw cotton and probably better supplied, also, with cotton goods.

The assumption that the carry over on July 31, 1926, will be appreciably larger than in 1925 is further supported by the fact that the current European demand for American raw cotton seems somewhat less active than the demand at this time last year. With supplies measurably larger than they were at the end of the calendar year 1924, and prices approximately 15 per cent lower, exports to Europe for the season to date are about the same as in the corresponding period last year. They are moving, however, in a less constant flow. Official figures are not yet available, but with cotton in plentiful supply mill activity shows outwardly no material increase in France or Italy, and in Germany where the mills were busy early in the season the industry is now depressed. In the United Kingdom, mill takings of American cotton show a substantial increase, but a further curtailment in working hours has recently been put into effect. Japan, on the other hand, took 604,000 bales in the five months, August to December, as compared with 463,000 bales in the same months last season. Stocks of American raw cotton in foreign ports are relatively full. In the normal course of events, some improvement in the present slow demand from abroad is to be expected, but an active and sustained demand throughout the remainder of this season is hardly likely. Indications of conditions which may prevail during the period in which the 1926 crop will be marketed point to a foreign demand no better than that of the present season.

In this country there seems to be no reason to suppose that domestic demand will change materially before July 31, 1926, although, were a change to come about, a reduction would be more probable than an increase. Conditions under which the new crop will be marketed are uncertain, but there is no marked indication that domestic mill demand will exceed that of the present season.

Should the acreage for the United States in 1926 equal the 1925 acreage and the yield per acre be that of the average for the last five years, 1921 to 1925, inclusive, 143.2 pounds of lint per acre, the production would be about 13,800,000 bales, and with the probable carry over from the current season there should be no shortage of supply. But the five years which make up this average include the three lowest yields per acre which have occurred in the last half century, and a yield somewhat larger than this average would not be unexpected. A production resulting from a yield larger than the five-year average on an acreage equal to that of the last season, taken in conjunction with the prospective larger carry over for this year could easily result in a price too low to render a profit to large numbers of producers. Obviously the situation might be aggravated if the acreage were increased. The price readjustments in times of oversupply never fail to bring serious consequences to farmers, to all branches of the industry, and to related business.

On the other hand, there is little reason at this time to believe that favorable weather over a large part of the belt and the relative freedom from weevil damage that has been enjoyed in the past two seasons will be repeated. Present indications are that the number of weevils which entered hibernation in considerable sections of the Cotton Belt is unusually large as compared with past years, although if the weather is unfavorable to the weevil either during hibernation or during the cotton-growing season, it will tend, of course, to deplete these numbers and reduce the probable amount of damage.

From present available data the production of cotton in foreign countries in 1925 is the largest on record. This follows in part from favorable weather conditions in those countries. In part also it is the result of the economic situation in Europe and the apparent necessity felt in some consuming countries of creating within their own domains a good part at least of the raw materials required by their industries. The exertion of these economic forces may be expected to continue. Foreign cottons, while not competing directly with the American crop as a whole, and least directly with those cottons having a staple length of an inch and an eighth, do compete indirectly. It is perhaps significant that the Egyptian Government has taken action tending to limit the acreage which may be seeded to cotton in the present year.

It is likely that cost of production per acre, in this country will be about the same as in 1925, there being no outstanding indications to the contrary at the present time. Wages paid to labor are about the same as in 1925. The cost of keeping mules will be somewhat lower in some areas, although in other areas, owing to the short crop of hay and grain, this item of expense will be higher. There is no present indication of radical changes in the cost of farm machinery or fertilizers. These four items of expense approximate two-thirds of the cost of producing cotton. Calcium arsenate is in plentiful supply and available at this time at relatively low prices.

Studies of crops of past years indicate that about 54 per cent of the variation in the total annual production of cotton in the United States has been due to changes in acreage, whereas about 46 per cent has been due to fluctuations in yield per acre. Notwithstanding the diversity of conditions which confront various sections of the Cotton Belt, growers in planning their year's production of cotton would probably do well, generally speaking, to proceed with caution. It should not be forgotten that there is always an advantage in having qualities that are desirable and in demand. Growers in every locality may well have in mind the tendency toward increased competition among producers both here and abroad, and give some thought to the possibility of so organizing production as to reduce costs per pound. The possibility of renewed boll-weevil attack should not be overlooked. Should there be a recurrence of heavy infestation, the use of calcium arsenate at present prices would doubtless prove profitable in many areas.

BEEF CATTLE

Both the immediate and long-time outlooks for the cattle industry now appear more favorable than in recent years. The number of steers is the lowest in many years; beef cows number 2,500,000 less than in 1920, but milk cows are more than a million greater, and many of these produce beef calves. The number of breeding animals is apparently large enough at present to produce as much beef as it will pay cattle producers to raise. A reasonably constant demand for beef is anticipated, and no prospect of early competition in the United States markets from foreign sources is in sight. Cattle prices are apparently in the upward swing of the cycle with the peak still several years in the future.

According to the most recent estimates of the department the number of all cattle in the United States declined about 9,000,000 head between January 1, 1920, and January 1, 1926, or from 68,900,000 to 59,800,000. The estimated decreases were 2,900,000 steers, 3,400,000 calves, 1,100,000 heifers, and 1,600,000 cows. This represents an average annual decrease of about 1,500,000 head during the period.

A striking feature of the supply situation is that the number of steers has been declining at the rate of about half a million head per annum for the past six years, with the result that at present the number of steers in the country is about 30 per cent smaller than in 1920.

Since the number of milk cows increased steadily from 1920 to 1924 and only decreased slightly in 1925 it is certain that most of the decrease in cows has been in those most directly related to the beef supply.

The estimated number of cows of all kinds in 1920 was about 33,300,000 and in 1926 about 31,800,000. During the same time the estimated number of milk cows increased from 21,400,000 to 22,300,000. The decrease in cows devoted exclusively to beef production is thus indicated at around 2,500,000 head. However, a considerable part of the cows kept for milk are cows of beef type whose increase is largely saved for beef purposes.

The present beef-cattle situation therefore seems to be one of a shortage of steers, especially of those over 2 years of age, but with breeding herds of cows

and heifers sufficiently large to maintain as much production as will pay cattlemen to produce.

The annual inspected slaughter of cattle and calves during the six years, 1920-1925, averaged 13,390,000 head, of which 8,917,000 head were cattle and 4,474,000 were calves. Apparently the average yearly inspected slaughter has been exceeding replacements in the inspected slaughter supply areas by about 1,200,000 head a year. The largest slaughter and greatest reductions in numbers have been during the last three years, the largest being in 1925.

Apparently the yearly inspected slaughter of cattle and calves can not greatly exceed 12,200,000 head without still further depleting numbers. A slaughter of this number would be nearly 20 per cent under that of the last year.

Packers in 1925 bought 877,000,000 pounds more cattle, excluding calves, than in 1922, and 288,000,000 pounds more than in 1924, yet they paid 53 cents per 100 pounds more for cattle in 1925 than in 1922 and 44 cents more than in 1924. Since the lower-priced cattle, that is, cows and heifers, made up a greater proportion of total slaughter in 1925 than in previous years, the actual increase in cattle prices was greater than these figures show. Packers also bought 238,000,000 pounds more calves in 1925 than in 1922 at an increase in price of 62 cents per 100 pounds and 70,000,000 pounds more than in 1924 at an increase in price of 98 cents per 100 pounds.

The sharp advance in prices of finished cattle in the summer of 1925 although not maintained to the end of the year served the purpose of revealing the underlying strength of the market and showed what may be expected whenever real curtailment of supplies develops. If the prospective smaller supplies of pork in 1926 result in higher prices for that commodity an increase in the demand for beef can be expected.

During the first half of 1926, market receipts of slaughter cattle are expected to be about the same as in 1925 with prospects favoring somewhat heavier supplies of grass cattle this spring from the Southwest. Average weights may be somewhat less than a year ago. Average prices are expected to show a gradual upward trend, although with adequate supplies available no sensational advances are in sight. Presumably lower grades will show a disproportionate advance, thereby narrowing the price spread between the better and lower grades of cattle to less than usual.

During the last half of 1926 total market receipts of cattle are expected to fall considerably below those of 1925. Marketings of range cattle are expected to be materially less but the number of grain-finished cattle may show an increase. A marked decrease in steers, both grass fat and feeders is indicated. Though the general level of beef-cattle prices during this period will depend somewhat on the general business situation, it is expected to average considerably higher than last year although top prices will probably not reach the peak touched in 1925. Well-finished, lightweight cattle will probably sell at the top for the greater part of the year. Calf slaughter in 1926 is likely to be less than in 1925. No marked shortage of veal, however, is anticipated.

In making plans for the future, breeding herds should be carefully culled and cared for and calf crops increased so that the same number of cattle will produce a greater quantity of beef of a higher quality. Such beef should sell at relatively higher prices. The maintenance of high-grade breeding herds rather than relatively large numbers of steers as in the past will place the cattleman in a position to increase production rather promptly when prices justify it. This will make for more flexible production, lower production costs, and quicker turnovers.

HOGS

The outlook for the swine industry throughout 1926 appears very favorable, with indications that hog prices will be maintained at high levels. The number of hogs in the areas of commercial production is the smallest since 1921 and for the entire country the smallest in many years. Stocks of pork and lard are the second smallest in 10 years and the present strong domestic demand for pork products seems likely to continue through most of the year. Hog production has been declining since 1923, but apparently the low point in the production cycle has been reached as farmers' reports indicate that the number of sows bred for the 1926 spring-pig crop was slightly larger than for that of 1925.

As to supplies to June 1, 1926, the pig surveys of last year indicated a reduction in the Corn Belt of 11 per cent in the spring-pig crop and 12 per cent in the fall crop from those of 1924. The estimated number of hogs on

farms in the Corn Belt January 1, 1926, however, was only 7 per cent less than January 1, 1925. This confirms the expectation that the favorable feeding ratio between corn and hogs would retard the marketing of the 1925 spring-pig crop.

Federally inspected slaughter of hogs from November, 1925, to May, 1926, inclusive, is expected to total about 27,000,000 as compared to 31,189,000 for the same period the year before. Approximately 12,500,000 head were slaughtered during the three months ended January 31, 1926, leaving some 14,500,000 for slaughter from February to May. The slaughter from February to May, 1925, was 13,969,000. Weights should average somewhat higher in the first half of 1926 than in the corresponding period of 1925.

As to supplies from June 1 to November 1, 1926, hogs slaughtered from May to October come largely from the fall-pig crop of the previous year and from sows farrowing in the previous spring. The fall-pig crop in the Corn Belt in 1925 is estimated at about 1,800,000 head less than that of 1924. The number of sows to be marketed next summer will probably not differ greatly from 1925 and total slaughter from June to October is estimated at from 1,500,000 to 2,000,000 head smaller than in 1925.

In regard to supplies from November 1, 1926, to May 31, 1927, the supply of hogs reaching market next winter will come mainly from the pigs born this coming spring. The number of sows bred or intended to be bred for farrowing in the spring of 1926 was reported as 12 per cent larger than the number that actually farrowed in the spring of 1925 for the United States and 11 per cent larger for the Corn Belt. Previous surveys have shown that the sows that actually farrowed in the spring have fallen from 8 to 10 per cent short of the number reported bred in the previous December. These previous surveys were made in periods when prices were unfavorable to increases in hog production. The size of the 1926 spring crop, therefore, can not now be changed so far as breeding is concerned and the principal remaining factor which will influence it is weather conditions at farrowing time. Last spring weather conditions at farrowing time were very favorable and the average number of pigs saved per litter was 10 per cent larger than in 1924.

It appears, therefore, that supplies available for market next winter will be little if any larger than during the winter 1925-26, unless additional breeding since the December pig-survey reports were obtained increases the 1926 spring-pig crop above present indications.

Prospective foreign demand for American pork products during 1926 does not promise much improvement over 1925.

Economic conditions in our most important market, the United Kingdom, promise to be somewhat better than last year, and there is some likelihood of a relatively good demand for cured meats during the first part of the year with Danish and Irish supplies running smaller. British lard imports seem hardly likely to be as large as last year.

The outlook on the Continent as a whole is less favorable than in the United Kingdom. German demand for pork products has decreased somewhat during the past year and seems likely to be restricted by the difficult credit situation during the next few months, although economic conditions are expected to improve before the year is over. The present indications are that a distinct upward tendency in European hog production may be expected during the latter part of the year, especially in Germany and central Europe.

During 1925 the total weight of hogs slaughtered under Federal inspection was almost exactly the same as in 1922, yet the quantity paid by packers was \$240,000,000, or over one-fourth, more than in 1922, showing the much stronger demand in 1925. Active business conditions will probably continue through the first half of 1926 and the greatly reduced hog supplies in areas outside of the Corn Belt will tend to increase domestic demand. If less favorable business conditions should develop some slight effect upon demand for pork products in late 1926 and 1927 may result, but no drop in business activity sufficient to affect hog prices materially is anticipated.

As to price outlook, the demand for pork products this spring is expected to be about as strong as last spring. If the 1926 spring pig crop is no larger than now indicated market supplies will continue small through the winter of 1926-27, and only the usual seasonal decline in hog prices seems likely.

Hog production is now at the low point of the cycle. Similar conditions in the past have usually been followed by increased production beyond the point of greatest profits. In making breeding plans for next fall, and especially for the spring of 1927 farmers should remember that largely increased supplies

are not likely to sell at present prices. In sections outside the Corn Belt, however, present local supplies are much below what seems needed to meet even normal rural requirements.

DAIRY PRODUCTS

The dairy industry as a whole is in a relatively strong position. The immediate outlook is for fairly satisfactory returns to producers through the present winter. With fewer milk cows and heifers on farms than a year ago and production hardly keeping pace with present trend of domestic consumption, some slight increase in number of heifers raised for milk cows may be desirable. The effect of foreign competition may be greater than during the last two years if weather conditions in foreign countries are normal and present trend of foreign production continues upward.

The domestic supply situation is influenced by the reduced number of milk cows on farms on January 1, 1926, and the smaller number of heifers raised during 1924 and 1925; also by present relatively low feed prices. Domestic production of dairy products in 1925 was practically the same as in 1924. Low feed prices since last fall together with relatively high prices for dairy products have stimulated heavier feeding and resulted in larger production which may be expected to continue through the winter. The number of dairy heifers on farms January 1, 1926, was 373,000, or 9 per cent less than a year previous, and the number of cows was 1 per cent, or 233,000 less than on January 1, 1925, the high point since the war. Apparently about 9 per cent less heifer calves were raised in 1925 than in 1924. These decreases indicate that unless an unusually large number of old cows are retained no appreciable increase in the number of milk cows can be made during the next two years.

Feed prices will probably continue favorable to dairymen through the first half of 1926. Sufficiently higher prices for dairy products would induce heavier feeding which would tend to offset the decrease in the number of cows. Otherwise milk production during the next two years may be somewhat lower than for the past two. If this should be the case, continued growth in the demand for fluid milk would mean a reduction in the output of other dairy products. Unusually favorable pasture conditions would, of course, affect this situation.

The consumption of dairy products has been tending upward since the war, while prices have been generally well maintained. The increase in per capita consumption of fluid milk has been especially marked in large cities, and for the country as a whole the trend has been at the rate of 5 per cent increase per year. Per capita consumption of condensed and evaporated milk in 1925 showed some gain, but per capita butter consumption, which had been tending upward, did not show the usual increase because of higher prices.

The present information as to the general business situation indicates that the present high level of employment and wages will be maintained through the first half of 1926, with a possibility of some slight slackening in the second half, which would probably not materially affect the demand for fluid milk but would tend to lessen the demand for butter. Any substantial reduction in city industrial activity and pay rolls would be reflected in prices of all dairy products.

In northeastern Europe, as in the United States, relatively cheap feeds are tending to stimulate dairy production this winter, which should bring the herds on to pasture in good condition. In the Southern Hemisphere unfavorable pasture conditions, however, have already checked production so that its output for this season will probably be little, if any, greater than last season.

Dairy production has been tending upward in all the principal exporting countries since the war. Denmark has now reached a volume of exports above the pre-war level and in the last two years seems to have resumed the normal pre-war trend of about 2½ per cent increase in volume per year. Australia has been increasing at about 1 per cent per year though varying widely from year to year with weather conditions. New Zealand and Argentina have both been increasing rather steadily at about 10 per cent per year and apparently can continue at about the same rate for several years. These facts indicate that butter exports from these four countries will probably tend upward for several years at a rate equal to an annual increase of about 30,000,000 pounds or 3 per cent of the total 1925 world exports. Production has recently been increased at a more rapid rate in Siberia and by the growth of the dairy industry in northeastern Europe and western Canada. In 1925 imports of butter into both Germany and Great Britain continued upward, the increase

being especially marked for Germany. Both countries are now fully up to the pre-war trend of volume of imports.

With dairy production also increasing within the deficit areas in Europe, especially Germany, there has been a proportionately greater increase in consumption than is reflected in the greatly increased imports. These facts indicate that even if European consuming power should continue as good as in recent years, any considerably increased world exports would not find a market within Europe at prices as high as last year. There is the possibility that domestic consumption within the dairy exporting countries of Europe may increase to nearer their pre-war normal which would take care of some of the increasing supply. The recent strength in the foreign situation will, therefore, depend largely upon European demand again reaching a new high level which will require continued, if not improved, industrial prosperity in Europe. With a steady increase in foreign production, unless consumption in Europe continues to increase, foreign competition in our markets will likely become increasingly important.

During 1925 prices of dairy products recovered markedly from the depressed condition of the preceding fall and winter. Butter prices for the year averaged 6 per cent above those of 1924 and fluid-milk producers at principal cities received average prices ranging from 6 to 20 per cent above 1924; but neither butter nor milk prices reached the 1923 levels. Continued active demand, continued heavy domestic production, and foreign competition no greater than at present are indicated for the remainder of the winter season. Prices, therefore, will probably follow about the usual seasonal course until the new storage season opens.

The major facts likely to affect the 1926-27 dairy year are: (1) There are fewer cows in this country and apparently nearly 9 per cent fewer heifers than a year ago. (2) Foreign competition will increase if weather conditions are normal in foreign countries. (3) Less favorable industrial conditions seem probable, offsetting the usual increases of consumers' demand.

Pasture conditions, both for the United States and foreign countries, can not be predicted and because of their importance as a factor in production may, of course, for any one season alter the general situation.

SHEEP AND WOOL

Facts justify the belief that 1926 will be a good year for the sheep industry, though not quite so favorable as 1925. With favorable weather conditions, slightly larger lamb production in 1926 is indicated. A gradual slackening in the demand for both lambs and wool in late 1926 and in 1927 seems possible. There could be a further increase, however, in lamb and wool production in some sections at a profit, over alternative enterprises, even though such expansion should result in somewhat lower prices.

LAMBS

Consumptive demand for lamb has been growing with population at about $1\frac{1}{2}$ per cent per year. Active feeding and breeding demand, unusually favorable urban conditions, and high prices for beef and pork helped to maintain high lamb prices in 1925. The latter two factors appear favorable for 1926, with increased competition from pork, probably beginning in 1927. Urban prosperity promises to support an active demand for lamb in the first half of 1926. The consumptive demand the latter part of 1926 will depend upon a continuation of present industrial activity.

The estimated number of lambs on feed January 1, 1926, was about 3.5 per cent less than at the beginning of 1925, decreases being about the same in both the Corn Belt and Western States. Decreases in the Western States were largely in the late-marketing areas, which would indicate a heavier early movement of fed lambs than last year and reduced numbers later.

The estimated number of sheep and lambs on farms on January 1, 1926, was 3.4 per cent greater than at the beginning of 1925 and about 12 per cent above 1922, the previous low point in numbers.

The increased numbers of breeding stock and the fact that western ewes were bred under most favorable conditions indicate a larger lamb crop than in 1925. The size of the lamb crop, however, depends very largely on weather conditions during the lambing season. Unfavorable weather might result in a total crop below that of last year. With 5.5 per cent more lambs raised in 1925 than in 1924 and with no material increase in slaughter in 1925,

evidently many ewe lambs were held back for breeding purposes. With a probable increase in the number of lambs born in 1926, and with less incentive to hold back lambs there may be an increase in marketings in late 1926 and 1927. The accumulation of breeding stock may still further increase receipts in 1927 and 1928.

With slightly fewer lambs on food, present prices of fed lambs should be maintained during the next few months, provided they are marketed at desirable weights is required for consumption. The potential increase in the market supply of early spring and native lambs is not enough to give cause for alarm. Next fall and winter, prices of slaughter lambs will depend to a considerable extent on the feeder lamb demand and the developments in the business situation, any material break in urban prosperity tending to be reflected in lamb prices. Even should there be less favorable business conditions, however, and as much increase in lamb production as now seems possible, lamb returns for 1926 and 1927 promise to be very satisfactory in comparison with any recent year except the two unusually favorable ones which have just passed.

WOOL

Information received from countries producing about 65 per cent of the world's supply of wool indicate an increase in wool production for those countries of about 2 per cent in 1925 over the previous year, and 6 per cent below the average for the five years immediately preceding the war. A slight increase in demand over last year might readily absorb the larger supply. Available information indicates a rather marked tendency to increase sheep in many important sheep countries. In 1920-21, the low point following the war, the number of sheep in 10 important countries had declined 9 per cent from the 1911-1913 average; by now, however, they are 4 per cent over 1920-21.

Imports of wool into France and Germany from July 1 up to December 1 were much above the figures for the same period in 1924. Imports into the United Kingdom showed a decrease of 25,000,000 pounds under 1924. World wool prices declined sharply the first four months of 1925, rallying a little subsequently, and then weakening slightly since November.

With more active business conditions for the year, wool consumption in the United States in 1925 was apparently considerably greater than in 1924 and about equal to pre-war per capita consumption. Imports of wool in 1925 into this country were 61,000,000 pounds or 23 per cent more than in 1924. Wool prices stiffened slightly during the second half of 1925, following their sharp drop in the spring, but weakened at the close of the year. Wool prices in this country are governed very largely by world conditions, but any slackening in business conditions in this country may temporarily depress American wool prices below their usual relation to world prices. Stocks are not up to normal, however, so the margin above the world market resulting from the tariff would soon reappear. Present foreign and domestic conditions do not indicate any violent fluctuations in wool prices in the immediate future.

As to the long-time outlook, the sheep industry has expanded both on the range and on farms. A further moderate expansion where sheep are to be added as a permanent part of the business need not be discouraged although prices may not be so high.

Those who are planning to increase their breeding flocks immediately should consider the high initial investment and the probability of somewhat lower lamb prices in the future.

HORSES AND MULES

The present number of work animals is apparently ample to meet farmers' needs during 1926, although there has been a marked decrease in the number of colts foaled during the last six or seven years. Continued reduction will eventually result in an acute shortage of work animals. Individual farmers should study carefully the type of power best suited to their own farms and determine individual needs for horse and mule replacements 3 to 10 years from now.

The number of horses on farms in the United States decreased 20 per cent from January 1, 1920, to January 1, 1926, whereas mules increased 5.5 per cent. The number of horses and mules combined decreased 15 per cent during this period. About 3 per cent of this reduction occurred within the last year. Although the number of horses and mules over 2 years of age decreased about

6 per cent from 1920 to 1925, the number of colts under 2 years decreased 51 per cent. The census of 1925 showed 73 colts under 2 years per 1,000 horses and mules of all ages, as compared with 132 colts in 1920, or a reduction of 45 per cent in the ratio of colts under 2 years to all horses and mules. Stallion and jack registration decreased 12 per cent in Iowa from 1922 to 1924, 15 per cent in Illinois, 21 per cent in South Dakota, 33 per cent in California, 34 per cent in Pennsylvania, and 45 per cent in Colorado.

Reports from the farms of crop correspondents show that 91 colts were foaled per 1,000 head of all horses and mules on their farms at the end of the year in 1919, 84 in 1920, 72 in 1921, 61 in 1922, 49 in 1923, 44 in 1924, and 42 in 1925. Although this downward tendency in colt production continues unabated in the South Central States and the range country, an increase in the number of colts foaled in 1925 was shown by the Corn Belt and Northeastern States.

Unless more colts are raised in future years than were raised in 1925, either the number of horses and mules on farms will fall to approximately one-half the present number on farms, or the average life must exceed 15 years.

The number of tractors on farms in 19 States increased from 109,707 in 1920 to 216,223 in 1925, according to the Census Bureau. The number of horses in such cities as New York, Chicago, Baltimore, Philadelphia, and Boston show a yearly decrease of about 5 or 6 per cent for the past 15 years.

Although the actual value per head of both horses and mules during the last five years has been the lowest in 20 years, the value expressed in terms of 1910-1914 dollars was the lowest on record for a period of nearly 60 years. The average value per head of mules for the United States was \$81 on January 1, 1926, as compared with the 1910-1914 average value of \$123, or a reduction of 34 per cent. Horse values showed a decline from \$109 to \$65, or 40 per cent. During the last five years horse and mule prices have remained at this very low level, with the general trend downward for the period.

The farm value per head of both horses and mules on January 1, 1926, was higher than last year in the Central States, but generally lower in the Southern States and some of the Eastern and far Western States. Feed grains, corn, and oats, and roughage, however, are relatively much more plentiful in the Central States than in the Southern States this winter.

With the extremely low prices for horses that have prevailed for the last five years, horse breeding has been so unprofitable that the number of colts foaled annually has been reduced about one-half. A larger proportion of the work animals of the country are old horses and plugs than at any time in many years. With a continuation of the present low birth rate of colts the reduction in number of work animals will undoubtedly be much greater in the next five years than has already occurred since 1920. When this reduction will cause a shortage of work animals is dependent on the extent to which farmers adopt the use of mechanical power as a substitute for horses.

The individual farmer should study carefully the type of power best suited to his own farm, and decide as to his own need for horse and mule replacements 3 to 10 years hence. This need can be met either by raising colts or by buying horses and mules young enough to live through this period. Some farmers who are particularly well situated for raising good quality horses and mules as a side line to regular farming operations may find it profitable to supply the needs of other farmers. A study of horse ages made last spring by the department shows relatively old horses in Eastern States and old mules in Southeastern States. Present low prices for horses can not be expected to continue indefinitely; the average price in January was higher than a year ago, although the average age was greater.

POULTRY AND EGGS

Present conditions indicate that the production of eggs will be somewhat larger and prices lower during the first half of the year 1926 than for the same period in 1925. The poultry crop marketed during 1926 will probably be as large if not larger than that of 1925, owing to a larger number of chickens on farms which with probable lower egg prices will influence producers to market more of their poultry during the latter part of the year, rather than to keep it for egg production.

Production of eggs in 1925 was slightly above that of 1924. Receipts at the leading terminal markets in January, 1926, were about 50 per cent heavier than for January, 1925, and 17 per cent above the five-year average. This heavy increase in receipts indicates a very material increase in egg produc-

tion over that of a year ago. Mild weather for the season, increased number of hens on farms, and cheap feeds are factors influencing this heavier present production. During the remainder of the year, egg production will be influenced by the relation of egg prices to feed prices and the marketing of old stock which is not so profitable in the laying flock.

Market prices of poultry, at least during the first six months of 1926, will probably be higher than during the same period in 1925, when heavy storage stocks of dressed poultry had a depressing influence. During the latter half, marketings probably will be heavy, but prices may be supported somewhat by the prices of other meats. The present storage stocks are considerably below those of the same period for last year, which may be expected to result in broader outlets for fresh-killed poultry.

The present information indicates that egg production for 1926 will probably be larger and prices lower, that poultry marketings will increase but prices will remain favorable at least during the first half of the year. Prices to producers, both for poultry and eggs, will probably average lower in 1926, particularly on eggs, than in 1925. This indicates the desirability of looking to greater efficiency rather than increased production during the present year.

HAY

In spite of the sharp decrease in the 1925 hay crop which reduced the supply for this season to the lowest point for six years, the quantity marketed has been adequate for consumers' needs at prices only moderately higher than those which prevailed following the record crop of 1924. This slackened demand for hay reflects the decrease in the number of hay-consuming animals, and indicates that prices received by farmers who sell their hay are likely to be lower during the coming season. If average yields are obtained upon an area equal to last year's acreage the crop will be ample for domestic consumption, which has averaged about 104,000,000 tons for the last 10 years.

The crop last year was decidedly smaller in the important timothy and timothy-and-clover region than in 1924 when the crop was unusually heavy. Production in Ohio, Indiana, and Illinois totaled less than two-thirds of the 1924 figure, and neighboring States likewise showed some decreases. Drought cut down the crop in most of the South, although Louisiana and Mississippi recovered partially from their near failure in 1924. On the other hand, the New England crop was slightly larger and the Rocky Mountain and Pacific Coast States have considerably more hay this season than last.

Prospects are for nearly an average carry over this spring, although this will be affected by the severity of the weather during February and March and the length of the spring-feeding season. Relatively mild weather during the early part of the winter has permitted livestock to range freely in many sections, so that less hay has been fed, up to the first of February, than had been generally expected. The poor condition of pastures last fall will tend to require slightly longer feeding this spring.

High shipping costs continue to cause low prices in surplus-producing regions remote from market and high prices in consuming sections, suggesting that the acreage might be increased profitably in sections where the local supply falls short of consumption. High prices for hay in southern markets should favor a resumption of the trend toward greater self-sufficiency in that region which was interrupted by the severe drought last year. An increasing supply of alfalfa in the eastern half of the United States is reducing the use of western alfalfa in eastern and southeastern markets. The decreasing number of horses on farms and in cities suggests that some timothy acreage might profitably be replaced by legume hays.

There appears to be no need for seedlings beyond that necessary to maintain the present acreage, so far as market hay is concerned, but farmers should not lose sight of the fact that low costs in livestock production are based upon abundant pasturage and hay supplies. Soil improvement also calls for the generous use of legumes and grasses. In view of the relatively low prices of sweet clover and alfalfa seed and the undesirability of increased acreage of corn or the cereals, it would seem advisable to provide liberally at this time for future pasture and forage supplies and for soil improvement.

FEEDS

Should normal weather conditions prevail during the remainder of the winter, and if spring pasturage is available at the usual time, it appears

doubtful if the prices of feed stuffs, including mill feeds and high-protein concentrates, will make any material advance during the first six months of 1926.

Although indications are that the production of wheat mill feeds during the remainder of the 1925 crop year may be slightly less than for the same period last year, and trade reports indicate that stocks in storage and in dealers' hands are only normal for this time of the year, still the liberal supply of feed grains and larger productions of other by-product feeds will go far in limiting the demand for this class of feed. The supply of domestic wheat mill feeds also will be supplemented by importations from Canada and from Canadian wheat milled in bond in the United States.

An increase of about 17.5 per cent in the 1925 production of feed grains, together with the larger supply of mill oats, cleaned from the 1925 crop of wheat and barley, and the conservation of screenings cleaned from grains at the farms, are competing with mill feeds in supplying consumers' needs. The large amount of high-protein concentrates that has been available for mixing with these grains and screenings has supplemented this feed supply and limited the demand for wheat mill feeds.

Production of cottonseed meal and cake from August 1 to January 1 was about 237,000 tons greater than last year whereas exports were nearly 60,000 tons less. Stocks on hand at the beginning of the year totaled approximately 260,000 tons, an increase of nearly 100,000 tons over the stocks on January 1, 1925.

Although the smaller crop of flax in the United States has reduced the supply of domestic linseed meal a sufficient quantity of Canadian and Argentine flax will probably be imported to bring the total supply of linseed meal to near last year's quantity.

The reduction in the slaughterings of livestock has reduced the supply of digester tankage, and stocks in manufacturers' hands are reported small. The supply during the next few months will not be large and prices are likely to remain relatively high if the usual seasonal demand prevails.

Lower corn prices have stimulated the production of gluten and hominy feeds and ample supplies of these feeds seem assured at prices averaging lower than last year.

POTATOES

Growers of early potatoes who can market their product by the first week in June need have little fear of overproduction this season, but growers in the intermediate and late potato States will need to keep a close watch on the acreage being planted in competing sections because many growers who made unusual profits from the 1925 crop seem to be unduly optimistic regarding the returns to be expected this season. If the total acreage of potatoes in the United States is not increased over the very low acreage harvested in 1925 it is probable that good profits would again be obtained. If the acreage is increased 7 per cent it would equal the acreage harvested in 1924 when on account of abnormally high yield many more potatoes were grown than could be marketed. If the acreage is increased by 10 per cent and a yield of 110 bushels per acre is obtained, the production would be 377,000,000 bushels, which is about the average production in the United States during the last 10 years. If the acreage is increased as much as 20 per cent, as it was following the short crop of 1916, a yield of 110 bushels per acre would give a crop of 411,000,000 bushels, which is the equivalent of 3.55 bushels per capita. During the last 15 years such a crop has, in nearly every case, reduced returns from potatoes sufficiently below those from competing crops to cause a reduction in the acreage of potatoes planted the following year.

Conditions are so abnormal this spring that, outside of the very early States, no individual farmer can afford to plant a greatly increased acreage of potatoes without taking into consideration the acreage being planted by others. Farmers who find that many of their neighbors are planning to put in a very largely increased acreage of potatoes should at least be cautious about doing the same, for the response of growers in one's own community to an abnormal price situation is often a fairly good indication of what is happening elsewhere. On March 19 the Department of Agriculture will issue a report on the acreage of potatoes and other crops which farmers then intend to plant. In the case of potatoes changes after that date may need to be considered this season.

There is room for a considerable difference of opinion regarding just what acreage of potatoes should be planted because there is evidence that the quantity of marketable potatoes produced per acre is increasing and the per

capita consumption may be declining somewhat. The overproduction from the crop of 1924 resulted primarily from the exceptional yield of 127 bushels per acre. The acreage that year was relatively low and if the yield had not exceeded all previous records the crop could have been marketed without difficulty. The unusually high price being paid for the crop of 1925 results from a 7 per cent reduction in acreage, combined with a reduction of 18 per cent in the yield per acre. In 1925 the yield per acre was 103.8 bushels, or 3 bushels per acre above the average yield during the previous 10 years. The obtaining of this yield, notwithstanding the generally unfavorable weather conditions, supports other evidence indicating that, on account of improvement in the quality of potatoes grown for seed purposes, the yield of potatoes in the United States is now likely to average close to 110 bushels per acre, although the average yield during the last 10 years has been only 100.8.

SWEET POTATOES

Growers of sweet potatoes should not permit the satisfactory prices during the last two seasons to lead them into the mistake of planting an excessive acreage this spring. The price has been high, chiefly because of abnormally low yields resulting from weather conditions.

In 1924 the average yield of sweet potatoes was only 79 bushels per acre and in 1925 it was 80.3 bushels. In no other year since 1907 has the average yield in the United States fallen below 90 bushels per acre, and on the average about 95 bushels per acre can be expected. If the 1926 acreage should be the same as that of 1925, a yield of 95 bushels per acre would increase production 18 per cent over the crop of 1925 and 35 per cent over that of 1924.

In analyzing the sweet-potato situation it should be kept in mind that New Jersey, Delaware, Maryland, and Virginia usually supply about two-thirds of the car-lot shipments, although having less than 10 per cent of the total sweet-potato acreage. Growers in these four States which produce the Jersey type of sweet potato for shipment to northern markets produced a crop in 1925 which was 4 per cent less than in 1924, although the 1925 acreage was 9 per cent greater than in 1924. However, prices for the 1925 crop from this section have barely been maintained at the level of prices received for the 1924 crop, even though assisted somewhat by the very short crop of white potatoes.

In the remainder of the sweet-potato States the bulk of the sweet potatoes grown are of the moist-fleshed type, and the marketing problem is more largely a matter of supplying local needs. In this group of States production in 1925 was about 18 per cent over the very short crop of the previous year, but still was below the quantity normally required for local consumption. Early 1926 prices are lower than for the corresponding period last year, but they still are sufficiently high to encourage much heavier planting in certain areas this spring. Those who grow sweet potatoes for local markets should, therefore, watch closely the acreage which their neighbors are preparing to plant. For most sections in Southern States the safest course will be to attempt to produce only about as many sweet potatoes as can usually be disposed of at a profit in local markets. The present margin of profit on shipments to northern markets is hardly likely to be repeated for the 1926 crop.

CABBAGE

With the small remaining supply of old cabbage cleaning up rapidly at high prices, producers of early cabbage should be in a favorable market position, at least during the opening months of the season.

There is danger that present high prices will induce growers in the late cabbage States to increase their acreage too heavily. If there should be a 10 per cent increase over the 1925 acreage, plantings would about equal those of 1924, a season of very low prices. With the same acreage as in 1925, or not more than a 5 per cent increase, and with normal growing conditions a crop should be produced which probably can be marketed at fair prices.

Growers in the early and intermediate States have been more erratic in their planting than growers in the late States, with consequent wide variations in production and sharp fluctuations in prices. Yearly adjustments to offset heavy or light production in the late States are desirable, but plantings are usually too heavy if prices for late stock are high. Growers should obtain information from competing sections before deciding acreage to plant.

ONIONS

The total acreage of onions in late States can not be appreciably increased without the probability of a crop large enough to result in prices so low as to be unsatisfactory. The marketing outlook for onions during the next few months is not encouraging.

The slump in prices in January was caused largely by unusually heavy imports from Spain and occurred in spite of a domestic production 5 per cent lower than in 1924. It now seems probable that the late onion crop will not clean up before the crop in Texas, California, and Louisiana, which promises to be larger than last year, moves to market. Careful grading and reasonable opening prices should materially aid in accomplishing the best possible distribution of the new crop.

Growers in late States face a rather puzzling situation. Unless a continuation of the January slump in prices causes a general cut in acreage an increase is likely to occur. This seems undesirable. It is very probable, however, that growers in Indiana and Ohio, whose acreage was cut so severely by freezing weather after planting in 1925, will tend to plant normal acreages this year. Should their plantings equal the average of the three-year period ended in 1924, and other States maintain their 1925 acreages, the 1926 acreage would exceed the heavy acreage of 1922 by almost 5 per cent. This would spell disaster under average growing and marketing conditions.

In 1925, New York and Idaho growers increased their plantings about 1,000 acres over those of any of the four years, 1921 to 1924. In contrast to this the increase over 1924 of around 800 acres in Massachusetts and 1,000 acres in California represented a partial return toward acreages maintained in 1921, 1922, and 1923. Growers, especially in these four States, should gauge their plans considerably upon the extent to which plantings in Indiana and Ohio tend back toward those in recent years prior to 1925.

BEANS

The total production of all classes of dry edible beans in the United States in 1925 is estimated at about 19,000,000 bushels, or about 4,000,000 bushels greater than in 1924. The 1925 crop, however, contains an unusually large percentage of damaged beans. The increase in the supply of beans suitable for food appears from recent inquiries to be about 2,500,000 bushels more than in 1924.

Prior to the World War our domestic consumption was about 12,000,000 bushels. Since then the consumption of beans in the United States has increased materially. Last year our requirements for all purposes were around 15,000,000 to 16,000,000 bushels.

The production of white pea beans in Michigan and New York was about 7,225,000 bushels in 1925, an increase over 1924 of about a million bushels. The increase in production would have been much greater except for the abandonment of 10 per cent of the planted acreage in Michigan and 25 per cent in New York. However, the unfavorable weather at harvest time so damaged the beans that the recleaned or hand-picked stocks apparently will be about the same as last year, roughly 5,500,000 bushels. With an average season and average yield and quality, a planted acreage in these two States in 1926 equal to 80 per cent of the acreage planted in 1925 would produce a crop of cleaned beans about equal to that of 1925, which appears to be sufficient to meet present demands.

Up to this year, the increasing production of Great Northern beans in Idaho, Montana, and Wyoming has been readily absorbed at prices equal to or higher than those prevailing for pea beans. The production in 1925 of almost 2,000,000 bushels, or 30 per cent more than in 1924, resulted in a farm price about 25 per cent lower than in December, 1924. This decline should be sufficient warning against too rapid expansion in the acreage of this type.

The pinto bean is largely a dry-land crop, with production dependent upon weather conditions. The increase in production of 750,000 bushels, or 44 per cent, was due to favorable yields in Colorado, despite reduced acreage. The significance of the consequent heavy decline in price, should be considered by growers of pintos who have a choice of crops. The production of red kidneys was somewhat curtailed in 1925, owing to the severe losses in acreage, yield, and quality in New York and as a result prices have risen moderately.

The production of most California varieties is much less than usual, although larger than in 1924. Blackeyes are double their usual production in that State.

CITRUS FRUITS

The outlook for the producers of citrus fruits is not reassuring. Future production depends chiefly upon what percentage of present plantings is brought into full bearing. No further plantings should be made without careful consideration of the following facts. In Florida only about 53 per cent of the orange trees and 78 per cent of the grapefruit trees have reached bearing age. Furthermore, less than two-thirds of the bearing trees have reached full production. In Texas there is a large acreage of grapefruit not yet in bearing and many new trees are being set out this year. In California the number of young orange trees is only sufficient to maintain bearing acreage at about the present level. There has been some increase in the consumption of lemons, but if imports from Italy amount to over 3,500 cars, as they have during most recent years, the present acreage in California in years of full crop will produce more lemons than can be marketed in the United States and Canada at prices satisfactory to growers.

Taking the country as a whole the prospect for the next few years is for a very heavy increase in production of oranges and grapefruit with a downward trend in prices. This trend seems likely, even though there may be some increase in per capita consumption and in spite of some reductions in Florida acreage caused by the subdivision and neglect of groves during the recent real-estate activities. The recurrence of severe freezes like those experienced in years past would substantially alter the present prospect.

APPLES

From a long-time viewpoint, apple growers appear to have turned the corner, even though the present price situation is not particularly satisfactory. With the decrease in bearing trees as shown by the last census figures, growers can expect marketing conditions to be reasonably satisfactory during the next 10 to 15 years. In the Eastern and Central States it appears that if the commercial producing acreage is held at the present level reasonably satisfactory returns may be expected over a period of years. In the Northwest, where trees reach bearing age more quickly, there seems to be little reason for increasing the bearing acreage at present, though apples probably will continue to be profitable in most sections that now yield adequate returns.

In considering the present situation it should be remembered that profits from apples since 1913 have not been sufficiently great to stimulate plantings. The number of bearing trees is steadily decreasing, the 18 leading apple-producing States showing a decrease of 6,500,000 trees, or approximately 8 per cent, during the last five years, according to preliminary census figures. In Eastern and Central States most of the decrease has been in scattered orchards that are either outside of the main commercial sections or are too small or too unproductive to justify the use of efficient spraying equipment. Some unproductive orchards also have been abandoned in the boxed-apple States, and the tendency has been to replace the poorer varieties in the older orchards. For the country as a whole, the number of trees not yet bearing is about the same as five years ago and is not sufficient to maintain the present number in bearing.

So far as commercial production is concerned, the decrease in the number of bearing trees in the scattered farm orchards has been more than offset by increased production in the commercial sections. The rate of increase in the commercial sections seems, however, to be slowing up, and in the boxed-apple States the point of maximum production seems to have been nearly reached.

Looking ahead, it seems that the yearly increase in population will be sufficient to take care of such increase in production of commercial apples as is to be expected from present orchards.

PEACHES

The peach industry is confronted with the problem of profitably disposing of a rapidly increasing production owing to extensive plantings of young orchards in recent years. This expansion has occurred principally in the South Atlantic States, in certain sections in the Middle West and in California. In these areas new plantings should not be made at present. In Colorado and Utah there was some injury due to winter killing last year. For the entire country, commercial production as measured by car-lot shipments has practically doubled during the last eight years.

In the North Atlantic States present acreage may well be maintained by plantings on favorable sites to replace trees which will soon go out of bearing. Growers who contemplate new plantings should exercise care in selecting locations so that climatic hazards and other risks of production will be reduced to a minimum. Marketing conditions should also be given careful consideration.

The selection of proper varieties is important in planting new orchards. The Elberta is the leading commercial fresh peach variety and is adapted to practically all sections of the country. As it begins to ripen in the South it is found on practically all the important markets, and from then during the remainder of the season. Unless a satisfactory local market seems assured, such commercial plantings as are made should include only a few standard varieties.

There is an opportunity for improvement in peach-marketing conditions in many sections in the use of accepted standards of grade and pack.

GRAPES

The grape outlook is dominated by the tremendous production in California and it is generally agreed that new plantings should not be undertaken in that State at present. Around 10,000 cars were left on the vines in California last season because of frost injury and poor market conditions, and returns during the last few seasons generally have been unsatisfactory.

Grape production in California is on the increase and probably will continue upward for a few years more without additional plantings. Total car-lot movement for the country in 1925 was 80,000 cars, or an increase of 110 per cent during the last 5 years. Of this 1925 movement, California supplied 93 per cent, even though weather conditions were unfavorable during the harvesting season. The car-lot movement from California during 1925 was one-fourth greater than in 1924, although for the entire country it increased only 13 per cent. The almost total crop failure in Michigan from frost, and the lighter production in New York (the two States leading in the production of the native type of grape), accounted largely for this situation. The heavy increase from California is due to extensive plantings in recent years and to the fact that one-third of the crop of the varieties normally grown for raisins has been shipped fresh during the last two years.

In favored localities in States where the native type of grape is grown, and where table grapes of high quality can be produced for local markets, it is probable that some increase in plantings can be undertaken with prospects of fair returns. Prices have varied during the last few seasons as to location and crop conditions, but they have not been sufficiently high to cause more than a moderate amount of plantings in most sections. Acreage has remained fairly constant, on the whole, with the exception of the Ozark district, where plantings totaling around 15,000 acres have been made in the last few years.

The industry in the Ozarks, although comparing with Michigan in acreage, is as yet in an experimental stage and it is too early to forecast developments. The car-lot movement from the Ozark district increased from 344 cars in 1924 to 487 cars in 1925, and with favorable weather conditions may be doubled in 1926. The movement from this district is earlier than from other sections producing the same type of grape, and the status of the grape-juice industry probably will play an important part in its development.

This development and the heavy supply from California are factors to be considered by all eastern growers. Although the California grapes are of a different type, and the bulk of the crop moves as juice stock, all growers of the native type of grapes face keen competition from the California product.

CANTALOUPE AND WATERMELONS

Conditions during the last season indicate that the cantaloupe acreage in 1926 in the early producing States may be maintained upon the same basis as that harvested in 1925, or perhaps slightly increased, with prospects of reasonably satisfactory returns. Growers in most intermediate and late sections however, will probably receive unsatisfactory returns unless the acreage is reduced from that harvested in 1925. Watermelon acreage can be maintained on about the same basis as last year with prospects of fairly satisfactory returns to growers.

Total cantaloupe production in 1925 was slightly larger than in 1924. The acreage in the early States in 1925 however, was reduced about 16 per cent

over that harvested in 1924, owing to unfavorable weather in some sections and to unsatisfactory returns the previous year in others. This resulted in a lighter production and a generally profitable season to those having high-quality stock. In contrast to this, an increase of 15 per cent in acreage over that harvested in 1924 in the intermediate and late States, resulted in a production almost one-fourth heavier than in 1924 and generally in very unsatisfactory returns to the growers. Southern growers should guard against overexpansion, and they, with eastern growers, would no doubt benefit from better grading and packing. Favorable soil and climatic conditions, varieties, acreage in competing sections, and nearness to markets are important factors to be considered in planning acreage.

There have been no outstanding shifts in watermelon acreage among various areas in recent years. Production at fairly satisfactory prices is apparently closely adjusted to consumers' demand and even a relatively small increase in acreage with normal yields in most commercial areas would probably result in a considerable decline in prices from those of 1925.

PEANUTS

If imports continue light for the remainder of the year, last season's acreage of Virginia-type peanuts can be maintained with a reasonable prospect of higher returns to the grower. But, if conditions in China clear up and 1926 imports equal those of 1925, holding acreage at the 1925 level very likely will mean prices only slightly higher than the unsatisfactory prices of this season. In any event, the probability of a light carry over is a favorable factor. In the fall of 1925 there was a substantial carry over from the crop of the previous year and also of Chinese peanuts of the Virginia type. Not only has the old carry over been disposed of, however, but shipments to date of cleaned and shelled stock from the Virginia section have been 40 per cent above those of last season for the same period. Prices to the grower on February 2 were about 20 per cent above the season's low point.

If the 1925 acreage of the Spanish and Runner varieties harvested for nuts is maintained or slightly increased this spring, satisfactory returns to the grower are reasonably assured. There should be no carry over problem for these types this fall as there was the year before. As a matter of fact it was the carry over from the 1924 crop rather than the size of the 1925 crop which accounted for the low opening prices last fall. Farmers' stock has moved to market so rapidly, however, that many shellers do not expect to be able to run their mills throughout the year. As the shortage has become apparent, prices have advanced sharply. On February 2 ruling quotations on Spanish-type farmers' stock were 40 per cent higher than a month before.

CLOVER AND ALFALFA SEED

Inasmuch as red and alsike clover seed stocks are considerably below normal and prices are higher than normal, the production of these seeds should be increased. On the other hand the production of sweet clover and alfalfa seed might well be curtailed because stocks of these seeds are much larger than normal and prices generally lower.

The attention of farmers who wish to sow alfalfa or sweet clover for hay, pasture, or soil-enriching purposes is called to the fact that an ample supply of good seed is available at prices that are the lowest since 1922.

Production of red clover seed during the last three years has been much below normal largely because of unfavorable weather conditions. Basing consumption of red clover on estimated (from all clover) production plus imports minus exports, the average annual consumption for the last 10 years has amounted to about 72,000,000 pounds. The 1924 and 1925 crops fell 30 to 40 per cent short of this and the deficiency has been met in part by large imports from Europe, particularly from France. The American farmer apparently is willing to pay considerably more for domestic than for imported red clover as domestic seed at present is selling at a premium of about 6 cents a pound over the price of imported seed of similar quality.

The average annual consumption of alsike clover seed during the last 10 years is estimated at 24,000,000 pounds. Production during the last three years was much below normal. Demand last year was unusually good and carry over at this time both in the United States and Canada is the smallest on record. Prevailing prices are the highest since 1921.

The large 1925 crop and carry over of sweet clover probably are greater than can be absorbed this year, notwithstanding the fact that the demand has been increasing steadily in recent years. Sweet-clover seed production has extended to a number of sections that heretofore have been obliged to ship in much or all of their seed from other sections.

The 1925 crop of alfalfa seed, amounting to 48,000,000 pounds, was the largest one on record. The carry over was larger than usual. The available supply for spring and fall sowing, therefore, is much larger than usual, notwithstanding small imports. Relatively higher prices for some other seeds may cause substitution of alfalfa for these seeds. Furthermore, favorable weather in some sections that were unable to sow the usual acreage last year because of drought or for other reasons may increase the demand for alfalfa seed. Unless the demand, however, is much greater than expected there is likely to be a considerable carry over of common alfalfa seed. Carry over of Grimm and other hardy varieties or strains may be a little larger than usual.

TOBACCO

Cigarette types are relatively in the most favorable situation of the various classes of tobacco, with cigar types second, and the smoking, chewing, and dark export types last.

Bright flue-cured is the most important of the cigarette types and is an important export type as well. Production and stocks are on a high level. The stocks of bright flue-cured leaf in the hands of manufacturers and dealers on January 1, 1926, were reported by the Bureau of the Census at 603,089,699 pounds, which has been exceeded by only one January stocks report—that of 1924. Production in 1925 amounted to about 553,000,000 pounds, exceeded only in 1920 and 1923. Exports of this type during the early part of 1925 ran behind those of 1924. Disturbed conditions in the Chinese tobacco trade have had a bad effect on exports of leaf and cigarettes alike, but there was marked improvement in November and December. Total exports for 1925 show an increase over the previous two years.

The outlook for 1926 will depend upon the further growth of the cigarette industry. Manufactures of cigarettes in 1925 exceeded those of 1924, and there is no apparent indication that the industry will not continue to grow. Exports in 1926 should be about on a par with those of the last two years.

On the other hand, a part of the strength of flue-cured tobacco at present is probably due to the relatively short crop of Burley, another cigarette type. The general situation indicates that fairly remunerative prices may be expected in 1926 if the crop is no larger than that produced in 1925.

BURLEY

The supply of Burley tobacco continues large, notwithstanding the fact that the production of Burley in 1925 was about 10 per cent below that of 1924. At present cigarette grades are most in demand, and are holding up the general average price per pound. The stocks of Burley leaf on October 1, 1925, were the highest October stocks on record—459,000,000 pounds. Added to the estimated 1925 production, the available supply on that date amounted to more than 730,000,000 pounds, 3,000,000 pounds in excess of the previous high of October 1, 1924.

Burley growers may easily be misled by present prices. The 1925 average yield per acre is estimated at 794.3 pounds compared with 863.8 pounds in 1924. Although the 1925 yield was unusually low, the chances are that the yield in 1926 will be more nearly in line with the usual yield for this type, around 850 and 860 pounds, which on the same acreage as last year would make an increase in production of 20,000,000 to 25,000,000 pounds. Any increase in acreage therefore is inadvisable.

MARYLAND TOBACCO

Maryland tobacco presents the unusual situation of declining prices accompanying declining supply. Since 1920 the production has been on a low basis, although that for 1925 was more nearly in line with the average. The trend of stocks has been steadily downward, dropping from about 29,000,000 pounds on October 1, 1921, to about 17,000,000 pounds on October 1, 1925. The supply on October 1 (stocks plus current crop) was about 42,000,000 pounds. From 1917 to 1922 the supply ranged from 46,000,000 to 45,000,000 pounds. Although

at least three-fourths of the Maryland tobacco in former years was exported, its use more recently in cigarette blends has reduced exports to about one-half.

Two possible causes exist for the present situation in Maryland leaf. High prices during and following the war resulted from the competition between export demand and domestic cigarette manufacture. This has probably turned export demand toward less expensive types of tobacco of either American or foreign production. Lack of uniformity and care in grading and packing has had a further influence. It also seems probable that the supply of this type in grades suitable for cigarette manufacture is insufficient to maintain a dependable market. Improvement in the price situation would appear to depend upon the production of a larger percentage of cigarette grades and upon greater attention to grading and packing for export trade.

CHEWING, SMOKING, AND SNUFF TYPES

The chewing, smoking, and snuff types comprise the dark-fired, dark air-cured and Virginia sun-cured types. Almost without exception they have suffered decline in prices for the 1925 crop compared with 1924, notwithstanding the fact that the supply of the group has declined about 22 per cent during the last two years. The demand for chewing and snuff, if not actually declining, is at least not growing. Furthermore, the greatly increased production of similar types of tobacco in foreign countries has made serious inroads on the foreign market for the American dark-fired types. Italy, which in the past has been an annual purchaser of 38,000,000 to 40,000,000 pounds of dark-fired tobacco, is not only producing practically all of its own tobacco, but to some extent is competing with American leaf in other foreign countries. Great Britain has greatly stimulated production in its colonial possessions by giving them the benefit of differential import duties. Also, in practically all countries the cigarette habit is taking the place of other forms of tobacco use. The result of these influences is shown by the declining exports and lower prices paid to growers. Green River exports show an increase over 1924, and the present low prices are partly due to the poor quality of the crop.

The prospects for improvement in either foreign or domestic demand are far from encouraging. Rather, it is logical to expect a further decrease in market needs, at least until such time as new markets can be found and developed. It is still true, however, that wrapper grades of dark-fired tobacco are bringing remunerative prices, but unfortunately only a small percentage of the crop runs to the higher grades.

Two objectives should therefore be kept in mind by the growers for 1926—to readjust their total production in accordance with the undoubted decrease in demand, and strive for betterment of quality.

One Sucker has become one of the least profitable types to grow. The consumption during 1925 reached the lowest point since the war, and stocks are higher than for several years past. Its foreign trade is unimportant, the principal use being for plug, twist, and snuff. This type is therefore being crowded out by the swing of popular taste to cigarettes.

Virginia sun cured, a plug type, is likewise on a decreasing scale, both of production and consumption. Stocks are the lowest on record, and a short crop was produced in 1925.

Virginia fire cured has maintained a high average price per pound compared with western fire-cured types, notwithstanding the fact that consumption has been on a downward scale, and stocks are unusually high. The factors which are adversely affecting the western types may be expected ultimately to operate also against Virginia dark.

CIGAR TYPES

The cigar trade has lost ground in recent years because of the increasing popularity of the cigarette. The most significant signs pointing toward its revival appear to be a noticeable trend toward 5-cent cigars and a prospective reduction in the tax on cigars.

The last year has witnessed an increasing number of new nickel brands, made possible in part by economies in manufacture. Class A cigars, selling at 5 cents, show slightly increased sales, whereas class B, two for 15 cents, have decreased, and class C, 10 and 15 cents, have remained about the same. With further attention to the production of low-priced quality cigars there should develop a broader market for cigar leaf, at fair prices, especially of the types grown in Pennsylvania, the Miami Valley, and Wisconsin.

In the Connecticut Valley, the situation of the tobacco growers has become acute. Abnormally large stocks have accumulated and the price per pound has declined sharply. Stocks are said to consist to a large extent of the upper middle grades such as go into class B cigars, two for 15 cents, the sales of which are declining. Reduction of production in this area appears inevitable.

SUGAR

Domestic sugar-cane and sugar-beet producers may reasonably expect no further general decline and possibly some improvement in prices for the 1926 crop. The extremely low price of sugar during the last year makes it unlikely that any material expansion will be made in foreign cane areas in the near future.

The present Cuban cane-sugar crop was estimated by Himely at 5,928,000 short tons. Other recent private estimates have ranged from 5,700,000 to 6,000,000 short tons, compared with 5,812,000 short tons officially reported for the previous season. The large crop of 2,531,000 short tons in Java in 1925 is not likely to be duplicated in 1926 because of more or less severe drought. In Europe the 1925-26 beet-sugar crop is estimated at 7,930,000 short tons, compared with 7,729,000 short tons the previous season. In the United States the combined beet and cane sugar production from the 1925 crop is equivalent to about 1,160,000 short tons of raw sugar, compared with 1,260,000 short tons in 1924. World production of sugar for the season 1925-26 is estimated at 27,000,000 short tons, compared with 26,500,000 short tons for the previous season, an increase of about 2 per cent.

Commercial reports indicate an increase in sugar stocks September 1, 1925, in the United States refining ports, and in Cuba, France, Belgium, Great Britain, Czechoslovakia, Germany, and the Netherlands of nearly 800,000 short tons over September 1, 1924.

Consumption has been increasing during recent years in the United Kingdom, continental Europe, and the United States, but the per capita consumption in Europe is considerably below that of Australia and the United States. In 1925 the United Kingdom consumed less sugar than in 1913, and Germany is using much less sugar than 10 years ago. Apparently world consumption may be expected to increase and may equal or even exceed the coming season's productions.

RICE

Rice production has exceeded consumption in the United States and insular possessions for a number of years; consequently rice growers in the Southern States and California are in competition with producers in other exporting countries, and the price of rice in the United States is greatly influenced by the size of the world crop. The price depends partly, however, upon domestic demand conditions. The domestic demand for rice in this country has increased this year. Notwithstanding a slightly larger crop and decreased exports the price on December 1 was 11 per cent above that of the previous year at the same date. The short potato crop with consequent high prices is probably a factor in helping to increase rice consumption this year. This influence is not likely to continue next year.

A tendency towards increased acreage in the principal rice-growing countries is in evidence, and the prevailing high prices for rice will doubtless be a strong incentive toward an increase of acreage in the United States. Farmers in the rice-growing sections should, therefore, consider the situation carefully before deciding upon any increase in their rice acreage.

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THE AGRICULTURAL OUTLOOK FOR 1927

Prepared by the Staff of the Bureau of Agricultural Economics

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PURPOSE OF THE OUTLOOK REPORT

This outlook report is designed to give to farmers, prior to planting and breeding time, information as to what the probable conditions will be when their products are ready for market. The statement on every commodity is based on all available information which will be of assistance to producers in so planning their production programs and balancing their different lines of production as to obtain the greatest returns and to avoid so far as possible the overproduction or underproduction of any commodity.

The statements necessarily present the national point of view, and should be carefully considered by producers in every region to determine whether the general suggestions apply to a greater or less extent to their conditions. Since conditions vary so widely in different parts of the country, no blanket recommendation that will be uniformly applicable to all the producers of a commodity can be made.

In making his plans, each farmer must bear in mind not only the probable conditions of the market for the different commodities he can produce but also the conditions under which he is farming and the characteristics of his own farm. Both the requirements for production and probable returns from the product should be considered in making decisions as to what to produce and how much to produce.

This is the fifth annual outlook report that has been issued by the United States Department of Agriculture. Considering the recent development of the work and the many points that must be considered, the statements regarding probable trends have been very near the subsequent developments. In even the earliest reports nearly 90 per cent of the outlook statements of probable changes on individual commodities turned out to be correct; and, in the case of reports for both 1925 and 1926, subsequent events proved that 95 per

cent of the statements anticipated the changes that took place. It is the intention of the Bureau of Agricultural Economics to concentrate on the collection of additional economic information, both in this country and abroad, and the analysis of statistical data needed to furnish a better basis for subsequent reports.

In the preparation of this report the staff of the Bureau of Agricultural Economics has been given valuable assistance by numerous representatives of other bureaus of the department, and by the representatives of 25 State colleges of agriculture who were in Washington at the time the report was being prepared.

SUMMARY OF THE OUTLOOK

A favorable year for livestock producers is in prospect for 1927 but with an average season a continuation of relatively low returns from most cash crops is probable unless acreages are reduced.

DOMESTIC DEMAND

Domestic demand for farm products of the 1927-28 season is not likely to be materially different from the present. The domestic demand for the 1926 farm production yet to be marketed during the first half of 1927, is likely to continue less favorable than that of either the first or second half of 1926.

FOREIGN DEMAND

Some improvement in the purchasing power of foreign countries for agricultural products of 1927 may be expected, but it is probable that larger foreign production of breadstuffs, fruits, and animal products will reduce foreign demand for our exportable surpluses of these products.

FARM LABOR AND EQUIPMENT

A slightly larger supply of farm labor will probably be available in regions adjacent to industrial centers and wages may be lower. No material changes in the price of farm machinery and building materials may be expected. Wholesale prices of fertilizer are lower than last year.

COTTON

Cotton production must be curtailed drastically the coming season to restore the balance between consumption and supply at remunerative prices to growers. With average yields, a reduction of about 30 per cent in acreage appears necessary to give growers the best gross returns for the 1927 crop. The chances for profitable production will be best if the acreage is small, if costs are held to a minimum, and if efforts are made to improve the quality of the crop.

WHEAT

Hard spring and durum wheat growers can scarcely expect to receive returns for the 1927 crop similar to those which have prevailed for the 1926 crop, especially if production should be materially increased.

FLAX

Flaxseed prices for the 1927 crop are unlikely to be higher than at present. Where flax is profitable at present some increase in acreage may be made.

RYE

Reports indicate a reduction in the rye area seeded throughout the world, but with average or better than average yields, the production in 1927 may make the total world supply equal to or greater than it was during the past year, so that rye prices are likely to show little change from the present.

RICE

The too rapid expansion of rice acreage has resulted in a production in excess of a demand based on satisfactory prices. Some reduction in acreage rather than further increase appears advisable.

CORN

The demand for the 1927 corn crop is expected to be little if any greater than for the 1926 crop. With probable increases of corn acreage in the South and with no probability of increased demand for corn in 1927, corn growers are faced with the prospect of lower prices unless acreage is substantially reduced.

OATS AND BARLEY

Oats and barley for feed are unlikely to be in greater demand during the coming year as compared with 1926. The market value will be determined largely by the supply of these and other feed grains.

HAY

Hay requirements are not likely to be increased because the number of hay-consuming animals continues to decrease.

Unless livestock production is held at about the present level, allowing for increase in population from year to year, present prices can not be maintained.

BEEF CATTLE

With beef cattle marketings in 1927 probably materially less than in 1926, and the demand for beef maintained, prices of slaughter and feeder cattle are expected to average somewhat higher than in 1926. On the whole, cattle prices are expected to continue the upward price swing begun in 1922.

HOGS

Hog producers have a favorable outlook this year. The market supply of hogs probably will be little if any larger than in 1926, and domestic demand is expected to continue strong. Hog prices are likely to be maintained near the 1926 level. Prices now prevailing can be continued through 1928 only if farmers hold down hog production to the level of the past two years.

SHEEP AND WOOL

Sheep production is expected to continue to increase moderately, and lamb supplies this year may be slightly larger than in 1926. Strong consumptive demand for lamb is expected, but feeder demand may be less active than last year in some sections. The wool market appears to be firm, with no marked price changes in sight.

MOHAIR

The present situation in the mohair market does not warrant further expansion of production at the present time.

DAIRY PRODUCTS

The dairy industry is on a stronger basis than a year ago. Dairymen are likely to have a moderately favorable spread between the price of feed and the price of dairy products.

POULTRY AND EGGS

Poultry and egg producers in most sections of the country may expect a fairly satisfactory year, although perhaps not as profitable as 1926. A moderate increase in egg production and no decrease in poultry marketings are expected.

HORSES AND MULES

Horses and mules are in sufficient supply to meet farmers' needs during the coming season, but the number of young stock is only large enough to replace about half the number of work stock now on farms. Farmers can not expect to replace their work stock 8 to 10 years from now at the low level of present-day horse prices.

POTATOES

Potato growers should guard against the danger of overplanting and keep close watch on acreages being planted in competing States.

SWEET POTATOES

Sweet-potato acreage should be increased only by growers who need the increased supply for their own use, who can dispose of the crop on their local markets or who can afford to produce a crop at relatively low prices.

CABBAGE

Any increase in cabbage acreage over 1926 is likely to result in increased production with accompanying lower prices.

ONIONS

Onion acreage should be reduced sharply to prevent an excessive market supply. The outlook for the Bermuda type appears fairly good.

BEANS

Bean acreage should be reduced under last year's area to prevent an excessive supply, varying with the type of bean grown.

FRUITS

The trend of fruit production is upward and expansion of acreage would not be justified except under unusually favorable conditions; however, a crop of fruit as large as that of last year, which was caused by the uniformly favorable weather, is not likely to occur very often.

CITRUS FRUITS

A continuing increase in the volume of both oranges and grapefruit may be expected which makes the outlook unfavorable for additional plantings for some time.

APPLES

The apple industry is approaching a more stabilized condition but, with an average crop, prices will undoubtedly be higher next season. Commercial plantings are hardly justified at present except where local production or market conditions are unusually favorable.

PEACHES

New commercial plantings of peaches should not be undertaken in the Southern States since a large number of young trees have not yet come into bearing and production is rapidly increasing.

GRAPES

Grape production is expected to continue heavy, and new vineyards should not be set out except where conditions are extremely favorable.

STRAWBERRIES

Strawberry returns per acre, if yields are average, probably will be considerably less in 1927 than was the average for the past two years. Acreage has increased considerably and caution should be exercised by growers who contemplate increasing acreage this spring.

CANTALoupES

Cantaloupe acreage should be cut in the early-shipping region. In the mid-season and late-shipping States there should be the same acreage as last year or a slight reduction should be effected.

WATERMELONS

Watermelon acreage should be reduced in 1927 in order to prevent a repetition of the generally unsatisfactory prices received last season as a result of extremely heavy production.

PEANUTS

Peanut acreage of the large-podded variety, equal to last year's is likely to mean another year of unsatisfactory prices to growers. As much as 25 per cent more land might be planted to the small and medium podded types than in 1926 with reasonably satisfactory prospects, although market prices may be lower.

CLOVER AND ALFALFA SEED

Red and alsike clover seed production should be increased because of depleted stocks and likelihood of high prices next fall. The area of alfalfa and sweet clover for seed should not be increased, as present production is more than ample to take care of requirements.

TOBACCO

Tobacco of the cigarette types is in increasing demand, but not sufficient to stand heavily increased acreage. Producers of dark fired and dark air-cured export types are faced with increased foreign competition in a contracting market. Growers in the flue-cured region should guard against overproduction. Quality rather than quantity production is needed in the cigar-leaf districts.

SUGAR

Sugar prices seem to be trending toward higher levels, with world production below that of last year and with increasing consumption. Growers in well-established sugar-beet districts, where adequate yields can be expected, will probably find it advantageous to increase acreage up to factory capacity if satisfactory contracts can be secured.

THE AGRICULTURAL OUTLOOK FOR 1927

GENERAL AGRICULTURAL SITUATION

The livestock industries have been in relatively favorable position during the past year and they continue to represent the strength of the situation as agriculture enters the new season.

Farmers suffered some severe reduction in prices of their leading cash crops, however, notably in the case of cotton, grains, and fruit. The gross value of the principal crops, based upon prices December 1, 1926, was \$7,802,000,000 compared with \$8,789,000,000 a year ago.

In consequence the conditions in certain important producing regions have shown no improvement within a year.

The disparity between prices of farm products and the cost of industrial goods and services is greater than a year ago. Whether this trend is to continue during 1927 apparently depends in part upon how effective a readjustment is made in certain cash crop acreages and upon the character of the growing season. Production costs in certain lines may be slightly lower this year than last.

The situation is clearly such as to discourage any general expansion of agricultural production. In some areas it apparently means a greater utilization of lands for pasture and forestry.

DOMESTIC DEMAND

For the crop season 1927-28, the agricultural industry as a whole should anticipate a domestic market not materially different from the present, though possibly somewhat better. The domestic demand for the 1926 farm production yet to be marketed during the first half of 1927, is likely to continue less favorable than that of either the first or second half of 1926.

The present level of business activity, industrial employment and the money income of consumers is lower than that of a year ago. The volume of output has been accompanied by a lower level of industrial employment and wage earnings particularly in the iron and steel and automobile industries. The building industry has been somewhat less active during the past nine months than in the same period a year ago, as is indicated by the total value and

volume of contracts awarded for the entire country. Contemplated projects or the potential demand for the building construction also appears to be declining. Furthermore, income from agricultural production during the present season is at least 5 per cent below that of last year, as a result of lower prices. The drop in farm prices, however, is largely due to increased supplies rather than to lower domestic demand.

Money incomes of consumers and their ability to buy goods are now lower than a year ago, and may be expected to continue so for several months although without any drastic decline. The latter might be a probability were retail prices higher than a year ago and were the present business situation marked by financial or credit stringency. In fact, credit for commercial purposes appears to be ample and with unsound factors (such as heavy inventories) not apparent, credit should continue to be available for productive purposes at reasonable rates. Industrial prices, however, have recently tended downward and have affected profit margins adversely, a condition which might check the tendency for commercial enterprises to take full advantage of the available cheap credit in the immediate future.

Should the present favorable money conditions continue well into the present year, a domestic demand for the 1927-28 farm production moderately better than the present may be anticipated. The declining level of industrial production may tend to stabilize industrial prices and with available credit would result in increased employment and manufacturing output in the second half of 1927.

The contribution of agriculture during 1927-28 to the national buying power promises at best to be no greater than that of the present season and it may very likely be somewhat less.

Balancing agricultural prospects against the somewhat better prospects for other industries (the latter providing by far the greater portion of consumer buying power), it appears that there may be a moderately better domestic demand for the 1927-28 season, but not sufficient to warrant expansion of production without regard to the greater consequences of increased supplies. Declines in agricultural prices during 1926 were caused, not so much by the somewhat lower buying power of consumers, as by increased supplies of cash crops. There are no indications of such an increase in domestic demand in the immediate future as to absorb even present farm production at satisfactory prices.

FOREIGN COMPETITION AND DEMAND

The purchasing power of foreign countries for agricultural products of 1927 will probably be equal to or greater than the demand for the products of 1926. Improved economic conditions in Great Britain and Germany, our most important markets, may more than offset depression in other European countries. It seems probable, however, that larger foreign production of breadstuffs, fruits, and animal products next year will reduce foreign demand for our exportable surpluses of these products. Well-sustained exports of tobacco with increasing proportion of cigarette types may be expected. Foreign demand for cotton goods is likely to be maintained and possibly increased, but heavy foreign purchases of cheap cotton from the 1926 crop may diminish the foreign takings of the crop of 1927.

In attempting to estimate the strength of foreign markets for our agricultural products in 1927 it is necessary to give consideration to general economic conditions and purchasing power in consuming countries and to competing agricultural production outside of the United States. Favorable features of the foreign outlook situation are: (1) A prospect of a higher rate of business activity and greater purchasing power in Germany for 1927, and (2) recovery of industry and improving economic conditions in Great Britain. Unfavorable features are: (1) Reduction of business activity in Italy and France and continued depression in certain smaller European countries, (2) possibility of larger bread grain, and fruit crops in Europe than in 1926, when the crops were generally poor, with some increase in animal production, (3) prospective larger area in world grain crops, and (4) further world-wide expansion of the dairy industry.

Industrial activity in Great Britain, which was seriously retarded in 1926 by the disastrous coal strike, is showing considerable improvement, but the country will feel the effects of the depression for a few months more. With normal supplies of coal and more tranquil labor conditions there should be a

considerable revival in manufacturing activity and unemployment should decrease. In the textile industry the American cotton section is still working on short time, but activity is expected to increase. There is some optimism on account of the prospect of a revival of demand from India for cotton goods and decreasing competition from Italy and France in near Eastern and Latin American countries.

The German economic situation has shown a remarkable improvement during recent months and this recovery is likely to be maintained. German coal and steel industries have been stimulated by the English coal strike, and it remains to be seen how these industries will adjust themselves when this favorable influence is completely removed. The organization of international cartels, of which the Continental Steel Cartel is by far the most important, will undoubtedly have a stabilizing influence. During the current season Germany has been our best market for cotton, taking greater quantities than Great Britain, and the mills are reported to have a satisfactory volume of unfilled orders. On the whole, the improvement of German industry and increasing purchasing power should create a good demand in that country for agricultural products.

In France the appreciation of the franc has already influenced adversely both domestic and export business and it will undoubtedly have a serious effect for some time. In iron and steel the domestic demand has temporarily almost ceased and unemployment is growing. Cotton buying, which has been on a satisfactory scale during the past year, is tending toward a hand-to-mouth basis on account of the currency uncertainty. Should the currency be stabilized in 1927 as some believe likely, there will still be considerable interruption of business during the adjustment period. On the whole, it is likely that France will be a less satisfactory market for agricultural products than in 1926.

The outlook in Italy is even less satisfactory than in France. The increase in gold wholesale prices and the appreciation of the lira have weakened the country's export advantage and unemployment may be much more serious than in France. There is a marked depression in the cotton industry with poor prospects for new foreign business.

In Belgium the stabilization program of the Government has evidently been successful and there seems to be optimism as to future conditions. Readjustments which must follow stabilization, however, are expected to cause a temporary depression and probably to curtail imports. Denmark and Norway are undergoing depression and no immediate improvement in economic conditions is expected.

Poland has recently profited greatly by the British coal strike. It is now faced with the problem of finding markets for industrial products. The most natural market is Russia and the scarcity of capital in both Poland and Russia will make an expansion of trade difficult. The textile industry is in a severe slump and a revival will depend largely upon conditions in Russia.

Czechoslovakia and Austria, which depend largely upon conditions in Germany and the Balkan States, appear to have a favorable outlook for 1927. With low cotton prices, Czechoslovakia will probably import more cotton than during the past year.

In spite of the extremely uncertain political conditions prevailing in China the exports of agricultural products from the United States to that country were materially larger in 1926 than in 1925. The increase in the exports of tobacco to China was particularly noteworthy. Unless the situation becomes acute in Shanghai and the northern ports, the unsettled conditions are not likely to affect materially the demand for such agricultural products as China takes from the United States. Japan also took more agricultural products from the United States in 1926 than in the preceding year. The flour milling and cotton manufacturing industries are now somewhat depressed and it seems probable that Japanese purchases of American cotton in 1927 may be less than in 1926.

Foreign competition in wheat production is likely to be about as strong as it has been last year with some reduction in the demand from importing countries. Wheat areas in Argentina and Australia are likely to be maintained if not increased and, should weather conditions permit, the spring wheat area in Canada is likely to be expanded. Larger crops are also probable in India and Russia where conditions appear favorable for seeding larger areas. The European demand on the other hand is likely to be reduced somewhat by a larger crop of wheat and possibly by better rye and potato crops.

The continuation of a favorable market for durum depends upon weather conditions in North Africa and southern Italy where short crops were harvested in 1926. The tendency is for competition to increase in the case of durum as in the case of other classes of wheat.

With easier credit and improving economic conditions the United Kingdom and Germany will probably continue to buy large quantities of cotton so long as prices remain at a low level and there may be some increase in demand for cotton goods. Foreign consumption in general, however, is not likely to increase so rapidly as takings, so that stocks may be considerably increased at the end of the present season. This may have the effect of reducing purchases through next season.

In Germany spinning and weaving activity was increasing rapidly in the closing months of 1926, stocks were not high, and a satisfactory volume of unfilled orders was reported. Reports on the Bremen raw cotton market indicate a lively demand from German, Czechoslovakian, and Austrian spinners. Russian takings of American cotton in 1927 appear likely to exceed considerably those of 1926, depending largely, however, upon the ability of the Soviet buying organization to secure necessary credits for long-time purchases. Depressed conditions in the cotton industry of France and Italy caused by the unfavorable exchange situation, will probably result in smaller takings of American cotton by those countries in 1927. Acreage planted to cotton in foreign countries during the 1927-28 season will probably be somewhat less than during the past two seasons, although this will not materially affect the world supply.

Foreign demand for American leaf tobacco of the cigarette type is increasing. The increasing foreign production of the dark types of tobacco used for chewing and smoking, together with the weakening demand, probably will make the market for that tobacco less favorable than last year. All present evidences point to a continuation of the upward trend in the consumption of cigarettes in foreign countries. Great Britain and China, the largest foreign consumers of American tobacco, both increased their takings of this type in 1926, as did several other countries.

With an apparently increasing domestic production in European consuming countries, it appears that the market for pork products during 1927 will probably be less satisfactory than last year. Increasing supplies of continental cured pork on British markets have resulted in declining prices and may continue to diminish demand in Great Britain for American-cured bacon, hams, and shoulders. A substantial increase in numbers of hogs in Germany, indicated by the Prussian census of December 1, 1926, points to heavier marketings in 1927. There is no evidence of a marked change during 1927 in the European market for American lard but the situation may be affected to some extent by increases in hog production in northern Europe, particularly in Germany, Poland, and the small Baltic countries and by the large supplies of cottonseed oil.

Evidences of maintained or increased dairy activity in practically every important butter-producing region of the world indicate heavier world butter supplies in 1927. The year 1926 has recorded a production in Denmark and the Netherlands on a par with the high volume of the past two or three years, whereas production in Germany, the new Baltic countries, Russia, and New Zealand has increased.

A relieving factor in this outlook is the prospect for some improvement in general economic conditions and better purchasing power in Great Britain. During 1926 the United States continued as a net importer of butter and cheese. The price of butter in New York for several weeks attained a margin as high as 17 cents above European prices.

Present prospects point to large exports of American apples to Germany and the United Kingdom during the remainder of the present shipping season. Stocks of continental apples in European markets are about exhausted and the damage to the Spanish orange crop will make a place for more apples. Furthermore, Australia will have fewer apples to export this year which will mean less competition in the British market during the last months of the present season. The European market next autumn will depend to a large degree upon the size of the European crop and the price of American apples. The probabilities are that the European crop will be considerably larger than last year and that American apple prices will be higher, both of which would react unfavorably upon our export trade. Dried and canned fruit will probably meet better market conditions in view of the prospect for generally improved purchasing power in Great Britain and Germany.

AGRICULTURAL CREDIT

The supply of loanable funds in the country at large is relatively abundant but farmers in many agricultural districts may find difficulty in obtaining adequate credit for production purposes. This difficulty will, in some districts, be due almost solely to a lack of satisfactory security for additional credit. In other districts the want of local credit machinery because of failures of country banks will also make itself felt. In no case will any credit difficulties that may exist be due to lack of a credit supply for the country as a whole.

In the field of long-term mortgage and bond credit the present is, on the whole, a borrower's rather than a lender's market and the interest rates on such credit show a distinct tendency downward. While in the short-time commercial money market there has been recent evidence of a slight opposite tendency, the general outlook for those with satisfactory security to offer is for lower rather than for higher rates of interest.

Changes in interest rates in the credit and investment centers are generally slow, however, in reaching the rural districts. Particularly is this true of rural districts that are remote from these centers of surplus capital. Nevertheless the downward tendency has been evident to some extent in agricultural credit rates.

Seven of the 12 Federal land banks are now operating on a 5 per cent rate, 3 are charging $5\frac{1}{4}$ per cent, and only 2 of these banks are still on a $5\frac{1}{2}$ per cent basis. A number of the joint-stock land banks have also reduced their rates of interest and this group now loans at rates varying from 5 to 6 per cent. Certain other classes of lenders or investors have followed the Federal land banks, and in a few instances have led, in a reduction of their rates on farm mortgage loans. This has been particularly true in the best parts of the Corn Belt in the Middle West, which constitute a favorite field for farm mortgage loans by life-insurance companies.

The Federal intermediate credit banks have also reduced their interest charges during the past year. The rates on loans direct to cooperative associations have been lowered from 5 to $4\frac{1}{2}$ per cent and the rates on rediscounts for agricultural credit corporations, livestock loan companies, local banks, and other credit institutions that make loans to farmers have been reduced from 5 to $4\frac{1}{4}$ per cent. Assuming that these banks continue to operate with reasonable conservatism and retain the confidence of the investing public in their debentures, there is no apparent reason why the present relatively low interest rates should not be maintained.

The rediscount rates of the Federal reserve banks stand at 4 per cent in each of the 12 Federal reserve districts, and this figure applies to agricultural and livestock paper with 90 days to 9 months' maturity, as well as to commercial paper maturing within 90 days.

Hitherto the costs of production credit, especially in the Cotton Belt, have reflected established custom as to rates and terms rather than any existing situation in the money market. The increasing number of agricultural credit corporations and livestock loan companies, organized specifically to take advantage of the rediscount facilities afforded by the intermediate credit banks, should tend to make rates on such credit reflect to some extent the abundance of loanable funds in our money centers.

FARM LABOR, EQUIPMENT, AND FERTILIZER

The prospect that industrial employment will be less in the first half of 1927 than in 1926 indicates that a slightly larger supply of farm labor will be available in those regions adjacent to industrial centers, and wages may be lower.

In the South there will undoubtedly be a tendency to use as little hired labor as possible. Those who must of necessity hire labor for this year's operations will probably obtain it at lower wages than prevailed in 1926.

In the Great Plains area the increasing use of the combine for harvesting and threshing grain should result in a more plentiful supply of labor and in lower wages during harvest.

No material changes in the price of farm machinery are to be expected during 1927 as compared with 1926.

The general level of wholesale prices of metals and metal products has been practically stationary since the early part of 1925. The general level of industrial wages has been practically constant for the past year. Since these two

factors represent the major costs of farm machinery, it appears probable that wholesale prices of farm machinery for 1927 will continue on the same level as those of 1925 and 1926 which were slightly lower than the prices prevailing in 1923 and 1924.

The prices of building materials in 1926 remained at about the same level as in 1925. With the probable decline in building activity in the cities during 1927 no increase in prices is to be expected. Possibly they will be lower.

The general level of wholesale fertilizer prices, for both materials and mixed goods, were about 5 per cent lower in November, 1926, than a year previous. At the present time the wholesale price of acid phosphate, nitrate of soda, sulphate of ammonia, and cottonseed meal are all lower than a year ago, whereas muriate of potash is slightly higher. The supply of all the principal fertilizers is plentiful and the movement slow. The expected decrease in cotton acreage and the lower wholesale price level should cause retail prices, especially for nitrates and phosphate, to be lower than last year.

COTTON

Only a drastic curtailment of cotton production during the coming season will restore the balance between consumption and supply of cotton at remunerative prices to growers. Presuming average yields, a reduction of 30 per cent in acreage appears necessary to give the greatest gross value to the next crop.

A burdensome supply of American cotton for the next 12 to 18 months seems inevitable. With an estimated 1926 production of 18,600,000 bales and a world carry over of American cotton on August 1, 1926, estimated at from 5,400,000 to 5,700,000, the supply this year totals 24,000,000 bales or more, compared with approximately 19,400,000 in 1925-26; 16,300,000 in 1924-25; and 13,500,000 bales in 1923-24.

The world's consumption of American cotton for the 12 months ended July 31, 1926, was about 14,000,000 bales. Since that time consumption in this country has proceeded at a record rate. Assuming a continuance of consumption at the same rate in this country, and allowing for some further acceleration of mill activity abroad, a total world consumption for the present year of 15,000,000 to 15,500,000 bales is quite possible. A 15,000,000 bale consumption, exclusive of linters, would equal the record established in 1915; and a 15,500,000 bale consumption would set a new world record. In either case, the probable carry over at the end of the present season would be from 8,500,000 to 9,000,000 bales, or at least 3,000,000 bales more than the year before.

Previous years of low-cotton prices have been followed by lower yields and reduced acreages. The reductions in yields in such years have been approximately 20 to 40 pounds, with a maximum reduction of 54 pounds in 1921, part of which, however, was caused by excessive weevil damage. Should an average reduction of 30 pounds take place from the yield of 187 pounds in 1926, the yield in 1927 would approximate 157 pounds, which is the average yield for the past 10 years. The maximum reduction in acreage in any one of the past 24 years was 14.7 per cent; but of those years in which there was a reduction in acreage, the average was only 10 per cent. With only a 10 per cent reduction in acreage, and a yield equal to the 10-year average of 157 pounds per acre, a production of 14,100,000 bales would result. If past relationships of prices to supplies hold for 1927, the maximum income to growers next season would likely result if production were 11,000,000 bales or a little less. For a crop of 11,000,000 bales with average yields an acreage reduction of about 30 per cent would be necessary.

The difficulties of effecting an adequate reduction of acreage under existing conditions must be recognized. In the absence of other suitable money crops, the farmer is inclined to plant as much cotton as he can finance and cultivate. Then, too, there is the tendency of many growers to leave the reduction of acreage to their neighbors. With a probable carry over of 8,500,000 to 9,000,000 bales confronting farmers on August 1, 1927, the situation is one which requires the best thought as well as the cooperation of all cotton growers. The wisdom of their decisions will determine their well-being another year.

A factor which may affect the demand for the next crop is the present high rate of domestic consumption and of exports. The larger amount of cotton which is now entering the various channels of distribution in the United States and abroad, a part of which is going into stocks, may tend to reduce the demand for raw cotton next season. This seems to have been the case in previous years of large domestic consumption and exports.

Foreign production in the 1926-27 cotton season appears to be somewhat less than in the previous season, and with increased world consumption of all kinds, stocks of foreign cotton at the end of this season will probably be less than they were the year before. Decreased stocks of foreign cottons and reduced acreages abroad are likely, however, to have only a minor effect on the prices of cotton in the United States, since domestic prices are as yet determined chiefly by the supply of American cotton. On the other hand, important price changes in this country have a decided influence on acreages in certain foreign countries, a high price here increasing their plantings and a low price decreasing their plantings.

Though boll weevil damage has been light the past two seasons, the indications at present are for increased infestation during the growing season of 1927 over that of 1926, provided weather conditions are normal for the first eight months of the year.

Severe cold weather or frequent alternations of temperature from extreme cold to warm, and vice versa during the winter months, would materially reduce the numbers of weevils living over winter. Likewise, an extended dry, sunny period coming after the cotton begins to square, would retard boll weevil propagation. On the other hand, consistent moderate winter temperatures would insure a plentiful supply of weevils in the spring, and cloudy and wet summer weather would favor weevil propagation.

Weather conditions thus far are otherwise very favorable to cotton production this coming season. There is an abundance of moisture in the soil throughout the Cotton Belt, particularly in the semiarid region, where the moisture content of the soil and the subsoil at planting time is a determining factor in the production of the crop.

Indications point to slightly lower costs of production per acre than in 1926. The cost of fertilizer will probably be somewhat lower. On the whole, less labor will be hired. The cost of keeping mules will be slightly less, because of the relative abundance of corn and forage available in most sections. The cost of farm machinery will probably be about the same as in 1926. These comprise the major items in production costs.

Important changes that are taking place in methods of cotton production should not be overlooked in considering costs. A growing shortage of cotton labor and the suitability of the more level lands to machine methods of production have encouraged the use of improved farm implements in the valleys and in the semiarid areas of the Cotton Belt. By the use of traction plows and cultivators in the western end of the belt, the acreage tilled varies from about 150 to 200 acres per man.

To the newer methods of cotton growing employed in the more level, semiarid sections, a new method of harvesting known as "sledding" has been added. Sleds were first used for this purpose in an extensive way during the last days of October, 1926. Almost immediately their use became so general in western Texas and Oklahoma as to displace rather abruptly the pickers and snappers. One man can "sled" from 2 to 3 bales of cotton a day at a cost of about \$3 a bale. The cleaning equipment on gins was immediately modified to handle sledded cotton.

Many cotton growers will no doubt experience some difficulty in obtaining the full amount of their customary credit advances. Although loanable funds exist in relative abundance and interest on the whole shows a downward tendency, lenders will doubtless be more than usually cautious both in the amount advanced and the rate of interest.

Taken as a whole, the outlook for cotton production the coming season is none too encouraging. Unless the acreage is definitely restricted or the season unfavorable, the prospect is for a large supply another year. Due in part to the planting of indifferent seed, in part to weather damage, and in part to new methods of harvesting, the grade and quality of the past two crops have not been as high as they might have been. Costs of production have tended to rise, especially in the older sections. The chances, therefore, for profitable production the coming season are best if the crop is small, the grade and staple improved, and the costs held to the minimum.

WHEAT

With the area devoted to wheat production in important wheat-producing countries expanding, spring wheat growers can scarcely expect to receive prices for the 1927 crop similar to those which have prevailed for the 1926 crop, espe-

cially if acreage should be materially increased. The relatively high prices received for the 1926 crop of hard red spring wheat have been caused by a partial failure of the crop in the United States, while the relatively high prices for durum wheat this year have been caused almost entirely by an unusually short crop in North Africa and in southern Italy, as well as in the United States.

With average yields and average abandonment, the increased acreage already seeded in the hard winter wheat-producing States would result in a total crop of hard red winter wheat in the United States in 1927 somewhat less than in 1926, but well above the 10-year average. On the other hand, indications are for a somewhat smaller crop of soft red winter wheat. While indications are that at average yields, with the same acreage, the returns from spring wheat in 1927 will compare favorably with the returns from other spring grains grown in the same area, a material increase in the spring wheat crop might result in comparative returns much less favorable.

THE WORLD SITUATION

Present prospects are that the world carry over of old wheat at the end of the year will be somewhat larger than last year, when it was low, and that there will be some increase in the area of wheat to be harvested in 1927.

Estimates of production of wheat in 1926 in all countries reporting to date indicate a world crop, exclusive of Russia and China, of approximately 3,441,000,000 bushels compared with 3,400,000,000 bushels in 1925. The collection of wheat for export and domestic distribution in Russia from the 1926 crop to date is reported to be larger than the previous year. Reports from China indicate that crop conditions have been such that there may be a slight increase in imports into that country.

This indicated increase in wheat production is not in itself sufficient to cause the world carry over on July 1, 1927, to be materially greater than it was on July 1, 1926, when it was low, but the distribution of the 1926 crop is such that there probably will be some increase in stocks in exporting countries, particularly in the United States, Argentina, and Australia, which have larger crops than last year. This increase may be partially offset, however, by smaller supplies remaining on hand in Europe. Stocks in importing countries are likely to be reduced to a minimum since their crops have been smaller than last year, and ocean freight rates have been so increased as to discourage the importation of more than may be necessary to supply their current needs. Freight rates have recently tended downward.

The world wheat area last year, outside of Russia and China, was the largest since the World War, and probably the largest ever sown. European producers are recovering from the effects of the war and our non-European competitors continue to expand their areas. The acreage in Europe, exclusive of Russia, increased from 63,800,000 acres in 1921 to 69,300,000 acres last year. Reports of winter seedings received to date indicate further increases in many European countries. Reports from Russia, Germany, and Czechoslovakia, definitely point to an increase in wheat area, partly at the expense of rye. Similar reports from France, Spain, Italy, and Hungary also indicate that fall seedings have been equal to or larger than last year in those countries. In the meantime, Canada has maintained her acreage slightly below, but close to, the high figure of 23,000,000 acres for 1921, and the area in Argentina and Australia increased from 24,000,000 to 40,000,000 acres. Weather permitting, conditions are favorable for an expansion of the wheat area of Canada.

An expansion in area increases the probability of a large crop, but the actual outturn of course depends very largely upon yields. Yields in the past year were about average, except in North Africa and southern Italy, where they were low, and in Argentina and Australia, where they were higher than the average. With average yields next year, therefore, production would be increased as area increased.

WINTER WHEAT

The area seeded to winter wheat in the United States in the fall of 1926 is estimated to be 41,180,000 acres, which is 5 per cent over the area seeded in the fall of 1925, and 8 per cent more than was seeded in the fall of 1924.

The hard red winter wheat States increased their acreage 6.5 per cent. This increase is rather significant from the standpoint of the hard spring wheat grower because of the competition between these two classes of wheat.

In the white wheat States of the Pacific Northwest, the favorable moisture and other conditions at seeding time resulted in an expansion of 15.5 per cent in the area seeded. An increase in the winter wheat acreage in the Pacific Northwest in the past, however, has not always pointed to an increase in the total area of white wheat, but generally has resulted in a somewhat smaller seeding in the spring.

Even if this situation develops in 1927, the present acreage in white wheat at average yields is more than sufficient to maintain the United States on an export basis on this class of wheat. With the Australian crop of 1926 larger than last year, and with an expansion of acreage going on in that country, the prospects are for increased competition in the export market for Pacific white wheat.

The soft red winter wheat growers are apparently in a more favorable position than the growers of other classes of wheat, in that the acreage of this crop has been reduced, largely because of weather conditions at time of seeding, so that it does not seem likely that with average yields the production will exceed domestic requirements.

HARD RED SPRING WHEAT

The prolonged dry weather in the spring wheat area cut the production of both hard red spring and durum wheats in 1926. The relatively short domestic crop of hard red spring wheat, coupled with the import duty, has resulted in the maintenance of the domestic prices of this class of wheat on a relatively high level. At Minneapolis prices of this wheat have been maintained at a level of about 10 cents below the high price of last year. Premiums for protein content for the 1926 crop of spring wheat have averaged lower than for the 1925 crop, because of the large quantity of high protein wheat available.

If average yields are obtained on an acreage of hard spring wheat equal to the acreage in 1926, a production of around 160,000,000 bushels of this class of wheat can be expected in the United States in 1927. This production would be about 6 per cent above the seven-year average production, 1920-1926.

In view of the probability of another large crop of hard winter wheat in the United States, spring wheat farmers should realize that any material increase in the area of spring wheat this year, even with average yields, may result in a production sufficient to put us on an export basis for all hard wheat. Between now and planting time spring wheat farmers should watch the condition of the winter wheat crop of the United States and other important winter wheat-producing countries. Excessive losses from winter killing of hard winter wheat might make it desirable to increase the hard spring wheat acreage.

In those areas in the spring wheat regions in which there is a bad infestation of weeds such as sow thistle, quack grass, and wild oats, some farmers, who are not pressed for immediate income, may find it advantageous to increase their area of summer fallow this year, or to substitute a cultivated crop. An increase in feed crops such as barley, fodder corn and sweet clover, is likely to prove profitable on those farms where sufficient livestock is available to market such crops in the form of livestock and livestock products, particularly on those farms which now have 50 per cent or more of their total crop area in wheat.

As between the strictly cash crops of wheat and flax, no apparent advantage in net returns is to be expected from one over the other, if yields for the two that are equal to the average of the regions are obtained. On poor or weedy land, however, on which flax yields are likely to be low, more favorable returns can be expected from hard spring wheat.

DURUM WHEAT

The outlook for durum wheat depends almost entirely upon crop conditions for the season in 1927 and yields in North Africa and in southern Italy. The relatively high prices of durum at the present time are caused by the short crop both in the United States and in important foreign countries in 1926. The prices of amber durum at Minneapolis have averaged 10 cents a bushel higher in the last six months of 1926 than for the same period in 1925, and at times this wheat has sold at a premium over other classes of wheat.

Early reports from North Africa concerning the fall seedings indicate a less favorable condition than last year. Some reduction in area is reported, but last year the crop turned out poorly, following favorable conditions in the early part of the year. Increased competition from Canada and Russia is

also possible. Russian production appears to be recovering gradually and durum production is increasing in Canada. The Canadian inspections to date for this season already exceed 6,000,000 bushels, which is a greater amount than the total inspections of the crop of 1925.

An acreage in the United States equal to the 1926 acreage with average yields would result in a total production in 1927 of approximately 60,000,000 bushels of durum. This production would about equal the seven-year average production, 1920-1926. Should this acreage be seeded in the United States in 1927 and should average yields be obtained and should yields in north Africa and Italy be average or above, the position of durum wheat would probably be similar to its position in 1925, when it was selling on an export basis. Farmers who contemplate the growing of durum wheat should watch very closely reports of crop conditions in northern Africa and Italy between now and planting time.

FLAX

Where flax can be produced profitably at present prices some increase in acreage could be made without increasing production sufficiently to affect prices materially, for domestic requirements are still well above probable production on an acreage equal to that of last year. Another large crop of flax in Argentina this year makes it improbable that prices for the 1927 crop of domestic flaxseed will be any higher than those received for the 1926 crop. The demand for linseed oil may slacken somewhat in 1927, but requirements of flaxseed for all purposes are likely to remain around 40,000,000 bushels.

The United States flax acreage in 1926 was estimated at 2,897,000 acres, with an average yield of 6.7 bushels per acre, resulting in a crop of 19,459,000 bushels. An increase in acreage of 10 per cent, in 1927, with a yield as high as 8 bushels per acre would result in a crop some 14,000,000 bushels below last year's domestic consumption of flaxseed. Should the highest yield on record, 9.7 bushels, be equaled, the supply would still be below domestic requirements although such a large crop would no doubt exert considerable influence on prices.

With another large crop of 69,000,000 bushels now being harvested in Argentina the world's supply of flaxseed is approximately the same as a year ago when that country secured a record crop of 75,000,000 bushels. The world crop, so far as reported, is about 5 per cent smaller than last season, but trade reports indicate a larger carry over than usual of old seed in Argentina and India.

About 67,000,000 bushels were exported from Argentina and 11,000,000 bushels from India during 1926, indicating that the world demand for flaxseed was sufficient to absorb such a large surplus, but at lower prices. These lower prices were reflected in the United States markets, the 1926 crop having been largely marketed at prices ranging from 20 to 40 cents per bushel below those received for the 1925 crop.

Probable relative yields and prices should be taken into account in deciding whether to increase the area of flax at the expense of spring wheat or oats. With average yields of wheat and of flax the net returns per acre from wheat selling at \$1 per bushel would be equivalent to those from flax selling at \$1.45 per bushel. At these average yields, wheat at \$1.25 per bushel would be as profitable as flax at \$1.80, whereas with wheat at \$1.50, flax would have to sell at \$2.15 per bushel to be as profitable. Spring wheat yields in the four spring wheat States, Minnesota, South Dakota, North Dakota, and Montana, have averaged 12 bushels per acre for the past five years, and flax yields in the same States have averaged 8 bushels per acre.

Flax does well when following a legume crop, especially sweet clover or red clover, and on cornland where the corn has been well cultivated and kept free from weeds. On land where flax is likely to produce a good crop, farmers may find it a more profitable crop than spring wheat. The decreasing demand for oats as a feed crop also suggests that where oats are grown for market farmers may well consider whether flax might not produce a greater money return.

RYE

The price outlook for the 1927 crop of rye, judging from prospective supply and requirements, indicates little change from the present situation. Reports indicate a reduction in the area seeded throughout the world; but with average

or better than average yields, the production in 1927 may make the total world supply equal to or greater than the total supply of the past year.

The acreage seeded for harvest as grain in 1927 in the United States (3,579,000 acres) is only slightly larger than for last year and is very much below the acreage harvested in any other year since 1916. With average yields a production of around 47,000,000 bushels can be expected. The yield per acre for the last two years has been about 2 bushels below the 10-year average, which is 13.5 bushels, and domestic stocks are not high. But domestic production has but little influence on prices because only a small part of the crop is produced in this country and the returns to growers depend very largely upon the world situation.

World production in 1926, in the countries reporting to date, amounts to 807,000,000 bushels, which is 20 per cent below production in 1925. This reduction is largely due to changes in yields, as the estimated acreage for 1926 was only slightly less than in 1925. The average yield of rye per acre in Europe, exclusive of Russia, was only about 19 bushels as compared with 23.5 in 1925 and the pre-war average of 21.7 bushels. Exports from Russia have been small. With this reduction in supplies the carry over at the end of the year is likely to be small. Reports to date indicate a further probable reduction of the world area planted to rye. Reports from Germany, Czechoslovakia, and Russia indicate a reduction in rye area in favor of wheat.

RICE

The too rapid expansion of acreage sown to rice has resulted in a present production in the United States in excess of demand at satisfactory prices. Some reduction in acreage rather than further increase appears advisable. Substitution of soy beans for part of the present rice acreage in Louisiana, Texas, and Arkansas, and the adoption of a rotation of soy beans with rice, would serve to reduce rice acreage and decrease production costs at the same time. Domestic demand for rice may be increased by shifting production to good types of table rice.

The present unsatisfactory rice situation is due to a change in the trend of production in this country. Before the World War rice production in the United States was increasing gradually along with the increase in population, but did not equal domestic requirements until 1914 when production was greatly stimulated by the war. It reached the high point in 1920, with a resulting great decline in prices. Stocks had accumulated and prices continued to decline, reaching a low point in 1922. In the meantime the area in rice was being reduced and consumption was increasing. The result was a rise in prices from the low point in 1922 to a point in 1924 high enough to stimulate increased seeding. The area sown in 1925 was in excess of apparent needs, but an unfavorable season forced the abandonment of about 10 per cent of the acreage sown, so that the crop produced was but little more than sufficient to meet the requirements of continental United States, Hawaii, and Porto Rico and to this is to be attributed the satisfactory prices for the 1925-26 season. The effect of these satisfactory prices, however, was to cause a further increase in 1926 of 2 per cent over the area seeded in 1925, and this increased acreage, together with good yields, increased the production 24 per cent, bringing it back nearly to the level of 1922, or nearly to the level of the war years.

Rice stocks at the beginning of the season, August 1, 1926, were the largest since the beginning of the 1923 season. The increased supply and the low prices for this season are likely to result in larger stocks to be carried over into the next season.

The foreign outlook remains unchanged. Reports received to date indicate a world crop little if any larger than last year. The crop in Japan, the principal foreign market for California rice, is smaller than last year, but the increase in the supply of California rice together with the heavy early marketing of the native rice appears to have been sufficient to depress the market and reduce, temporarily at least, the premium paid for that rice in Japan. The producers of Louisiana, Texas, and Arkansas also lost their advantageous position of 1925 by producing more than the domestic requirements, including the requirements of Porto Rico, a protected market. The increased supply of 1926 compels these producers to seek an outlet for a considerable part of their crop this season, in Europe and Latin American countries, where they must meet competition of cheap rice from the Orient.

OATS

Should the acreage of oats in 1927 be maintained at the 1926 level and a yield equal to the 10-year average be obtained, this would result in a production almost as large as were the crops of 1924 and 1925. Those crops were chiefly responsible for the low price levels that have prevailed since these harvests. The relatively low production in 1926 brought about a slight increase over the 1925 price level while the low quality of the crop estimated at 79 per cent of normal, as compared with an average of 89 per cent, strengthened the market for the top grades.

Although the oats crop in 1926 amounted to only 1,254,000,000 bushels, against 1,488,000,000 bushels in 1925, the carry over on August 1, 1926, was 30,000,000 bushels more than that of the preceding year, making the total supply only about 200,000,000 bushels less than that of last season. Marketings for this year, however, as measured by receipts at principal markets from August 1, 1926, to January 8, 1927, have been considerably less than last year, amounting to about 6.3 per cent of the production against 8.8 per cent of the 1925 crop during the corresponding period last year. But as a result of the lighter demand commercial stocks are still large although they are about 25 per cent below the same date last season.

The oats market is almost wholly on a domestic basis as only a small percentage of the production is exported. Most of the crop is fed on farms; considerable quantities are used in mixed feeds, and a small portion goes into the manufacture of foods for human consumption.

The dominating factor in the domestic demand is the decrease in the number of oats-consuming animals. Horses probably represent the largest consumers of this grain, and there has been a material reduction in the number of horses. Horse population has declined at an average rate of 3½ per cent per year for the past five years and is still declining. The number of cattle in important feeding areas appears to be smaller than a year ago, while the commercial lamb-feeding areas are also carrying far below their normal quota this winter.

Taking into consideration the present market conditions, price trends and probable production, maintenance of the last year's acreage can not be expected to yield more profitable returns to farmers in the principal producing States than in the past year. But where local conditions favor the planting of oats instead of other crops or where the oats may be used on the farm, either as a feed or hay crop, it may be desirable to maintain or increase acreage.

BARLEY

Demand for feeding barley is not likely to be materially changed during the coming year. The market value will be determined largely by the supply and prices of other feed grains, and farmers should take these factors into consideration in determining the barley acreage for the coming year. Where barley can be grown advantageously for home feeding it appears to offer better returns than oats. Even in those States where the bulk of the crop is marketed, in recent years barley has shown a higher gross return per acre than oats.

The foreign demand for feeding barley appears likely to remain dull during the remainder of the season, because of the large European supplies of low-grade wheat and rye in addition to the usual supplies of barley and oats. There is also little prospect of any appreciable improvement in the export demand for malting barley grown in the Pacific Coast States during the remainder of the season because of a good supply in the Southern Hemisphere and continued offerings of British barley of good quality on the English markets.

The domestic barley crop in 1926 was 12 per cent less than in 1925 but 8 per cent above that of 1924. California produced another large crop following the good crop of 1925. In the Dakotas and in Nebraska and Kansas, however, severe droughts reduced production, and this was only partly offset by the exceptionally heavy crops in Oklahoma and Texas. The world crop, exclusive of Russia and China, as reported to date, was about 93 per cent of the 1925 crop. The European crop is about the same as in the preceding year, but the crop in Czechoslovakia, which is the chief source of the continental supply of malting barley, was somewhat below that of 1925. North Africa harvested a small crop last year, and unless conditions up to the harvest time in April should be very unfavorable some increase in production in these countries seems probable.

United States exports of barley for the first half of the season 1926-27 have been just about half of the exports for the same months of the preceding season. The decrease has been general from all sections of the country, although Pacific coast exports have held up better than those from the eastern ports. Exports of barley from San Francisco from June, 1926, to January 1, 1927, totaled approximately 175,000 tons, compared with about 242,600 tons for the same period in 1925. This is a much greater reduction than would be indicated by the slight reduction of 4,000 tons in the California crop. The slack demand has been reflected in the movement to market. Only about 227,000 tons were received at San Francisco for the seven months June to December, inclusive, compared with about 343,000 tons for the same period in 1925. Stocks at terminal and interior warehouses in California on December 1, 1926, as reported by the trade, were about 3,387 tons, compared with about 3,672 tons on December 1, 1925. Considering the size of the crop, these marketings to date would indicate either that farm stocks are materially larger than last year or that larger quantities have been used for feed. Farm stocks in California on August 1 were about 23,400 tons.

The slack export demand, together with the large crop in the Pacific Coast States, has kept barley prices at a low level in that section. In the northern dairy States from New York to Minnesota there has been a decided upward trend in the barley acreage during the past few years, probably as a result of replacing oats in crop rotation with barley, which is a more satisfactory dairy feed. In these States prices have been fairly well maintained.

CORN

Not more than the usual seasonal advance in corn prices from present levels is expected for this spring and early summer. The smaller 1926 corn crop was accompanied by a large increase in farm carry over and visible supply, and a reduction in demand. The demand for the 1927 crop will be little if any greater. With no positive indications of increased demand for the 1927 crop, and with the probable acreage increases in the South, an average yield would result in another year of low corn prices unless acreage in other sections is substantially reduced.

The total supply of corn on November 1, including corn in storage, was only 2 per cent less than a year ago. The corn crop was more widely distributed over the country in 1926 than in 1925, with 67 per cent of the crop in the 12 North Central States in 1926 as compared with 77 per cent the year before.

The December market price of corn showed little change from a year ago, when the decrease in general price level is taken into consideration. The average December farm price for the 12 Corn Belt States was practically the same for both years; but for the whole country the average farm price was somewhat lower in December this season than last, largely because of increased production and consequently lower prices in the Southern States, especially in Texas and Oklahoma, and because of the poorer quality of this year's crop. Apparently the small decrease in the farm supply of corn has not been sufficient to offset the lower feeding demand for corn caused by decreases in numbers of hogs, cattle, and horses.

The commercial demand for corn is not likely to change materially from last year. There are but slight prospects of any increase in export demand because of good crops in Europe last year and prospects for a good crop in Argentina this year. Exports for November and December, 1926, totaled only about 3,600,000 bushels, compared with about 4,300,000 bushels for the same period in 1925.

The slow demand for corn for feeding and the unusually large visible supply of corn are also depressing factors in the present corn price situation. On the other hand, the decreased supplies of oats and hay in the Corn Belt States have materially increased the prices of these other feed crops and should eventually tend to strengthen the demand for corn.

In the 12 Corn Belt States the total farm supply of corn including farm carry over on November 1, 1926, was 15 per cent less than a year ago, whereas the December farm price was practically the same. The increased supplies of corn, oats, cottonseed, grain sorghums, hay, and other feed crops in Southern States has not only lowered prices but will also both reduce and postpone the demand for corn shipments from the Corn Belt States. This condition will tend to retard the usual seasonal advance in corn prices.

The demand for corn from the 1927 crop will probably be little if any greater than for the 1926 crop. Continued reductions in horses and cattle are likely to be enough to offset the possible increase for feeding hogs from larger fall farrowings in 1927. There are no indications now that carry over next fall will be enough smaller than last fall to change the supply situation materially.

Production of corn in unprofitably large volume in 1926 was due to acreage rather than yields, as the average yield was slightly below the 10-year average except in southern States. Corn acreage in the South has decreased nearly 7,000,000 acres since 1920, whereas acreage in the North Central States has increased about 4,500,000 acres since 1920, and is now 3,500,000 greater than the average for the years 1909 to 1914.

BEEF CATTLE

The number of cattle marketed in 1927 will probably be materially less than in 1926. Unusually heavy slaughter of cattle and calves during 1926 reduced numbers on farms and ranges in the United States to the lowest point in many years. The demand for beef is expected to continue at about the same level as last year, when total domestic consumption was the highest on record. No prospect of increased competition from abroad or from other meats in the domestic market is in sight. Prices of slaughter cattle are expected to average somewhat higher than in 1926. Stocker and feeder cattle will probably meet a strong active demand throughout the year.

Cattle numbers decreased in 1926 because of the continued heavy slaughter of cattle and calves. The inspected slaughter of cattle was the third largest on record, exceeded only by the slaughter of 1917 and 1918; the inspected slaughter of calves was the second largest, exceeded only by the slaughter in 1925. The combined slaughter was second largest, exceeded only by the slaughter of 1918.

Decreases in cattle numbers between 1920 and 1925 indicated that an inspected slaughter of cattle and calves much in excess of 12,000,000 head a year would result in a further reduction in numbers. The slaughter in 1926 exceeded this amount by nearly three and a third million head.

The estimated number of cattle on farms and ranges in the United States on January 1, 1927, appears to have been materially less than on the corresponding date in 1926. The largest part of this decrease was in the North Central States, especially those west of the Mississippi River. The decrease in this region was caused partly by the severe drought and crop failure over large areas in Kansas, Nebraska, and the Dakotas, and partly by the heavy shipments of fed cattle, not replaced by shipments of stocker and feeder cattle. Most other regions showed decreases, except the Southwest, where unusually favorable feed conditions caused a keen local demand for stocker cattle with resultant reduced shipments from these States.

During the first six months of 1927 the market supply and slaughter of cattle are expected to be considerably smaller than in 1926. The number of cattle on feed in the Corn Belt January 1, 1927, was estimated as 7 per cent smaller than on January 1, 1926. This decrease was offset somewhat by larger numbers on feed in some western sugar-beet areas and by increased cake feeding in Texas and Oklahoma.

Because of the larger proportion of lightweight cattle and of calves in the number being fed this winter the average length of feeding may be longer than last winter with a probable larger decrease in market supply of fed cattle during the first three months than during the spring and early summer. It also seems probable that the marketings of butcher stock and inferior cows, during the first six months of 1927, will be smaller than during that period a year ago.

During the second six months of 1927 a rather sharp reduction in marketings of all cattle, both from the farming and ranching sections, is to be expected, but if fat-cattle prices during the next few months are favorable, the decrease in grain-finished cattle during this period may be small. In view of the present cattle situation a reduction of 10 to 15 per cent in total slaughter of cattle during 1927 is not improbable. The reduction in milk cows and the increasing prices for them, with a general strengthening of all cattle prices, may be expected to reduce materially the slaughter of calves.

There was some increase of beef imports in 1926 as compared with 1925, but our total consumption of foreign beef is still negligible. The heaviest im-

ports have been from Canada with some receipts from Australia and New Zealand. Unless there should be a very marked advance in prices of domestic low-grade beef or a further decline in prices of British frozen beef, there is little probability of important beef imports during the year 1927.

Consuming demand for beef, consequently the demand for slaughter cattle, is expected to continue good during the greater part of 1927. Pork is the only major kind of meat which competes seriously with beef. With present indications of continued small supplies of hogs during the next 12 months no adverse effect on the consumer demand for beef is expected.

Demand for stocker and feeder cattle is expected to be active during 1927. If other conditions are normal, presumably such demand will show greatest activity during the last four months of the year. Heavy feeder cattle will probably move best, partly because of their scarcity and partly because of the possibility of strong packer competition for that kind of cattle.

An urgent demand for calves will probably be in evidence throughout the year.

Slaughter cattle prices during the first six months of 1927 are expected to average somewhat higher than during the corresponding period in 1926. The usual spring decline on better grades will probably be less pronounced than normally. Lower grades, on the other hand, will show their usual spring advance and may exceed that which occurred in 1926.

Stocker and feeder prices are expected to equal the relatively high average of the first half of 1926 despite the fact that at the beginning of 1927 they were somewhat lower than a year earlier. This probability will be materially increased if spring opens early and if there is reasonable promise of abundant grass in pasture and range areas.

Somewhat higher average slaughter cattle prices than in 1926 are anticipated in the fall of 1927. The usual seasonal advance in better grades will probably be more pronounced than in 1926 and, although the spread between heavy and light cattle will probably be narrow, the former are expected to sell at a premium. Stocker and feeder prices should average somewhat higher than in the fall of 1926, with heavyweight feeders showing the greatest proportional advance.

On the whole, cattle prices in 1927 should continue their upward swing in the price cycle which began in 1922.

HOGS

The outlook for the swine industry for 1927 is favorable. Present information indicates a 1927 market supply of hogs no larger, and perhaps smaller, than in 1926. Domestic demand is expected to continue strong, but no improvement in foreign demand is anticipated. Hog prices are likely to be maintained during 1927 near the 1926 level. Prices similar to those now prevailing can not be maintained through 1928 unless hog production is held down to the level of the past two years.

The Corn Belt pig crop of 1926, as indicated by the pig surveys, was not more than 1 per cent larger than in 1925. Cholera losses took a comparatively heavy toll, especially from the spring crop. The number of these losses over normal is estimated to have been sufficient to reduce the number of hogs available for market during the 1926-27 season at least 3 per cent.

Indications are that the greater part of the reduction in market receipts will occur during the winter months. In view of the highly profitable feeding ratio, hogs will probably be held back for feeding to heavy weights, and will thereby decrease the proportion of total marketings during the winter as was done in 1926.

Market supplies during next summer and early fall will probably be about as large as in 1926. The tendency to hold hogs longer for heavy feeding will also delay the marketings of the 1926 fall pig crop and increase the proportion of them in the market receipts during the late summer, much as it did last year.

The December, 1926, survey indicated that there would be little if any increase in the number of sows farrowing in the spring of 1927 in the Corn Belt, which is the principal source of commercial production. With average weather conditions, the spring pig crop of 1927, therefore, will not differ greatly from that of 1926 in this region. Since it is not likely that cholera losses next fall will equal those of last, market supplies for the winter of 1927-28 will

probably be somewhat larger than this winter, or about as large as in the winter of 1925-26.

Present supplies of corn are more than ample for hog feeding, as evidenced by present corn and hog prices. Unless greater reductions in corn acreage are made in 1927 than are usually made under similar price conditions, a yield as low as 1924 (average 22.9 bushels per acre) would provide ample supplies of corn at no material increase in corn prices. As the present hog numbers insure greater returns to farmers than do larger numbers, conditions warrant decreasing corn acreage to bring about a better relationship between hog and corn prices, rather than raising more hogs.

From present indications the consuming demand for pork products in 1927, while above average, is likely to be slightly below that of 1926. Demand in 1926 was at the same high level as characterized 1925, with the exception of that for lard, which was adversely affected by the low prices of cottonseed oil during 1926, especially during the latter part. In view of the prospective decrease in beef supplies and other conditions, a reduction in demand for pork products sufficient to affect hog prices materially during 1927 is not anticipated.

Foreign demand for pork products during 1927 will probably be no stronger than during 1926. Industrial conditions in Great Britain show improvement but it is not likely that an increased demand for our hog products will follow. Hog slaughterings in foreign countries were apparently slightly larger in 1926 than in 1925, but mid year reports from four important countries show a 10 per cent increase in sows on farms, indicating that a general increase in numbers is under way. Notwithstanding improving industrial conditions in those European countries which are the chief buyers of American pork products, the increasing hog production in Europe and the continuation of hog prices at present levels in the United States indicate that our pork exports during 1927 are not likely to be any greater than during 1926, if as large.

On the basis of supplies and probable demand, as indicated above, hog prices through the next six months will probably be maintained at about the same level as a year ago with about the same seasonal movement; prices during the summer and early fall are likely to continue high, but not quite up to the average of the last six months of 1926; during the winter of 1927-28 prices will probably be on a slightly lower level than during the present winter. In making plans for the fall pig crop of 1927 and the spring crop of 1928 farmers should bear in mind that the present level of prices can not be maintained if material increases are made in production and marketings.

DAIRY PRODUCTS

Further slight decreases in dairy cows occurred in 1926 and numbers of heifers are insufficient for normal replacements. Production during 1927 may exceed the low 1926 production, which was caused in part by exceptionally poor pasturage. Dairy men are likely to have a moderately favorable spread between the price of feed and the price of dairy products for a year or two should urban industries continue at approximately their present activity. Domestic demand promises to continue moderately favorable, and foreign demand promises to show improvement. Foreign production, however, is increasing. On the whole, the dairy situation is on a stronger basis than it was a year ago. If the number of heifer calves saved is not materially increased, favorable conditions may continue.

Present indications are that the number of dairy cows continued to decrease through 1926, with slightly fewer dairy cows on farms January 1, 1927, than a year earlier. There was no increase in the number of dairy heifers above the reduced numbers of a year before, at which date there were almost six dairy cows on farms for every yearling heifer being raised for milk purposes. Since the number of heifers is low in comparison with the number of dairy cows, and is insufficient for normal replacements, numbers of dairy cows can be increased in 1927 and 1928 only by retaining in the herds older or less productive cows, including those not ordinarily kept for milking. The increase in dairy herds that is ordinarily expected when the price of feed is low in comparison with the price of dairy products has not yet gained much headway, though increases in prices of milk cows which have occurred are likely to encourage the saving of larger numbers of dairy heifer calves this year.

In the Central States expansion of dairying has been partially checked by poor hay crops and poor pastures for two seasons in succession. In the North-east the high industrial wages and the continued movement of population away

from the farms are tending to restrict expansion. The Mountain and Pacific Coast States show some slight increases in production. In the South feed supplies are abundant at present and there is a tendency toward increasing dairy herds, but the number of milk cows in the South is too small to affect materially the general situation.

Supplies of dairy feed are generally ample, and in spite of somewhat smaller crops of feed grains and hay than last year, feed prices are generally lower. Supplies of high-protein feeds are adequate with prices from 4 to 10 per cent below those of a year ago, whereas prices of wheat by-products are slightly above a year ago, though supplies are no smaller. Taking all important grain and concentrate feeds together farm prices for the last three months of 1926 averaged 4 per cent lower than for the same period of 1925. Apparently feed prices for this winter will be as low or lower than last winter. With the exception of cottonseed, yields of feed crops in 1926 were not above average, and numbers of livestock as a whole are still decreasing. Unless farmers make an unusual reduction in acreage next year feed supplies for the 1927-28 season will be ample even should yields be somewhat lower.

Lower feed prices during recent months, coupled with recent higher prices for butter, will undoubtedly tend to encourage more intensive feeding this winter, which would result ordinarily in heavier production of milk per cow than usual during the remainder of the winter season. Even though these favorable conditions for increased production have prevailed during December and January, production and receipts of manufactured dairy products, so far, have run lower than they did a year ago.

Reduced production of dairy products in 1925 and 1926 was caused largely by unfavorable pasture conditions. Last year, especially, was less favorable than any year in the last decade. Average conditions during the summer of 1927 would readily increase milk production during that period by 5 to 10 per cent above that of last year, and unusually favorable weather would result in even greater increase. The number of cows is not greater than a year ago, but average pasture conditions in 1927 would result probably in an increase in production over 1926.

Indications are that business activity for 1927 may not quite equal the record levels of 1926. Present indications, however, are that the recession will probably not be sufficient to affect appreciably the per capita demand for dairy products or to prevent a continuation of the upward trend in per capita demand for fluid milk.

World dairy production was apparently heavier in 1926 than in 1925, and may be considerably heavier in 1927. So far, there has been a tendency for the increase to be consumed in the exporting countries where low prices have stimulated consumption. This has been especially true in Russia.

In Great Britain, where consuming power was lessened by prolonged labor disturbances during fully half of the year just closed, the conditions affecting demand for dairy products during the coming year may confidently be expected to make marked improvement. Germany's foreign demand for dairy products, on the other hand, clearly shows some weakening due to increasing domestic supplies. The two chief butter-importing nations, England and Germany, imported no more butter in 1926 than in 1925, although butter prices were 10 to 15 per cent lower.

With normally increased world supplies and subnormal European demand, price depression prevailed in foreign markets throughout the last half of the year just closed. Any further recovery which may occur in world butter prices would be favorable to further increased world production but it would tend to reduce foreign competition on domestic markets to even less than that in 1926. Total United States imports of butter during 1926 were 8,029,000 pounds compared with 7,212,000 pounds in 1925, notwithstanding an increase in the domestic tariff from 8 to 12 cents per pound which occurred in April, 1926.

FLUID MILK

In eastern fluid milk areas, 1926 prices averaged somewhat higher than those of 1925, whereas in other sections prices were slightly lower. The outlook for fluid milk must take into consideration certain factors, more or less local in character, which do not apply equally in so far as manufactured dairy products are concerned.

Some relation between prices of fluid milk and prices of other dairy products is inevitable, but the extension of areas supplying local markets, local

sanitary control measures, local marketing methods, and improvement in transportation facilities and methods are all influences which affect the outlook for producers who supply different local markets. In sections where the principal outlet for milk is through manufactured products, milk prices will follow more closely the trend of butter and cheese prices than in those areas where the bulk of the supply enters fluid-milk trade. Increasing long-distance shipments of sweet cream are already having an effect on eastern milk areas.

BUTTER

Considering the usual seasonal trend, 1926 was notable for the steady course followed by butter prices. In January and again in December price declines occurred because of the immediate influence of foreign butter, but these two periods were the only periods during the year when any unusual tendency developed. The December condition carried over into 1927, and this year started off with butter prices 4 to 5 cents higher than a year ago. Since the first of the year prices have shown declines much in line with the usual January tendency.

Storage stocks of butter on January 1, 1927, were not only a third less than they were on January 1, 1926, but were also approximately a fourth less than the January 1 five-year average. This, together with the fact that production is apparently continuing to run lighter adds strength to the present butter markets. The lighter storage stocks and continued low production would tend to sustain butter prices through the remainder of the winter. Given normally favorable weather conditions next summer, larger production would result than in 1926 when conditions were unfavorable.

CHEESE

Cheese prices in 1926 averaged slightly below 1925, but as was the case with butter prices, they were approximately on the same level as the average of the past five years.

Production of American-type cheese also is apparently starting off at a slower rate than in 1926. Stocks in cold storage are slightly lower than a year ago, although they are about a fourth heavier than the January 1 five-year average. This increase over the five-year average loses some of its significance when the increasing quantities now being carried in storage for the manufacture of process cheese are noted.

CONDENSED AND EVAPORATED MILK

Condensed and evaporated milk markets were firm throughout 1926 with domestic trade constituting the principal outlet. Foreign trade continued to decrease. Total production for the year 1926 approximated that of 1925 but on January 1, 1927, stocks in manufacturers' hands showed a heavy decrease below those of January 1, 1926.

SHEEP AND WOOL

Sheep in this country have been on the upturn of the production cycle since 1922 and present indications are for a continued moderate increase in numbers. Sheep and lamb prices have been on the downward trend since 1925. Lamb supplies for 1927 may be slightly larger than for 1926. Consumptive demand for lamb is expected to continue strong through 1927 but feeder demand may be less active than in 1926. The wool market appears firm with no marked changes in sight.

LAMBS

Sheep numbers in the United States continued to increase during 1926. This increase was largely in breeding stock, represented by ewe lambs kept for breeding.

Sheep and lamb slaughter has been gradually increasing since 1922. The number slaughtered under Federal inspection in 1926, amounting to nearly 13,000,000 head, was 8 per cent greater than in 1925 and was the largest since 1921.

Sheep are reported in good condition in most of the western producing areas and with favorable weather conditions the lamb crop of 1927 may exceed slightly that of 1926. Marketings next fall will probably be somewhat larger

in relation to the size of the crop than in 1926, as a continuation of the keen demand for ewe lambs of suitable breeding type, in evidence in the fall of 1925 and 1926, is hardly to be expected next fall.

The estimated number of lambs on feed January 1, 1927, was 8 per cent less than a year earlier. The increased numbers in the Corn Belt indicated larger market supplies during January and February than last year, but the decreases in Colorado and western Nebraska indicated smaller supplies of fed lambs from March to May. The decrease in the spring may be partly compensated for by a larger and earlier movement of California spring lambs than last year, if weather and feed conditions continue favorable. A heavy movement of grass-fat sheep and yearlings from Texas is also possible in May.

Consumptive demand for lamb continued strong through 1926, dressed lamb prices decreasing no more than would be usual with the increased supplies. The demand for lamb will probably continue at a high level through 1927. The possible slight decline in business activity is not likely to be enough to offset the usual $1\frac{1}{2}$ per cent annual increase in demand caused by population growth. Feeder demand, however, was lower than during 1925, which was partly responsible for the lower live lamb prices during the last half of 1926.

In 1925 many feeders, especially in the West, lost heavily on their operations and as a result the demand for feeder lambs in 1926 showed a material decrease. Furthermore, the lamb market thus far this winter has not been generally satisfactory either for the Corn Belt or for the western feeder. These conditions are likely to be reflected in a decreased demand for feeder lambs next fall. However, should western feeders realize satisfactory returns for their fed lambs this spring there is a possibility of a stronger demand for western feeders than in 1926.

With the indicated heavy supplies, lamb prices in the immediate future will probably continue at about present levels, with a subsequent recovery in the spring. The extent of the advance will depend upon how far the short supplies of fed lambs are offset by heavier supplies from California and Texas.

With an average lambing percentage and fewer ewe lambs held, market supplies during the second half of 1927 may be somewhat larger than in 1926. Consumer demand will probably continue strong but feeder demand is not likely to be as good as in 1926.

WOOL

The 1926 world's wool clip was slightly larger than for the year previous and the largest for any of the postwar years. London prices of wool are below those of a year ago, but the market is now firm and the demand is good. Strengthening factors for 1927 are the low stocks in the Southern Hemisphere at the beginning of the 1926-27 shearing season, prospect for improvement in industrial conditions in the United Kingdom, a good demand from Germany, and greater confidence because of the apparent stability of prices.

Estimates of sheep population for 13 important countries reporting in the first part of 1926 show an increase of 3 per cent over 1925. This increase brings the number of sheep in these countries almost back to the pre-war level. Statistics in certain countries, for which figures or other indications are available, point to a continued increase in 1927.

World wool production in 1926 was 3,024,000,000 pounds, as estimated by the United States Department of Agriculture, compared with 2,998,000,000 pounds in 1925, and an average of 3,047,000,000 for 1909-1913. Australian carry over at the beginning of the season was only about 10,000,000 pounds as compared with 165,000,000 pounds carry over a year earlier, while sales of wool at colonial markets this season to date have been heavier than during the same period a year ago. The 1926 clip in the United States, 269,000,000 pounds of fleece wool, showed an increase of 6 per cent over that of 1925.

Foreign-mill consumption of wool during the last season was apparently greater than for several years, the largest production since the World War being absorbed and stocks in producing countries being materially reduced during the year. Wool prices in London declined during the year, with prices in December, 1926, approximately 5 per cent lower for medium wools and 8 to 15 per cent lower for fine wools compared with a year earlier; but prices in January were about 5 per cent above the December closing sales. Furthermore, January prices in the primary exporting countries are higher than a year ago. Prices at Wellington, New Zealand, at the January sales were above the prices at previous sales in November.

Wool consumption during 1926, excluding carpet wool, was slightly above 1925 consumption. Apparently the greater stability in raw wool prices during the latter part of 1926 led to some return of confidence among manufacturers. Unless there is a recession in general business activity there is no reason to expect a decrease in the domestic demand.

Domestic prices on all grades of wool declined materially during the first half of 1926, but advanced slightly during the second half of the year. Grease wool prices for the first week of 1927 were from 6 to 10 cents lower than they were a year earlier.

In view of the foreign situation and the unusually light stocks in mills in this country, and in view of the fact that present available supplies of domestic wool are about the same as at the beginning of 1926, the wool market will probably continue at about present levels. Apparently wool prices are more stable than at any time since the World War.

MOHAIR

The mohair producers of the United States are facing a difficult situation for the marketing of their product. It is possible, however, that this situation may be relieved by some recovery in the foreign demand for mohair. Domestic demand for mohair has increased rapidly in the past, but producers may well be careful not to expand production more rapidly than domestic demand requires.

The outstanding features of the present situation are: (1) The large quantity of mohair imported last year, (2) the large quantity of these imports remaining in bond in customs warehouses, and (3) the decrease in foreign consumption of mohair, offset in part by what appears to be a market increase in mohair consumption in the United States.

The use of mohair in automobile cloth and in furniture upholstery in the United States in 1926 is estimated to be one-third larger than it was in 1925. Notwithstanding this marked increase in consumption, imports of foreign mohair have been so large that stocks of foreign mohair in bonded warehouses have greatly increased. Total imports for the year have amounted to nearly 11,000,000 pounds. The stocks in bonded customs warehouses January 1, 1926, amounted to about 3,400,000 pounds, and on November 30, the late date for which figures are available, amounted to 9,900,000 pounds. Stocks in dealers' hands are also believed to be heavier than usual at this time in the season. It should be stated that there is no evidence of increased stocks in foreign countries. Apparently increased demand in this country in the past year has attracted to this country the surplus supplies of foreign countries, whereas the demand in the current year has not been sufficient to consume these supplies currently. The significance of the large imports can be realized when it is noted that this amount is probably equal to our total domestic production.

The production of mohair in the United States has been increasing rapidly in recent years and appears to be not far below the usual domestic requirements.

The estimated production increased from a pre-war average of about 4,000,000 pounds to about 7,000,000 pounds in 1921 and has continued increasing up to the present time. That production is approaching usual domestic requirements is indicated by the fact that for the period 1923-1925 only 2,900,000 pounds were imported for consumption, which also indicates that the total consumption of the United States for this period was probably between 12,000,000 and 13,000,000 pounds. So long as our production continues to be no greater than our domestic requirements our producers will be in an advantageous position with reference to foreign producers because of transportation costs from foreign countries and the tariff. Owing to the tariff, the price of domestic mohair in Boston at the present time is nearly double the value per pound of the foreign mohair in bond.

The shipping of large quantities of foreign mohair to Boston last year seems to have been caused by reduced foreign demand. The United Kingdom, the greatest foreign consumer, in the past year has imported only about 11,000,000 pounds, of which 4,500,000 were reexported; whereas in the period 1921-1925 the United Kingdom imported, on the average, 16,000,000 pounds and imports during the pre-war period averaged 30,000,000 pounds.

The decline in British takings seems to be caused largely by a loss of continental markets for mohair yarn and other manufactured products. The great reduction in the takings of last year, as compared with previous years, was caused probably, to some extent at least, by the strike and the general depres-

sion of the British manufacturing industries. It is possible that with the recovery of economic conditions in the United Kingdom and in Germany there may be some increase in the demand for foreign mohair which will relieve this market somewhat of the products of South Africa and Turkey.

HORSES AND MULES

Present numbers of work animals are apparently ample to meet farming needs during the coming season, but the number of young stock is only large enough to maintain about half the number of work stock now on farms. Farmers can not expect to replace their work stock a few years from now at the low level of present-day horse prices.

The situation in the Southern States is such that the demand for mules in 1927 will probably not be as great as it was in 1926. The decreased purchasing power of cotton farmers and the necessity for economical production will probably result in the decreased movement of mules into the Cotton Belt. The low returns from the sugar cane crop of 1926 indicates a similar situation with cane producers.

The demand for horses for farm and city work has fallen rapidly since 1918. The automobile, the truck, and the tractor have replaced some of the work stock on a great many farms. On January 1, 1925, there were approximately 500,000 tractors on farms. Since then nearly 800,000 tractors have been manufactured in the United States, most of which are used by farmers. The general introduction of the combine harvester in the wheat belt has permanently reduced the need for horses there. With the improvements that are being made in motor power it is difficult to foresee the extent to which horses will be supplanted on American farms.

The total number of horses and mules on farms have decreased about 17 per cent since 1920, and the ratio of all colts per 1,000 horses and mules has decreased from 132 in 1920 to 73 in 1925 and at the present time is probably about 65. Without colts and horses to replace our present number of work animals the number will fall off rapidly, probably as much as 30 or 40 per cent, within the next five or six years.

This rapid reduction will first develop into an acute shortage in those States where the horses now on farms are the oldest, where there are fewer colts coming on as replacements, and where the topography of the country or character of labor available, or the type of farming being followed, make the use of tractors less satisfactory than in other parts of the country. In the North-eastern and Southeastern States a larger proportion of the work animals is over 10 years of age than is true elsewhere. Neither of these sections is as well adapted to tractor farming as are the broad plains of the Central States. Farmers in the Corn Belt, where surplus horses have previously been raised, should consider the possibility of increasing the production of the types of horses and mules that are suitable to meet the probable demand from the Eastern States. Only in the far Western States are the present number of colts anywhere near sufficient for replacement purposes.

The cycle of horse prices is longer than for any other class of livestock. Prices of horses in terms of 1910 to 1914 dollars have been lower during the past five years than for any time on record. Horse prices previously reached low points in 1863, 1880, and 1897. The present low phase in the price cycle has undoubtedly been lengthened by the displacement of work animals by automobiles, tractors, and trucks. Eventually the number of work animals will undoubtedly be reduced to a point where scarcity will cause prices to rise rapidly.

POULTRY AND EGGS

The year 1927 promises no material changes for egg producers in most sections of the country. Present indications point to a moderate increase in egg production but it is expected that there will be little change from last year's price levels.

There is apparently no reason to anticipate any particular decrease in the production and marketings of poultry during the coming year so that the present heavy storage holdings of dressed poultry are likely to have a depressing effect on the poultry market unless demand increases.

The trend of egg production in the United States has been decidedly upward since the World War, increasing about 19 per cent from 1919 to 1924, whereas

the human population increased but 8 per cent. Those regions that show the greatest increase in specialized egg farming for the period, also showed the greatest percentage gain in egg production. The Pacific coast, New England, and Middle Atlantic States are credited with largest percentage gain for the five-year period, with increases of 60, 51, and 43 per cent, respectively. Increases of 33, 14, and 10 per cent were noted in the Mountain, West North Central, and East North Central States. Eighty per cent of the increase in these six geographic divisions was about equally divided between the West North Central, Middle Atlantic, and Pacific coast States. Incomplete census reports from the Southern States indicate that the increase there, on the average, was less than for the other regions of the country.

The estimated egg production during 1926 was probably at least 5 per cent greater than during the previous year. The receipts at the five principal markets, however, were almost the same for the two years, probably because of an increasing tendency to market eggs direct to smaller markets. Egg prices at New York during 1926 were the lowest since the war and averaged 2 to 3 cents less than for the previous year, mainly because of lower fall and winter prices for eggs.

During November and December, when the effect of the 1926 crop of pullets began to be felt, receipts of eggs at the principal markets ran ahead of those of the same months in 1925, and, so far in January, 1927, have slightly exceeded the rather heavy receipts of January, 1926. Present indications are that egg production in 1927 will be fully equal to last year, and probably greater, depending upon weather conditions and upon the continuance of the present trend toward the increase in numbers of new, specialized poultry enterprises and in the increase in size of those already established.

The year 1927 opened with stocks of cold-storage eggs amounting to 1,111,000 cases. This is over 550,000 cases less than on January 1, 1926, and over 250,000 cases less than the five-year average. Stocks of frozen eggs on the same date were about the same as in 1926 but were considerably above the five-year average.

The outlook appears to be good for those poultrymen in the Eastern States who are able to maintain or acquire special trade outlets for their products or who have special local marketing advantages. The increasing supply of eggs coming on the eastern markets from this and other regions of the country is forcing winter egg prices to lower levels. A note of warning seems timely for those specialized poultrymen of this and other regions whose earnings have depended more upon high egg prices than upon economical methods of production and efficient marketing.

On the Pacific coast, the outlook for egg producers, at least for 1927, appears to be good. The specialized egg producers of that region are meeting the handicap of distance from eastern markets by efficient marketing organizations, standardization of product, and a high average egg production, particularly during the winter months. If the present trend of egg production continues, and all indications are that it will, shipments of Pacific coast eggs to eastern markets will be at least 10 per cent greater in 1927 than in 1926, but a larger proportion of the product than usual will be marketed in cities other than New York.

In the North Central States, where about 52 per cent of the Nation's egg crop is produced, mostly by farm flocks, production continues to increase gradually. In some sections, organizations and individuals are giving increasing attention to the improvement of quality of product and to more efficient marketing methods. Weather conditions and the feed supply will be important factors in determining the production.

In those regions of the country where there is an apparent tendency on the part of many people to expand the poultry industry to meet emergencies caused by recent low prices for certain staple farm products, those contemplating specialized egg production should seriously consider the question of available market outlets for their products.

Poultry production appears to have been heavier in 1926, which is reflected in an 11 per cent increase in the receipts of dressed poultry at the five principal markets. Prices for dressed poultry were relatively high, averaging about 2 to 3 cents per pound higher at New York than in 1925, but prices since the first of the year have averaged lower than in the corresponding period of 1926.

Stocks of frozen poultry on January 1 were the largest on record, amounting to 144,000,000 pounds, compared with the previous peak of 138,000,000 pounds on February 1, 1925. This total is over 31,000,000 pounds greater than total

stocks of frozen poultry last year and over 35,000,000 pounds greater than the five-year average. All classes of poultry share in this increase.

The present supply of poultry feeds for the larger part of 1927 appears to be sufficient to maintain prices at or near the 1926 level.

Indications are that business activity for 1927 may not be quite equal to the record levels of 1926, but any recession that might occur is not likely to be either sufficiently severe or sufficiently long in duration to affect seriously the per capita demand for eggs and poultry. The annual growth in population normally increases the demand to some extent.

FEED GRAINS AND LIVESTOCK

The prices of livestock and livestock products at the present time are at the most satisfactory level since pre-war days. Even at this level, some of the products are below the general level of prices of industrial commodities as measured by the index number of nonagricultural wholesale prices. Any material increase in numbers will reduce livestock prices and will tend to decrease the total income from livestock production.

Feed production during the last two years has been so great, relative to the livestock to be fed, that the prices of feed crops have been only slightly above pre-war levels, and have been much below the prices of livestock. Too great an acreage in feed crops was responsible for this large production rather than high yields. About 99,500,000 acres of corn and 44,400,000 acres of oats were harvested in 1926. With average yields in 1927, a reduction of 5,000,000 acres in corn and 2,500,000 acres in oats would be necessary to reduce production to the quantities needed to meet present requirements for feed and other purposes, as indicated by the disappearance of the 1925 crops.

If the livestock production is increased to balance feed production in the Corn Belt States, decreases in livestock prices and net incomes to livestock farmers are inevitable. With some probable shifts from cotton to feed crops in the South, farmers in the principal producing States must make substantial reductions in the acreage of corn and oats if livestock production is to be held no larger than at present. To offset the probable increase in acreage of corn and other feed crops in the South, as well as to balance the feed production of the Nation with livestock requirements, a reduction of 15 per cent in acreage of both corn and oats in the principal producing States is necessary.

The acreage taken from the feed crops may well be seeded down temporarily for pasture or for soil improvement purposes. An abundance of pasture is an important factor in lowering production costs of livestock. Even where additional pastures may not yield large returns it may be advisable to increase pasture seeding. The net returns from farms that follow such practices may be increased because of the saving of labor and because of smaller operating expenses.

HAY AND PASTURE

There is no prospect for a nation-wide increase in hay requirements in 1927 because the number of hay-consuming animals in the United States continues to show a downward trend. Average yields on an acreage equal to that of last year would produce a crop approximately 5,000,000 tons larger than the crop of 1926. Such a crop would be ample for prospective requirements even though the carry over of old hay will probably be smaller than a year ago. Hay prices are only slightly higher at the present time than two years ago, when the supply was the largest on record, notwithstanding the fact that the domestic supply, including farm stocks, for the past two seasons averaged about 10 per cent less than for the three preceding seasons. If an average yield, therefore, is secured throughout the country in 1927, on an acreage equal to that of last year, farmers in general are likely to receive lower prices for the hay which they have to sell during the coming season.

Weather conditions in 1926 caused regional surpluses and shortages of hay that will have a marked influence on local prices until the new crop is available.

Drought in Minnesota, Iowa, North Dakota, South Dakota, Nebraska, and Kansas reduced the yields of all kinds of hay materially and necessitated the purchase of hay from other regions for stockyard, farm, and city consumption. Clover production was greatly reduced in the important clover area east of the Mississippi where the hot, dry summer of 1925 was extremely hard on spring sowings and where subsequent winter-killing occurred.

As a result clover hay now commands unusually high market prices in the Northern States east of the Mississippi where there is an urgent demand for dairy hay and where freight rates restrict the purchase of western alfalfa. In the northeastern part of the United States hay prices are ruling higher than a year ago because of slightly reduced production and because smaller supplies are available for import from Canada.

In the Southern States favorable weather and some increase in acreage resulted in the production of a crop of all kinds of hay considerably larger than the short crop of 1925. Furthermore, liberal supplies of relatively cheap cottonseed meal and hulls from the record cotton crop of 1926, together with a good harvest of southern-grown feed grains, are available this season for feeding purposes. Largely as a result of these conditions the Southern States are not purchasing either timothy from the North or alfalfa from the West and Southwest in such large quantities as last season. In fact, small surpluses of hay are available for shipment at some points in the South. In the Mountain and Pacific Coast States almost as much hay was produced as in 1925 and the crop is generally adequate for current requirements.

The present trend in the market demand for hay is toward increased requirements of legume hay for dairy feeding and decreased requirements of timothy and other grass hays for horse feeding. There is a strong and constant dairy demand for the best grades of alfalfa and clover hay in the Eastern and Southeastern States. Farmers who are producing hay as a cash crop and for shipment into these districts may profitably replace timothy acreage with alfalfa or clover acreage wherever soil and climatic conditions are favorable. Relatively high freight rates continue to restrict a heavy movement of hay for long distances but this obstacle may be met in part by producing and shipping uniformly loaded cars of the best grades of hay which will command prices sufficiently high to offset the high transportation costs.

So far as market hay is concerned, a general increase in acreage is not justified. Demand for baled hay is not likely to increase during the coming season unless an unexpected shortage of hay production over an extensive region should necessitate increased interregional shipments to meet urgent requirement for work stock, breeding stock, and dairy cattle. An additional acreage of alfalfa in the West for a cash crop would not yield profitable returns as the present acreage is more than sufficient for prospective market demands. Similarly, in the timothy areas of the Middle Western and Eastern States, an increase of acreage is inadvisable as the timothy acreage is now sufficient to meet the market demands.

Farmers throughout the country, however, should give consideration to the fact that productive hay and pasture acreage is of material importance in keeping livestock production costs at a minimum and in maintaining soil fertility. Old meadows of alfalfa, or of timothy and clover, that are weedy and grassy are relatively unproductive of good hay either for farm feeding or for market purposes and should be replaced with newly seeded acreage. In regions where the carry over of hay will be small this spring, some increase in acreage is advisable to replenish farm reserves. The chronic shortage of high quality alfalfa, clover, or other legume hays for dairy feeding in the East and South-east suggests an increase of their acreage in substitution for nonlegume hay acreage.

In areas where it is desirable to reduce the acreage of feed grains, such acreage may well be seeded down for pasture or soil-improvement purposes. Additional pasturage would lower the costs of livestock production and would utilize land that might otherwise be idle. Crops sown for soil-improvement purposes, even if livestock are not available to pasture the land, would yield future income through increased soil fertility. The relatively low prices for alfalfa, sweet clover, lespedeza, and soy-bean seed suggest the seeding of alfalfa, lespedeza, or soy beans for hay; of sweet clover for pasture; and of sweet clover or soy beans for plowing under, in many localities.

FEEDS

Supplies of feed grains, hay, and by-product feeds are generally adequate for feeding requirements this season and prices on the whole are about the same as a year ago or slightly lower. Only about the usual seasonal advance seems probable for feed grains. Feedstuffs prices are now materially higher than they were earlier in the season, but further sustained advances seem unlikely, assum-

ing an average winter and spring season, since the supply of these feeds is likely to be about the same as a year ago, or slightly larger, whereas the number of animals to be fed is smaller.

The combined tonnage of feed grains available for the 1926-27 season, including corn, oats, barley, and grain sorghums, is about 5 per cent smaller than a year ago and hay supplies show a reduction of 6 per cent, but this decrease is partially offset by further reductions in the number of animals on farms. Increased crops of feed grains and forage in the South have materially reduced the demand for feed from that region, but reduced harvests in the western Corn Belt States and some far Western States are causing some movement of grain and hay into those sections.

Prices of wheat feeds are now higher than a year ago, heavy milling and lower prices early in the season having been counterbalanced by increased takings. Offerings, of late, have hardly been equal to buyers' requirements. Supplies in storage are apparently a little smaller than they were a year ago, but the same quantity of feed, or a little more, is likely to be milled during the rest of the season. Offerings of Canadian feed continue of good volume, and about the same quantity as last year may be expected from this source. Therefore, prospects are that supplies of those feeds for the rest of the season will be adequate, and no further material advances in price are likely.

With a crop of cottonseed about 15 per cent larger than last year, and with an unusually large proportion still to be crushed, prices for cottonseed meal for the rest of the season will probably average lower than for the corresponding period last year. Liberal supplies early in the season forced prices to the lowest level since the World War. Heavy consumption, however, resulted in rapid absorption of the larger supplies, and prices recovered materially from the low point. Exports for five months, one-third larger than a year ago, have reduced the domestic supply to an amount about 12 per cent larger than a year ago. It appears that ample supplies of cottonseed meal will be available for the rest of the season, as, from a crop over 1,000,000 tons larger than last year, only about 400,000 tons more of cottonseed had been accounted for through crushers to January 1 than had been crushed a year ago.

Linseed meal supplies will probably be large enough to prevent material price advances. Although the domestic crop of flaxseed was smaller than the 1925 harvest, the demand for linseed oil and the liberal supplies of flaxseed available in Argentina indicate that plenty of this feed can be had till the 1927 crop moves to crushers, providing its price in the United States is sufficiently high to offset the drawback of about \$5 per ton allowed on the export of linseed meal crushed from imported seed.

Heavy production of starch, sirup, and such corn products has resulted in a large supply of gluten feed and meal, which has helped to reduce prices of this feed well below the level of a year ago. Supplies of hominy feed also seem adequate at prices practically the same as prevailed during last spring.

Offerings of alfalfa meal have been more than equal to the limited demand which has developed for this feed at prices around 10 per cent lower than at this time a year ago.

Tankage prices are being well maintained at a level that is \$10 a ton higher than prevailed a year ago for 60 per cent digester tankage, and trade reports indicate that the smaller output has been well absorbed.

Demand for feeds this winter is generally lower than it was a year ago. Feed crops throughout the South and Southwest were generally excellent in 1926, and hence much less purchased feed was needed and the lower income from cotton has still further reduced demand in that section.

POTATOES

There is a serious probability that an excessive acreage of potatoes will be planted in 1927. Reports received from farmers show that a tendency to increase the acreage exists in all parts of the country, the acreage expected on the farms reported to date showing a net increase of 13 per cent. With average growing conditions, such an increase in acreage would result in much lower prices to growers.

In considering the potato situation the fluctuations in acreage and yield during the last few seasons must be kept in mind. The high price of potatoes in 1921, when other crops were bringing low returns, led to the planting of an excessive acreage in 1922, and to the production of a bumper crop. The following season the acreage was sharply cut but a good yield was obtained

and prices continued low. In 1924 the acreage was again greatly reduced, but the yield of nearly 127 bushels per acre was by far the highest ever harvested and the resulting low prices caused great losses to the growers. Again the acreage was reduced, the 3,092,000 acres planted in 1925 being the smallest potato acreage in more than 20 years. As the yield was rather light, a very high price was obtained and the small crop was worth much more than the very large crop of the preceding year. In 1926 there was only a small increase in acreage, a larger increase being prevented by the high cost of seed and by the fear of a repetition of overproduction and low prices.

The acreage has now been abnormally low and the price correspondingly high for two seasons in succession. The price received by farmers on December 1, 1926, averaged \$1.42 per bushel, and the year previous it averaged \$1.87, whereas previously potato prices have rarely been high for two years in succession. Under the circumstances a general increase in planting seems inevitable, the size of the increase depending largely upon the price at planting time and upon the extent to which individual farmers readjust their plans in consideration of what other farmers are planting.

Average yields per acre and average quality have been increasing during recent years because of seed improvement and changes in methods of cultivation. Market demands can now be supplied with fewer acres than were formerly needed. If the acreage this season is increased to about three and a third million acres it would be about 6 per cent above that grown last year and about equal to that grown in 1924. Assuming a yield of 112 bushels per acre, which is about what can now be expected with average weather conditions, this acreage would result in a crop of about 370,000,000 bushels as compared with the 356,000,000 bushels produced in 1926 and the 422,000,000 bushels produced in 1924, when many millions of bushels went to waste or were utilized only for feeding livestock and other low-value purposes. If the acreage this season is increased by 13 per cent, in accordance with the present plans of the growers reporting, there would be about an even chance that production would exceed 400,000,000 bushels, depending, of course, upon weather conditions. Allowing for present per capita consumption, freight rates, handling and retailing costs, this production would result in greatly reduced prices to farmers. Production could not greatly exceed this figure without reducing the price in some localities to about what the potatoes are worth as feed for livestock.

In the spring of 1926 growers of early potatoes in most Southern States took advantage of the very light holdings of potatoes in the Northern States and planted a large acreage of early potatoes. This year holdings of old potatoes, although rather low, are heavier than they were a year ago and there is consequently less assurance of good prices. While an acreage of commercial early potatoes slightly larger than the average acreage during recent years is perhaps justified in States south of Virginia, the chances are that an acreage as large as that of last year would result in prices somewhat lower.

SWEET POTATOES

An increased acreage of sweet potatoes this season should be planted only by those growers who need the increased supply for their own use, or who can dispose of the crop on their local markets, or who can afford to produce a crop for sale at relatively low prices. Growers should not forget the rather low returns obtained from sweet potatoes in 1915, 1921, and other seasons when the acreage was increased because of low returns from the previous cotton crop.

Returns from sweet potatoes were not very satisfactory to growers in 1926, but prices during the preceding two years were unusually good, and in view of the outlook for cotton there is a great probability that, unless prevented by unfavorable weather at planting time, growers in many parts of the Cotton Belt will raise more sweet potatoes this year than can be utilized locally. The surplus available for shipment is likely to find the market demand even less than it was during this season.

In the important commercial sweet potato area which extends along the Atlantic coast from Virginia to New Jersey the outlook depends largely upon the acreage of the dry-fleshed type of sweet potatoes grown there for shipment to northern markets. This region has less than 10 per cent of the United States acreage, but usually produces more than half of the sweet potatoes shipped by rail. In this section a largely increased acreage in 1926 was accompanied by a large yield per acre, and low prices have been received. As keener competition

both from potatoes and from the moist-fleshed sweet potatoes grown in other States is to be expected next fall there seems nothing to indicate that it will be profitable for growers in this section to plant more than their usual acreage. This will mean a reduction of about 10 per cent from the acreage planted in 1926.

CABBAGE

The total production of cabbage in 1926 was a little less than 1,000,000 tons and was slightly above the average for the five-year period 1922 to 1926. This quantity seems to represent approximately present market requirements, and during recent years any production materially in excess of it has resulted in prices so low that planting has been reduced the following season. The total annual production for the five-year period for 1922 to 1926 has varied between 800,000 and 1,089,000 tons, with a production of 982,000 tons last season. It appears that any increase over the 1926 acreage is likely to result in production above the five-year average of 970,000 tons, with accompanying lower prices.

Production in the late-cabbage States appears to be particularly closely adjusted to demand. Thus an increase of only 8 per cent in production over 1925 resulted in appreciably lower returns to growers. It is apparent that a decrease in production is likely to result in increased returns per ton and that any appreciable increase means lower prices.

In the early shipping States, where slightly over one-fourth of the tonnage has been produced during the past two years, there is a tendency to sharper fluctuations in acreage, with a doubtful benefit to growers. Relatively high prices received by growers in these States the previous year, or relatively high prices received for the cabbage grown in Northern States in the fall, frequently have led to too great confidence and to overplanting. This season, with large supplies of late cabbage reported in commercial storage and in growers' hands, and with an indicated increase in the acreage of about 20 per cent for early cabbage in Florida and Texas, the southern grower does not appear to be in as favorable a market position as he was in 1926.

Yearly adjustments of the early acreage, to offset both heavy or light production and the quantities entering storage in the late States, are desirable. Growers in the early and midseason sections should obtain information from competing sections before deciding on the acreage to plant.

ONIONS

A sharp cut in the acreage of main-crop onions is needed to avoid overproduction such as probably would have occurred last season but for rather light yield and extensive crop damage which probably will not be repeated in 1927. Total onion planting exceeded the 10-year average by 20 per cent. Acreage of the main-crop States was 26 per cent greater than for either of the two years preceding and the trend in most leading States is upward. An average yield of good quality would have brought a record-breaking production, such as has almost invariably resulted in disastrous market conditions, for the demand for onions is closely limited and does not vary greatly from year to year.

With average crop conditions, the present outlook is rather favorable for Bermuda onions. The acreage is reported to have been cut fully 10 per cent, but is still somewhat above the average of recent seasons. The seasonal price always varies considerably not only with the production but with the quality and condition of the crop, the earliness or lateness of the season, the control and distribution of shipments, and the extent of foreign competition. Competition in the early part of the season will be mostly from storage stocks in the North. In the latter part of the shipping season early importations from Egypt will furnish the bulk of the competition. Early reports suggest some reduction from last season's acreage of Egyptian onions.

BEANS

A danger point to bean growers was reached in 1925 and 1926, when plantings were large enough to produce, with average yields, several million bushels above the consumptive requirements of recent years. Unfavorable seasonal conditions so reduced the production of cleaned beans in both years, however, as to offset, to a considerable extent, the excessive acreage. Another

unfavorable growing and harvesting season can not be assumed and the need is clear for a sharp reduction in acreage, varying with the type of bean grown.

A repetition in 1927 of last year's planted acreage would, with average yields, produce about 20,000,000 bushels, or about 4,000,000 bushels in excess of present apparent needs for domestic consumption. The estimated 1926 total production of 17,100,000 bushels, which is 2,800,000 bushels less than the 1925 crop, contained between 15 and 20 per cent of damaged beans compared with 10 to 15 per cent in 1925, and less than 5 per cent in ordinary years.

The total production of pea and medium beans in Michigan and New York is about 20 per cent less than in 1925. Losses from weather damage were even greater in 1926 than in 1925 and on a hand-picked basis the present production is estimated at about 4,500,000 bushels compared with 5,500,000 bushels in 1925. A considerable carry-over of 1925 beans in Michigan was marketed during the fall of 1926. The big 1925 crop forced pea bean prices to low levels and, with no reduction in the 1926 acreage, they remained low. Severe field losses to the new crop led to a sharp increase in prices in October, but high moisture content and heavy pick has greatly reduced the growers' returns. Prices at the beginning of 1927 were about the same as they were a year earlier.

The steady increase in the canning of "pork and beans" has helped to furnish a market for the increasing production of this variety. The present supply of cleaned pea beans is not in excess of the demand, but an average yield on another acreage equivalent to that planted last year would result in a surplus supply which would be likely to prove demoralizing to the pea-bean industry.

Despite somewhat reduced production of red kidney beans, owing to the unfavorable season, the price of the ordinary variety is slightly less than it was a year ago and the price of the dark red variety has markedly declined. The acreage was apparently too great in 1926.

The production of great northern, on a slightly reduced acreage, is about a tenth less than it was in 1925 and the crop is being absorbed at prices apparently about the same as last year. The price of Pintos is relatively high because of the decrease in production, but had it not been for the drought in Colorado, the one-fourth increase in acreage in 1926 would have resulted in much greater production and in correspondingly lower prices.

The largely increased acreage of Lima beans, with good yields, in 1926, gave a supply far in excess of normal demand. Prices have declined rapidly and are now the lowest since 1923, which suggests the need for radical reduction in acreage this year. The present low prices of California blackeye beans following two years of heavy production, give no encouragement for heavy plantings this year.

FRUITS

The present trend of fruit production is upward and there is little on which to base hope for any marked improvement in prices over those obtained during recent years. But the uniformly favorable weather conditions which were largely responsible for the very heavy fruit crop of 1926 are not likely to occur very often.

In 1926, the total production of all fruits and melons combined was close to 15,000,000 tons or a fourth greater than in 1925. Apples came closer to being a uniformly full crop than in any season during the 45 years for which comparable figures are available. Peach production per tree was also close to the 40-year record. The grape and pear crops exceeded all records, because of increasing acreages on the Pacific coast and a heavy yield in eastern sections. Good crops of watermelons, cantaloupes, and strawberries, and a fair supply of citrus fruits further complicated the marketing situation. The production of fruit per capita was probably the highest in a generation. There was an abundance of local supplies in all markets, leaving the principal producing sections with a reduced number of customers for their large crops.

CITRUS FRUITS

A large increase in the production of both oranges and grapefruit is in prospect. No great increase in lemon production is anticipated, but supplies of fresh fruit are already in excess of present market requirements.

Any increase which may occur in California orange production will probably be in the Valencia rather than in the Navel crop. In Florida, fully one-third of the trees are not yet in bearing and a considerable part of the bearing trees are not yet in full bearing. A large increase in the total production is almost inevitable.

A large increase in grapefruit production is also indicated. The number of bearing grapefruit trees in Florida increased 77 per cent from 1919 to 1924. Many of these have not reached full bearing and, in addition, the 1925 census showed that almost one-fourth of the trees had not reached bearing age. Thus far Texas has not been an important factor in the production of grapefruit but there has been a tremendous increase in plantings which are now coming into bearing and which will probably increase supplies rapidly from now on.

In the absence of freezes or other unfavorable conditions the prospects for marketing the rapidly growing volume of citrus fruits at more favorable prices are not bright and for the present the outlook is unfavorable for additional plantings.

APPLES

Looking ahead, the apple industry as a whole is approaching a more stabilized condition, although returns for the 1926 crop have been generally unsatisfactory because of abnormally high yields. However, commercial plantings would hardly be justified at present except under unusually favorable conditions. Substitutions of the more promising varieties for those which have been unprofitable would be advisable in many instances.

The 1925 census showed that, during the previous 15 years, there was a considerable decrease in the number of apple trees in the United States. The rate of decrease was somewhat less during the five years preceding the census than during the previous 10-year period. Most reductions have occurred in the scattered and less productive districts or in orchards located on unfavorable sites and such plantings as have been made have been mostly in commercial sections. This has resulted in a gradual increase in commercial production but a decrease in ordinary farm production. Approximately one-fourth of the total number of trees in 1925 were under bearing age and this is probably not more than enough to maintain the present number in bearing. There are, however, many orchards which have not yet reached full bearing.

The average yield per tree has been increasing because of the tendency to eliminate unproductive orchards and to concentrate the industry in favored locations. There has also been a marked improvement in cultural conditions and a shift toward the more profitable commercial varieties. For these reasons annual commercial production during the next 5 or 10 years may show some further increases over the average of recent years. But the increase in population, at present rates of consumption, would probably offset any increase in production for this period. Increasing production of other fruits indicates keen competition on the markets.

In the western boxed-apple States only about 13 per cent of the trees were under bearing age at the last census compared with more than 27 per cent in the barrel region. The decrease in total number of trees during the five years preceding the census was 14 per cent in the box region and 7 per cent in the barrel region. Commercial production in Western States is not likely to increase greatly during the next decade, but in the East and Middle West there may be a moderate increase during this period.

Prospects for the unmarketed part of the 1926 crop are rather more favorable than they appeared to be earlier in the season. Cold-storage stocks of apples on January 1, which were only 9 per cent greater than a year ago, were not as large as might have been expected, since the 1926 commercial crop was 18 per cent greater than in 1925. Exports to Europe are expected to continue at a higher rate than in previous years.

Such factors as the short European crop in 1926, the damage by freezing to the Spanish orange crop, and the smaller Australian apple crop, will tend to improve the European demand for American apples during the remainder of the season.

PEACHES

The upward trend in the commercial peach crop may be expected to continue during the next few years as a large number of young trees have not yet

come into full bearing. With the heavy crop of 1926, production reached an amount which resulted in unsatisfactory returns to growers in many sections. Carload shipments have more than doubled since 1920, reaching a total of about 58,000 cars in 1926, which was 41 per cent greater than the heavy movement of 1925. These increases have occurred principally in the Southern States and in Illinois and California.

In the Southern States and in the more important Middle Western States most of the trees are young. In the Western States, however, where the average life of the trees is longer there is a larger percentage of old trees. A survey of commercial peach orchards showed that for the entire country the group composed of trees from 2 to 5 years of age was 48 per cent of the total, whereas the group from 6 to 9 years was only 19 per cent of the total.

It is doubtful whether the market can absorb the prospective increased production at remunerative prices unless immediate steps are taken to improve the situation. Growers must produce fruit of high quality and give the most careful attention to grading. If the market supplies are confined to fruit of high average quality in years of heavy production more satisfactory returns to the growers will unquestionably result. There must be concerted action on the part of growers and shippers to maintain high standards and to secure the best distribution of the crop.

The effect of low prices to growers has already slowed down planting in many areas but in view of the upward trend in production the prospect is distinctly unfavorable for new commercial plantings at this time in the Southern States. As a matter of fact, it would relieve the situation in these States if trees which are past their prime or which are located on unfavorable sites were removed. It would also be well to remove trees of certain miscellaneous varieties which can not compete successfully with the standard commercial varieties which reach the markets at the same time. Such trees are not profitable at present and they are not likely to be profitable in the future.

In certain areas, particularly in the Middle Atlantic and Mountain States, limited plantings necessary to maintain the present volume of production may be justified. Growers who are considering setting out trees in 1927 should give careful consideration to the local marketing situation and should confine their plantings to standard varieties on favorable sites.

GRAPES

The outlook is for a continued heavy production of grapes, and the setting out of vineyards except where conditions are extremely favorable would seem unwise.

California is by far the leading State in the grape industry, having produced 87 per cent of the United States grape tonnage, and shipped 82 per cent of the United States movement of 78,000 cars in 1926. Few vineyards have been set out during the past few years and only about 4 per cent of the California acreage is nonbearing. Prospective production from vineyards which have not reached full bearing is so great, however, that the problem of finding a satisfactory market during the next few years will probably continue difficult.

There is a rapidly increasing production from young vineyards in the Ozark region. Car-load shipments from Arkansas and Missouri in 1926 totaled over 1,900 cars which is more than four times the average shipments of the previous two years. The indications are for further increases in the commercial crop from these States.

In other areas there is a possibility that a small amount of new plantings in the most favored locations might be made with a reasonable chance of success especially where roadside markets have become a factor in disposing of the crop. Eastern grapes, however, will continue to meet strong competition on the markets from the California crop.

STRAWBERRIES

With average yields in 1927, it seems likely that returns per acre to strawberry growers will be considerably less than the average for the past two years. Acreage has increased considerably during this period and caution should be exercised by growers who contemplate increasing their acreage this spring.

In the Southern and mid-season States indications are for an acreage for harvest in 1927, 22 per cent greater than that of 1926 and 18 per cent greater

than the 1923-1926 average. The earliest shipping States have an indicated increase over 1926 of 15 per cent and Arkansas, the Carolinas, Tennessee, and Virginia show 26 per cent more acreage than in 1926. The next States to ship, including Delaware, Maryland, Illinois, Kentucky, and Missouri, will probably harvest a 21 per cent greater acreage than in the previous year. Late States have also shown a tendency to increase plantings. The expansion over 1926 has been especially marked in Arkansas and Missouri. Increases have also been large in Tennessee, Louisiana, Illinois, and Maryland.

CANTALOUPE

The cantaloupe situation during the past few years indicates that a duplication of last season's acreage in the early areas will be likely to result in prices unsatisfactory to the majority of growers, although a repetition of widespread damage by mildew in the Imperial Valley of California would affect the situation.

In the intermediate shipping group of States prices generally were higher than in 1925 mainly because of the early closing of the Imperial Valley shipping season and the rather late beginning of heavy shipments from Colorado. It is to be hoped that this fairly satisfactory outcome will not lead to an undesirable increase in acreage. In fact the industry would be on a more stable basis if small decreases occurred, as it seems very improbable that last year's conditions will be repeated in 1927.

The situation in the late-shipping States is similar to that in the intermediate group. Increases in acreage would appear not to be justified except where local conditions seem favorable. In Colorado the growers were especially fortunate in market conditions in 1926. If the past season's experience does not lead to overplanting, the marketing outlook for this year's crop in the late States should not be greatly different from what it was last year.

WATERMELONS

Prices received for the 1926 crop of watermelons give every indication that slight reductions in acreage would be to the benefit of the industry and that the present acreage can hardly be maintained and certainly can not be increased without the prospect of lower prices that were received last year. A 23 per cent increase in production of watermelons last season resulted in a 38 per cent reduction in the average price per car to growers and in a decrease of over \$3,000,000 in the total farm value. Further, it is significant that this reduction occurred in States where production was less than in 1925 as well as in States where production was larger.

PEANUTS

Unless the demand for Virginia-type peanuts increases during the coming year, a repetition of last season's acreage of large-podded nuts is likely to mean another year of low prices to the growers. The present very light stocks of Spanish and runner type peanuts, however, and the profitable prices being received, suggest that as much as 25 per cent more land might be planted to these small and medium podded types than in 1926 and the increased output marketed at reasonably satisfactory prices.

The carry over from the 1925 crop was very light in the Virginia-North Carolina section and imports of large-podded nuts during the 1925-26 season were little more than half the imports for the preceding season. Further, domestic production of Virginia-type peanuts in 1926 fell off nearly 10 per cent from the 1925 figures. Yet prices opened low in November, and have since risen only slightly.

The carry over of Spanish and runner types of peanuts at the beginning of the 1926 season was negligible. Opening prices showed a profit to the farmer, and though they later dropped for a while in sympathy with the weak cotton market, a reaction upward soon set in. Stocks of unshelled peanuts of Spanish and runner types are now so low that most shelling plants in the Southeast will probably have to close down for lack of supplies long before new-crop peanuts are available. An increase in the planting of Spanish-type peanuts in the Virginia-North Carolina belt, as well as farther south, would probably be profitable.

CLOVER AND ALFALFA SEED

The available supply of red and alsike clover seed is the lowest in 25 years and the prices are next to the highest on record. There have been four consecutive small crops of red clover, which in 1926 culminated in the smallest crop ever recorded. As large an acreage of red clover as possible should be harvested for seed this year because of the depleted stocks, smaller potential acreage from which seed may be harvested this year, decided preferences of many farmers for domestic instead of imported seed, and likelihood of high prices in the fall.

Alsike clover seed production might well be increased because stocks in Canada, as well as in the United States, and potential acreage for seed this year are much below normal. The increase, however, should not be so large as in the case of red clover because, if a large crop is harvested this year in Canada, prices will be depressed in the United States.

Because of prevailing high prices for red and alsike clover and the difficulty in obtaining domestic red clover seed adapted for sowing in certain regions, the attention of farmers is called to the ample supplies of relatively cheap alfalfa and sweet clover seed. Doubtless these seeds will be used considerably to replace red and alsike clover wherever soil and climatic conditions will permit, just as they were last year. Growers of alfalfa and sweet clover seed should bear in mind that such extensive substitution may not continue after prices for red and alsike clover decline. The production of alfalfa and sweet clover seed during the past two or three years has been more than sufficient to meet the increased demand.

The total clover seed production, exclusive of sweet clover, is estimated at only 47,820,000 pounds, compared with 66,780,000 pounds in 1925, 57,480,000 in 1924, and 71,032,000 pounds, the average for the five-year period (1921-1925). The unusually small crop of red clover seed in 1926 was caused by a marked reduction in acreage, as yields averaged the same as in 1925 and more than in 1924. With the staining of imported red clover seed, as provided for under an amendment to the Federal seed law, domestic seed commands a greater premium over foreign seed than heretofore. Available supplies of red clover seed in Europe are about the same as last year but a smaller quantity is expected to be exported this year to this country.

Imports of red clover seed for the fiscal year ended June 30, 1926, amounting to 19,725,200 pounds, were third to the largest on record and about 9,000,000 pounds larger than the average annual imports for the 15 years 1911-1925. Imports from July 1, 1926, to January 15, 1927, amounting to 3,436,000 pounds plus 1,776,600 pounds to be permitted entry after staining, were larger than usual but much smaller than last year for the same period. The 1926 production, carry over of old seed, and quantity already imported, plus a liberal estimate of that likely to be imported in time for spring sowing, would total approximately 10,000,000 pounds less than the average annual consumption (72,000,000 pounds) for the past 10 years.

There was little difference in the size of the 1925 and 1926 crops of alsike clover seed in this country, but the total available world supply is even smaller than last year because of the big decrease in the 1926 production in Canada. Last year large imports from that country made up much of the shortage in this country, but this year large supplies from that source will not be available. Imports from July 1, 1926, to January 15, 1927, amounting to only \$48,600 pounds, were next to the smallest on record and less than one-sixth of the five-year average (1922-1926) for that period. Prevailing prices for alsike clover seed, which are nearly 80 per cent higher than the five-year average for corresponding dates, are expected to curtail the consumption. It is estimated that available supplies would fall short by 4,000,000 pounds of satisfying the average annual requirements.

Consumption of sweet clover seed has increased by leaps and bounds, but production in recent years has more than kept pace with it. Had not unfavorable weather occurred in several important producing districts in this country and in Canada, stocks of sweet clover seed would now be burdensome. Under these conditions further increases in the acreage of sweet clover for seed production are not warranted. Imports from July 1, 1926, to January 15, 1927, amounting to 1,850,600 pounds, were about normal.

The 1926 crop of alfalfa seed, estimated at 55,000,000 pounds, was next to the largest on record, having been exceeded only by the 1925 crop. The small

reduction from the 1925 crop was caused mostly by the large decrease in Utah, which in 1925 contributed about 45 per cent of the total crop of the United States. The total acreage for seed was larger than in 1925 and the yield in a majority of the producing States was larger. The carry over of old seed is considerably larger than normal. Imports from July 1, 1926, to January 15, 1927, amounting to 1,989,900 pounds, were somewhat larger than a year ago, but were much smaller than the five-year average (1922-1926) for that period.

An increase in the acreage of alfalfa for seed this year is not justified in view of the fact that present production is sufficient to cover the expected increased requirements and similar conditions of high-priced red clover and alsike clover may not exist during the spring of 1928. A reduction in seed acreage might well be recommended if it were not for the fact that idiosyncrasies of the weather play an important part in the production of alfalfa seed.

TOBACCO

The major factors affecting the tobacco industry in 1927 are those that have been pointed out in previous outlook reports, namely, the world-wide tendency of consumers to adopt the cigarette habit in preference to other forms of tobacco consumption and the increased foreign competition with which American growers of noncigarette types are confronted. Indications of the continued drift toward cigarettes are unmistakable and are of fundamental significance to tobacco growers. Growers of cigarette tobacco have before them an expanding market, but not one that will stand heavily increased acreage, and they have no serious foreign competition, whereas the producers of dark-fired and dark air-cured export types are faced with increased foreign competition in a market which itself is undergoing contraction.

The foreign situation exhibits the same tendencies with respect to preferences that are noticeable in the domestic markets. Exports of flue-cured leaf for manufacture into cigarettes increased materially during 1926. On the other hand, exports of all dark types during 1926 were reduced from the previous year. The foreign production situation indicates that present competition in the dark types will be maintained or increased, particularly in the lower grades. Production abroad of flue-cured tobacco of the American type is negligible except in the Far East and is not expected to increase materially in the near future. The effect of these varying conditions has been to discourage growers in certain sections and to lead growers in the favored sections to heights of optimism which may lead to serious overproduction.

The producers of cigar leaf in some sections are in a better market position than they have been for several years past, but in the main there is need for still further readjustment between supply and demand. Cigar consumption is still low, but developments indicate that the foundations for rehabilitation of the cigar industry are being laid.

FLUE CURED

From the standpoint of supply, flue-cured tobacco is in the most favorable position of all American types. Exports and domestic cigarette manufactures are on an increasing scale, and the consumption during 1926 was greater than in any previous year. All present evidence points to a continuation of the upward trend in consumption of cigarettes both in this country and abroad in 1927. Great Britain and China, the largest foreign consumers of this leaf, both increased their takings in 1926.

The trade with China was carried on last year in spite of serious revolutionary disturbances which have not as yet appeared to affect the importations of tobacco, but these conditions are nevertheless a factor of uncertainty that may prove of increasing concern.

The great danger in the flue-cured situation is that growers may be led into serious overproduction in 1927. The prices paid for leaf tobacco of the 1926 crop in the flue-cured districts have been very much higher than the prices paid for cotton in the same areas. The contrast between the exceptionally good returns from tobacco and the losses incurred in cotton production is striking, and the probability is obvious that not only will 1926 tobacco growers increase their acreage in 1927 but that their ranks may be heavily recruited from among the cotton growers.

In other words, it would seem that the stage is set for a landslide from cotton to tobacco in 1927. Any such development on a large scale could have only one result—utter demoralization of the market for this type of tobacco with its attendant losses to the growers.

BURLEY

For several years the Outlook Report has pointed out the dangerous position of burley tobacco. Disappearance during the five years 1921-1925, inclusive, averaged less than 246,000,000 pounds, while during the same period production averaged 280,000,000 pounds. The production in 1926 is estimated at 312,630,000 pounds, which, added to stocks of old leaf on hand October 1, makes the enormous available supply of 778,667,000 pounds. Production in 1926 exceeded consumption by more than 44,000,000 pounds. Exports of burley, which usually are only 6,000,000 to 7,000,000 pounds, are merely holding their own.

Continued heavy production of this type, especially on soils unsuitable for the lighter grades, overlooks the manifest fact that the character of the burley outlet has undergone a radical change. Whereas its greatest use in former years was in the manufacture of chewing and pipe tobacco, with cigarettes claiming a relatively small proportion of the crop, the present market is conditioned primarily upon the cigarette trade, the manufacture of chewing tobacco having declined to a very marked extent. This decreasing outlet for tobacco of chewing grades appears to be partly responsible for the present great accumulation of stocks. Farmers will do well, therefore, not only to restrict their plantings to soils where experience teaches them that light burley may be produced, but to adopt such cultural methods and plant such varieties as will insure the minimum production of the darker and heavier grades of leaf. It should be emphasized that total production of burley tobacco is on too large a scale and should be reduced.

GREEN RIVER

The acreage of Green River type was cut sharply in 1926 and the statistical position has been improved. The available supply of leaf is less than it has been for a number of years, and recent reports indicate that the price is showing some improvement. The stocks on hand on October 1 were 51,711,000 pounds, the lowest of any year since 1922, but higher than for any year previous to that. The outlook for 1927 may be considered fair for a crop of about the same size as was produced in 1926.

ONE-SUCKER

The outlook for one-sucker tobacco is extremely discouraging. It is used mainly in the manufacture of plug and twist chewing tobacco, in the manufacture of snuff, and in the rehandling trade with the West Coast of Africa. The disappearance of this type during the year ended October 1, 1926, was the lowest of any year for which statistics are available, excepting only 1917. Notwithstanding the fact that production has decreased 40 per cent during the past three years, consumption has decreased to such an extent that accumulated stocks on October 1, 1926, were the highest on record. The whole situation is such as to indicate the need for a drastic readjustment of the scale on which this crop is produced.

VIRGINIA SUN-CURED

The immediate outlook for Virginia sun-cured tobacco is favorable provided a slight reduction in acreage is put into effect in 1927. This exclusively chewing type is confronted by a constantly narrowing outlet because the chewing habit is decreasing.

Production has been on a decreasing scale, particularly since 1918, which year also marks the beginning of a pronounced decline in the manufacture of chewing tobacco. The acreage was increased about 11 per cent from 1925 to 1926 and in the latter year there was an unexpectedly good yield, resulting in a decline of about 50 per cent in price per pound. Since the present relatively large supply is caused in part by the heavy yield per acre in 1926, a radical reduction in acreage does not seem justified.

MARYLAND TOBACCO

The market for the Maryland type is expanding gradually, although the disappearance is considerably below that of the period immediately following the World War. So long as the scarcity of labor continues to be a limiting factor, there appears to be little danger of overproduction. Tobacco of cigarette quality is selling at good prices and the outlook for these grades appears to be good.

DARK FIRED TOBACCO

The outlook for the dark fired tobacco of Kentucky, Tennessee, and Virginia is the most discouraging of recent years. The Outlook Reports for 1924 and 1925 both called attention to the situation confronting the growers of these types of tobacco. Production has decreased somewhat, particularly in the Paducah district of Kentucky and Tennessee, in spite of which the stocks of dark fired tobacco in the hands of dealers and manufacturers are increasing steadily, and on October 1, 1926, they were the highest October 1 stocks on record, except in 1918, when they were affected by war conditions. In contrast to this, the production in 1926 was about 172,000,000 as compared with 197,000,000 pounds in 1925, 199,000,000 in 1924, and an average of 236,000,000 pounds for the five-year period from 1916 to 1920.

On the demand side two factors stand out as important. (1) The foreign production of tobacco has increased in recent years, and much of this tobacco is being used where American dark-fired tobacco was formerly used. This production is being encouraged by present foreign tariff rates. (2) Foreign as well as domestic consumers are using more cigarettes and are using relatively less tobacco in other forms. Dark-fired tobacco is perhaps at a greater disadvantage than any other type, because of this change in demand. It may be noted that there is a slight improvement in the German market for this type of tobacco.

It now appears that most growers of dark-fired tobacco will receive less than 10 cents per pound for the 1926 crop. With tobacco at less than 10 cents per pound, most of these farmers will find it profitable to devote to other enterprises a part of the land and labor now being devoted to tobacco. The undertaking or expansion of alternative enterprises and the improvement of the quality of the tobacco appear to be the only remedies for the present dark tobacco situation.

CIGAR TYPES

Cigar consumption is to some extent cyclical in character. In the past, peaks of wages and employment have usually indicated peaks of cigar consumption. The last such peak was in 1920, following which there was a very severe decline, with a partial and short-lived recovery in 1923. Certain trends within the cigar industry are of especial significance to growers. Cigar consumption in the United States for the first 11 months of 1926 appears to be slightly larger than during the corresponding period of 1925, but is slightly less than the corresponding period of 1924.

Consumption of cigars in class A (5 cents) and class C (more than 8 but not more than 15 cents) is increasing, but the increases are in large part offset by the declining consumption of the intermediate grade, class B (more than 5 but not more than 8 cents).

A further trend is the continued increase in the use of Porto Rican fillers, which to some extent appear to be supplanting Cuban leaf, but probably also are competing with fillers from the Connecticut Valley.

It is probable that some former class B cigars are now in class C. For the most part, however, they have either been abandoned or modified and put in class A, the effect being to raise the average quality of the group. Class A cigars therefore, are significant chiefly because of their increasing variety and improving quality, by reason of which their competitive strength in relation to cigarettes is greatly enhanced. In place of the short-filler cigars of decidedly mediocre quality which have represented class A since the World War, more and more long-filler cigars of good quality are appearing on the market, priced at 5 cents each. Upon this development more than any other, seems to rest the hope for a revival of the cigar industry and the hopes of growers in most of the cigar-leaf areas. To exploit this field properly will require the cooperation of growers and manufacturers. The betterment of quality of leaf will require effort on the part of growers, and reduction of production costs will require the united intelligent efforts of both growers and manufacturers. This situation is being helped somewhat by the recent reduction of the internal revenue tax on cigars and by the improvement of machines for manufacturing cigars.

NEW ENGLAND TOBACCO

A condition of oversupply has existed in New England tobacco for several years. Relatively high consumption in 1926, coupled with relatively low production, has materially benefited this situation, but the available supply of leaf is still large when compared with 1922 and previous years, and the present improved market situation can easily be dispelled by a return to heavy production. The general situation is such as to suggest that farmers make no increase

in acreage in 1927, but rather restrict their plantings to the best soils and strive for betterment of quality. The increasing importance of class C cigars and the decreasing importance of class B cigars may have direct bearing on this point. The same suggestions apply to the cigar-leaf areas in Georgia and Florida.

The Wisconsin tobacco situation has been improved during the past two years by the reduction of old stocks. Production has been on a lower scale, and that in 1926 was the lowest in many years. The total potential supply on October 1, 1926, was 126,533,000 pounds compared with 155,000,000 pounds, the average of the five preceding years. The improved situation is due to the fact that consumption has been greater than production for several years. The stocks of leaf are still higher than for a long series of years up to and including 1920, and therefore the greatest good will result from a policy of moderate acreage and high quality rather than from a policy of large acreage and a high proportion of stemming crops.

The principal type of Pennsylvania tobacco is used for fillers in 5-cent cigars. Overproduction was the rule for several years until 1926, and stocks of leaf are still large. Last year was the first year since 1920 that consumption was equal to or greater than production. Pennsylvania farmers have an exceptional opportunity to reestablish their tobacco market. The outlook is for a continued growth of the 5-cent cigar business, which is their field. To profit from this opportunity, however, will require, first, a further restriction of production until the great accumulation of old stocks is materially reduced, and, second, the production of better grades of leaf. The tendency in class A cigars is toward long fillers and pre-war qualities, and the low grades of leaf will be a drug on the market. The Havana seed of Pennsylvania and New York is of binder type and the production appears to change but little from year to year.

In the Miami Valley depression is great and to some extent unwarranted. Progress has been made in reducing stocks, and the low prices paid for 1926 tobacco were largely caused by the poor quality. The same factors discussed under Pennsylvania apply to the Miami Valley, however, and the same general conclusions are to be drawn. It is recommended that farmers adhere to their policy of moderate acreage, but give especial attention to improving the quality of their crop.

SUGAR

With world sugar production for the current season below that of last year and consumption apparently increasing, the trend of sugar prices seems to be toward higher levels. In well-established sugar-beet districts, where adequate yields can be expected, growers who can obtain satisfactory contracts will probably find it advantageous to increase acreage up to factory capacity. Louisiana cane planters who have a supply of seed cane of disease-resistant varieties will also probably find it advantageous to increase acreages.

Indications are that the world sugar crop for the current season will be about 6 per cent below that of last year. The decrease is partially offset by increased stocks but consumption, which has been steadily increasing, may be expected to absorb a large part of them, leaving a small carry over at the end of the present season.

The 1926-27 world sugar crop is roughly estimated at 25,800,000 short tons or 1,662,000 short tons below that of last season. The decrease from last year is mostly accounted for by reductions in the important sugar exporting countries of Czechoslovakia, Cuba, and Java. The reduction in sugar production in these three countries alone is 1,318,000 short tons.

The decrease in world production appears to be partially offset by an increase in carry over from the previous season. Carry over and stocks on September 1, 1926, at the United States refining ports, at all points in Cuba, and in eight important European countries amounted to 3,179,000 short tons as compared with 2,383,000 short tons on the same date in 1925.

Consumption in most countries, however, has been steadily increasing in recent years, and it seems reasonable to expect that it will continue to do so in the coming year. Consumption in 11 European countries, for which data are available, increased from 6,622,000 short tons during the 1924-25 season to 7,055,000 short tons during the season just closed. Reports for some of these countries in previous years indicate a similar increase. In the United States consumption is also increasing. The indicated sugar disappearance in the United States has increased from 5,656,000 short tons in 1923-24 to 6,560,000 in 1924-25 and 6,669,000 in 1925-26. It seems probable that unless prices rise sufficiently to prevent it, the carry over from the 1925-26 season will be practically absorbed and that minimum stocks will remain at the end of the present season.

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THE AGRICULTURAL OUTLOOK FOR 1928

Prepared by the Staff of the Bureau of Agricultural Economics

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PURPOSE OF THE OUTLOOK REPORT

This report presents a summary of the best available facts bearing upon conditions which farmers will probably face when products of the coming season's operations are ready for market. All available information regarding each farm product has been carefully studied from the national point of view and the suggestions which follow are based on the most logical conclusions from these facts.

These statements are designed to help farmers to make sound plans for the year's operations prior to planting and breeding time. The report is also designed to be used by workers in the agricultural colleges, experiment station and extension services in preparing outlook reports for particular States and regions. An attempt has been made to bring together facts on world-wide and nation-wide conditions which may not be readily available within a State. These statements necessarily represent the national point of view and, in many instances, must be modified to meet local conditions.

It is recognized that adjustments by farmers of acreage or of breeding plans can not alone assure satisfactory outcome for the season. Every effort must be made at the same time to produce efficiently the qualities of products that are demanded by consumers. By using outlook information farmers may avoid the losses which come from extreme variations in acreage, either in the form of increases or decreases. They may also plan their operations with a view to foreign competition and demand, which are summarized in the following statement.

In the preparation of this, the Sixth Annual Agricultural Outlook Report, all of the facilities and the entire staff of the Bureau of Agricultural Economics have been drawn upon. Assistance was rendered by representatives of other bureaus of the department and by representatives of the agricultural colleges, experiment stations, or extension forces of 21 States who participated in the conference in Washington at the time the report was prepared.

State and regional outlook reports are being prepared this year by 21 or more States to interpret the facts of the Federal report in terms of the needs of the farmers of these respective States. Any farmer who receives a copy of the Federal report is urged to secure a copy of the report distributed by his State extension service and consider its recommendations in connection with the following.

SUMMARY OF THE OUTLOOK

Some improvement in agriculture is expected for 1928 if farmers avoid expansion of production and continue their efforts to balance production with demand. A summary of the recommendations on leading crops and livestock follows:

DOMESTIC DEMAND

The agricultural industry as a whole may anticipate a domestic market situation for the 1928 production at least equal to that of the present winter, with the possibility of some improvement.

FOREIGN COMPETITION AND DEMAND

Foreign demand for the agricultural products of 1928 probably will be no better than it was for those of 1927. The purchasing power of foreign consumers seems likely to be no greater than during the present season and foreign competition is likely to be greater.

AGRICULTURAL CREDIT

The agricultural credit situation in most sections of the country is somewhat improved over that of a year ago. The credit supply in financial centers continues abundant and rates on commercial loans and investments have shown further decline.

FARM LABOR AND EQUIPMENT

Farm labor will probably be available in a slightly larger supply at least during the first half of 1928. Farm wages and the prices of farm machinery are not likely to change and building materials when purchased in quantities probably will be lower than last year.

COTTON

When American cotton growers begin to market the 1928 crop, it is probable that they will meet the relatively favorable condition of a smaller carry-over than last year, and a demand situation about the same as for the 1927 crop. The danger of damage from boll weevil still exists in spite of the extremely low temperatures in January and still looms as a material factor in determining yield per acre. Cotton growers have in their own control the determination of acreage and to the extent to which they increase their acreage over that planted in 1927 they will tend to reduce the total return from the 1928 crop.

WHEAT

The world wheat crop will probably again be large if average or better than average yields are secured. Unless there is heavy winter killing in hard winter wheat areas any material increase in the acreage of hard red spring wheat in the United States will further tend to increase the world supply for market next fall and winter, and probably reduce returns to growers as compared to 1926 or 1927. The outlook for durum wheat is quite uncertain, but increased competition is in prospect.

RYE

Although the present prospects are for some increase in the world's rye acreage next year, as all countries reporting to date show some increase in acreage seeded for harvest in 1928, the present situation is not likely to be materially changed in 1928 unless high yields are realized in Europe.

FLAX

Flax acreage can be expanded profitably to replace other spring grains grown in the same area.

RICE

Rice acreage though reduced last year, produced a large crop and further reduction in acreage seems advisable.

OATS

Oats are likely to meet a less favorable market in the next crop year since present prices are largely due to below-average yields for two years.

BARLEY

Barley is unlikely to bring as high prices in 1928 as in 1927 when there was a shortage of feed grains in Europe.

CORN

Corn acreage for the entire country in 1928 will probably show little change from last year if normal weather prevails at planting time. With average yields a 1928 crop about equal to 1927 may be expected and with a more normal geographic distribution of the crop prices are more likely to approach the average for the 1926 crop than those which have prevailed to date for the 1927 crop.

BEEF CATTLE

Beef cattle for slaughter and as stockers and feeders seem reasonably certain to meet a market in 1928 that will average higher than in 1927, although the peak prices of that year may not be equalled. Market supplies of cattle in 1928 will probably be 6 to 10 per cent smaller than in 1927.

HOGS

Hog prices seem likely to show some strengthening, but no very material change beyond the usual seasonal fluctuations until next fall and winter, when market supplies will probably be affected by the curtailed production resulting from the present unsatisfactory price situation. Some improvement in domestic demand for pork is anticipated, but export demand during the greater part of 1928 promises to be even lower than in 1927.

DAIRY PRODUCTS

The dairy industry appears to be in fully as strong a position as a year ago, with indications of only moderate expansion in production. Domestic demand is likely to be maintained during the coming year, and consumption is likely to continue to increase faster than production, so that the increasing foreign supplies will be further drawn upon to supplement domestic production. This seems a very desirable time for saving the better dairy calves so as to permit culling the herds closely before a material decline from the present high slaughter value of the old cows occurs.

SHEEP AND WOOL

With wool stocks in this country light, and with a strong foreign market, the outlook for wool growers appears favorable. Sheep numbers continue to increase, and prospects indicate a lamb crop for 1928 somewhat larger than a year ago. Demand for lamb is not likely to improve sufficiently to offset the prospective increase in production.

MOHAIR

Mohair producers have an immediate outlook much better than last year, but looking further ahead they should be careful not to expand production more rapidly than domestic requirements.

HORSES AND MULES

Numbers of horse and mule colts indicate further decreases in work animals for several years to come. Eventually, this reduction will reach a point where scarcity will cause prices to rise to higher levels. Increased breeding of work animals is advisable as a side line in areas of cheap pasture, east of the Rocky Mountains.

POULTRY AND EGGS

Poultry producers have favorable prospects of a higher level prices for both dressed and live poultry at least during the first half of the year because of lighter supplies in storage and prospective favorable demand. The low storage holdings of eggs and the favorable outcome of the 1927 storage season with the number of layers practically unchanged should result in higher egg prices during the coming year.

FEED GRAINS AND LIVESTOCK

Present acreages of feed crops and hay exceed the needs of present aggregate livestock numbers. Adjustment of this unbalanced situation should be in the direction of fewer acres of feed crops rather than more livestock.

HAY AND PASTURE

The continued decrease in the number of hay consuming animals, coupled with the unusually large carry over in sight from the large 1927 crop, indicates that, even should the 1928 crop be below average, supplies of hay in 1928-29 will probably exceed normal livestock requirements.

FEEDS

About the same quantity of feed grains is available for the rest of the season as a year ago; stocks of legume and other hays are unusually large, but there is a slightly smaller supply of by-product feeds. Prices of by-product feeds and feed grains therefore probably will continue higher than a year ago but hay prices much lower.

POTATOES

Potato growers in all the Northeastern and North Central States appear to be planning substantial increases in their acreages. If these intentions are carried out and western growers do not decrease their acreages more than they now plan there is little probability of returns from potatoes equal to those secured during the last three years.

SWEET POTATOES

Overproduction of sweet potatoes occurred in 1927 because of continued heavy planting in the eastern commercial region accompanied by a widespread shift from cotton to sweet potatoes in the South. A substantial reduction in acreage is needed and such a readjustment may be expected to result from the much lower price received for the 1927 sweet potato crop and from the higher prices of alternative crops.

CABBAGE

Cabbage acreage should be moderately reduced to restore the price to a better level. There is no justification for continuing the present upward trend in acreage.

ONIONS

Onion acreage in late or main-crop States, if reduced 10 per cent below the 1927 acreage, would, with average yields, result in a crop about the same size as that produced in 1925 and would likely restore the more favorable price level of that season. In the intermediate shipping States growers would hardly be justified in increasing their acreage above that planted in 1927.

BEANS

The bean crop of 1927 is apparently fully equal to domestic demands and the same acreage with an average yield would give a larger crop. An increased acreage would probably result in further reduction in prices.

FRUITS

Fruit production has reached a point where it is difficult to market these crops at satisfactory prices in years when weather conditions are favorable for good yields. In view of the very heavy losses experienced when an excessive acreage of fruit trees is planted it is hoped that future plantings will be influenced more by the long time prospects for the fruits in question and less by temporary conditions.

CITRUS FRUITS

The citrus fruit outlook indicates as did those of 1926 and 1927 a future prospect for a marked increase in the bearing acreage of grapefruit and oranges and a very large increase in their production in years when favorable growing weather prevails. In general the outlook is unfavorable for additional plantings.

APPLES

Apple production by commercial orchards for the country as a whole will continue to gradually increase during the next 5 or 10 years. There is nothing in the apple outlook to unduly discourage commercial growers who are favorably located and who produce high quality fruit at a low cost.

PEACHES

Peach growers under normal weather conditions may expect heavy production and difficult marketing conditions during the next few years. The potential bearing capacity of orchards in the southern area is so great that a considerable reduction in number of the older unprofitable trees would result in a higher farm value for the crop.

GRAPES

Grape production is likely to continue heavy for several years. Early relief for recent unsatisfactory marketing conditions is likely to be accomplished in California only by an immediate appreciable reduction in acreage. In eastern and mid-western areas increases in acreages do not seem justified.

STRAWBERRIES

Strawberry growers face a market outlook slightly less favorable than that of a year ago. With average yields, the crop this year will be one of the largest on record.

CANTALOUPE

Cantaloupe acreage needs to be sharply reduced in the Imperial Valley of California and other early areas if last year's disastrously low prices are to be avoided. Maintenance of 1927 acreage in intermediate shipping States and slight decreases in late shipping States seems advisable.

WATERMELONS

Watermelon prices during the past few years indicate that the acreage planted last year in early producing States should be slightly reduced and that in late States only slight increases appear advisable.

PEANUTS

Peanut growers in the Virginia-North Carolina section should not allow present prices to cause them to overplant Virginia type nuts. A maintenance this year of the 1927 acreage of Spanish and Runner types of peanuts in the South can be expected to result in prices reasonably satisfactory to the grower.

CLOVER AND ALFALFA SEED

The outlook for profitable marketing of alfalfa seed from the Northern and Northwestern States and of red clover seed should continue relatively favorable. For alfalfa seed from the Southwestern States and for sweet clover seed the outlook is not promising for growers.

TOBACCO

The dominating influences in the general tobacco situation are the steady increases in consumption of cigarettes at home and abroad, heavy production and increasing stocks of flue cured types, and decreased stocks in most other types of tobacco. The outlook for flue cured if acreage is increased is decidedly unfavorable. For Burley, One Sucker, Maryland and most cigar types the outlook is favorable if excessive acreages are avoided. The outlook for dark fired types does not justify material changes in acreage.

SUGAR

Present prospects for sugar point to a continuation of large world production with prices at approximately the present level through another season. Where present prices are profitable acreage may be maintained or increased.

THE AGRICULTURAL OUTLOOK FOR 1928**GENERAL AGRICULTURAL SITUATION**

In 1927 there was a better balance between the different lines of agricultural production than there has been in any other recent year. A marked exception was the continued high production of feed crops in relation to livestock numbers. Agricultural income in 1928 for the country as a whole is likely to show some improvement over that of 1927 provided total agricultural production is maintained at its present volume and farmers continue to make further adjustments toward a more balanced production. Expansion, especially in cash crops, is to be guarded against.

During the last two years the economic position of agriculture as a whole has remained not far below that attained in 1925-26. Gross agricultural income advanced from 9.2 billion dollars in 1921-22 to 12.7 in 1925-26, declined somewhat in 1926-27 to 12.1, and may be slightly higher by the end of the 1927-28 season. The gross income from agricultural production appears to have become stabilized during the last three years at 12 to 13 billion dollars, with marked annual increases in the income from some products offset by corresponding decreases from others.

Prices of farm products advanced during 1927, as shown by the increase of 10 points in the index of farm prices from 127 for December, 1926, to 137 for December, 1927. This was due largely to higher prices for cotton, cattle, feed grains, apples, and tobacco, which more than offset the marked decline in hog prices and lower prices for wheat, hay, potatoes, and eggs. The net advance in farm prices is the result not of any better demand situation, but rather of reduced production of cotton, cattle, fruits, and vegetables. The total agricultural production for the calendar year 1927 appears now to have been approximately 5 per cent below that of 1926.

The production of cotton, after a marked rise from 1921 to 1926, in 1927 was reduced to the volume of 1920. The production of grains for food and for sale, which has been following a downward trend during the last eight years, increased slightly in 1927. The production of dairy and poultry products appears to have been maintained at the 1926 level after having increased substantially for several years. The production of all meat animals also equaled that of 1926. It is significant of the underlying changes that are taking place in farm production that during the last six years the production of crops for food and for sale has been maintained at a fairly constant level, whereas in the marketings of livestock and particularly livestock products the trend has been upward.

Better incomes have been received during the last half of 1927 in the Northwest from grains and in the South from cotton, than during the same period a year ago, but these were in part offset by lower incomes in the major hog producing areas. Dairy producers appear to have had as good an income during the last six months as during the same period a year earlier, but poultry producers have not fared as well.

In the costs of goods and services used for the farm production of 1927 there were no marked changes. Farm wages were slightly lower in 1927 than in 1926. Somewhat less labor was hired in the South because of the smaller cotton crop, and more was hired in the Central and Northwestern States to harvest and market the larger grain crops. Retail prices of farm machinery were only slightly higher, but purchases of farm equipment during 1927 exceeded those of 1926. Fertilizer prices were somewhat lower, while feed prices increased considerably and building material prices averaged slightly higher than in 1926. On the whole, prices of commodities and services bought for production have remained relatively constant during the last five years, with commodities approximately at a level of 50 per cent above pre-war prices and farm wages 66 per cent higher.

With gross income and production costs relatively unchanged this season as compared with last, it is evident that the agricultural situation as a whole, when measured in terms of returns for capital and labor, remains about as a year ago, and somewhat below that of 1925-26. That the marked improvement up to 1925-26 has not been continued into 1926-27, and that agricultural earnings are still considered inadequate by farmers and others, are reflected in the decline in land values and the movement of farm population to cities, which continued at least well into 1927. In the spring of 1927 land values for the country as a whole averaged 19 per cent above the pre-war values. Since then they have probably not changed materially. The movement of farm population to cities appears to have reached unusually large proportions in 1926, but the movement may not have been as great in 1927 as in 1926 for the inducements in urban industries have not been quite as attractive as during the preceding two years, and farm returns have been better in certain areas.

Taking into account the trend of agricultural production in this country, foreign competition and demand, and the trend in the general commodity price level, forces are not yet in evidence that would make the situation as a whole during the next few years, materially different from the situation of the last three years. However, forward-looking farmers can continue to improve their situation by adopting more efficient methods and making adjustments in line with the information contained in this report.

DOMESTIC DEMAND

The domestic demand for the 1927 farm production which is still to be marketed during the first half of 1928 is likely to show a seasonal improvement, but is not likely to attain the level of demand that prevailed during the first half of 1927. For the production of 1928 the agricultural industry as a whole should anticipate a domestic market situation at least equal to that of the current winter, although there are some uncertain factors which indicate the possibility of a somewhat better situation.

The money incomes of urban consumers are now lower than they were a year ago, because of the lower level of the manufacturing activity, chiefly in the iron, steel and automobile industries, and in the building industry, with a lower volume of employment in both. Factory wage payments during December were about 6 per cent below those of the preceding December and building wage payments were about 12 per cent below, as is indicated by the reduction in employment. This reduced consumer-purchasing power appears to have affected the domestic demand for hogs, lambs, butter, and eggs during the closing months of 1927. Subsequent changes in business conditions might therefore be expected to be particularly reflected in the prices of these commodities.

At the present time there are evidences of increases in automobile, iron, and steel production which may tend to stimulate a seasonal advance in other industries as well, but with factory wage earnings now about 10 per cent below those of last March, more than the usual seasonal advance of about 6 per cent in factory wage earnings would need to take place during the next few months to restore wage earnings to the level of last spring. Such an advance does not now seem likely, but a moderate advance during the next few months from the present low level may be expected. In the building industry, also, there is usually a seasonal advance in activity beginning in March, but as the building permits and contracts awarded during December were both well below those of a year ago and as there is a weakening rental situation in many localities, it is unlikely that the seasonal advance in this industry will restore

the activity and wage payments of the early months of 1927. In the agricultural areas, better incomes than a year ago have been received, so far this season, in the Northwest and the South, from grains and cotton respectively, but these were in part offset by lower incomes in the Central States caused chiefly by lower hog prices. Although these industrial and agricultural factors are favorable for a seasonal increase in business activity and in consumers' buying power, it does not now seem probable that the money incomes of consumers during the next few months will equal those of the spring of 1927.

In gauging the domestic demand situation for the second half of this year, it is necessary to take into account the following factors: Following the rise which began in 1924, industrial activity began to slow down in 1926 and declined considerably during 1927. In the past, such periods of declining business activity have brought about forces which tended to produce a revival in industrial activity. Should such be the case this year, the second half would show better general business conditions than the first half, with probably a favorable reaction in those farm products which were unfavorably affected during the winter months of 1927. One of the factors which suggests this business improvement as a reasonable expectation is that commercial interest rates are low and do not appear likely, in view of the adequate supply of credit, to rise sufficiently to act as a brake on business activity. Another factor is that the decline in some important industrial commodity prices has apparently been checked in recent months, suggesting that business activity may improve in anticipation of further advances.

On the other hand, the recent downward trend in business activity might be resumed by the middle of 1928 (after the expected spring rise), if a continued decline in building industries should more than offset the anticipated recovery in the automobile and allied industries and if the readjustments in foreign finance, in connection with the coming reparation payments, should affect adversely European demand for our manufactured products. Another factor in the probable business situation during the second half of the year is the prospective income from the 1928 farm production. There are no evidences at present that the contribution of agriculture as a whole to the national buying power will be materially different from that of the present season.

With the prospects for agricultural income not materially different and with industrial activity probably on the upward side of the business cycle during the latter half of 1928, it appears that agriculture may reasonably anticipate a domestic demand for the 1928 production at least equal to that of the present winter, but, as is suggested by the experience of recent years, farmers should guard against expanding production to such a point that the consequences of increased supplies would more than offset any probable improvement in domestic demand.

FOREIGN COMPETITION AND DEMAND

Foreign demand for our agricultural products of 1928 probably will be no better than it was for those of 1927. In general the purchasing power of foreign consumers of our agricultural products seems likely to be no greater through the season of marketing the products of 1928 than during the present season. Industrial conditions in Great Britain, our leading market, continue unsatisfactory, and although this may not affect materially the imports of our staple products such as wheat it may weaken the demand of that market for fruits. The economic outlook in continental Europe is for a year comparing favorably with 1927. The possible recession in German business may be offset by improvements in Italy and France as well as in some of the smaller European markets. Prospects in the Orient are less favorable.

Foreign competition in many lines is likely to be as great or greater in 1928 than in 1927. The upward trend in world wheat acreage outside of Russia and China continues, and with an average or better-than-average growing season, competition promises to be greater than in the present marketing season. Competition of Russian wheat on international markets on the basis of present prospects promises again to be of little consequence. Larger competitive supplies of European cured pork during the most of 1928 will affect American pork exports adversely. But the beginning of a downward movement in European hog marketings is in prospect toward the close of 1928, which should result in an improved demand for our cured pork products. Increasing production of Burley and flue-cured tobacco in Canada and of cigarette

tobacco in the British African colonies are important as indicating potential competition for American cigarette types in foreign markets. A tendency toward increasing production of dark tobacco in Europe, which competes with American dark-fired tobacco in European markets, is to be noted.

Foreign dairy production has surpassed pre-war levels, and the importation of butter into the United States has become a regular occurrence during the winter season when Southern Hemisphere production is at its peak. Dairy production in foreign countries, however, has not shown any material increase during the last two years. There is a tendency for the number of sheep and for wool production to increase in foreign countries, but drought in Australia has checked the increase there and has resulted in a temporary reduction in world supplies of wool.

Foreign production of flaxseed shows a tendency to increase. Higher flax prices in Argentina at present favor a further increase in acreage in 1928 in that important producing country. Sugar production in foreign countries is likely to continue in large volume. Rice production in 1927-28 in the surplus-producing countries of the Far East, which compete with our Southern States in European and Latin American Markets, seems likely to be as large as, if not larger than, in 1926-27. Production of rice in Japan was much larger in 1927 than in 1926, which will restrict the market in that country for California rice.

The 1927 crop of peanuts in China seems to have been about the same in quantity as in 1926, but the superior quality makes the peanuts more suitable for export to the United States. Shipments of Chinese eggs to the American market during the coming season will depend largely upon prices prevailing in the United States as compared with those in Europe. The 1927 Chinese pack of frozen and dried egg products was much better than had been anticipated early in the season, and it seems likely that production can be maintained in spite of the difficult conditions surrounding the industry.

In the United Kingdom conditions affecting the demand for our agricultural products are likely to be no better than they were during the last year. The basic industries of coal and iron and steel fail to show the extent of improvement anticipated at the end of the coal stoppage in 1926, and prospects are not bright for 1928. Production costs continue high, and it would seem that reorganization and consolidation in many industries must precede any marked improvement. The continued high unemployment is a further unfavorable factor. There has been some improvement in automobile manufacturing, in artificial silk manufacturing, and in shipbuilding industries, but this increase is not sufficient to offset the slump in other industrial lines.

The American section of the British cotton industry continues in a depressed state with no prospects of material improvement during the coming year. Production costs have been too high to permit successful competition in the foreign markets, upon which the industry is largely dependent. The expansion of the cotton textile industries of the Far East has greatly restricted these important markets.

The consumption of American cigarette tobacco continues large, but the imports have not increased at as high a rate as the consumption of cigarettes. This has been due to the increasing competition in the British market of tobacco of competing types from British Empire sources.

The market for American cured pork products probably will continue to be restricted by heavy marketings from continental European countries through most of 1928, after which some improvement in demand for our products is to be expected on account of reduced supplies from the European sources.

The British market has taken smaller quantities of American apples so far this season as compared with last year as a result of the relatively high prices of American apples, larger European production, and unusually heavy supplies of Spanish oranges. The large Australian apple crop may limit the market for American apples during the last two months of the present marketing season. Shipments of oranges and grapefruit to the United Kingdom continue to show an encouraging increase. All fruit imports from the United States, however, may be somewhat adversely affected by the continued low purchasing power of consumers in Great Britain.

In Germany there may be some recession from the high volume of business attained in 1927. There is some uneasiness as to developments in 1928, but with employment good and wages tending to increase no considerable reduction in purchasing power is anticipated. The outlook for German consumption of

American cotton in 1928 is, on the whole, fairly favorable, but is not so bright as a year ago. The German cotton mills rely largely upon their domestic market, but although the demand from that source is expected to continue good increasing competition from French and Italian manufacturers is expected. The increasing competition in Germany seems likely also to affect unfavorably the Czechoslovakian and Austrian cotton industries, which are largely dependent upon exports to Germany. In Poland some recession from the high prevailing activity in cotton industry in 1927 is to be expected.

An improved German demand for American cured pork products is probable near the end of 1928, when German hog marketings are expected to decline. Although imports of American lard into Germany during 1927 showed a falling off as compared with the previous year, they were not affected to the same extent as were the imports of cured products by the heavy marketings of German bacon-type hogs. Whatever effect the substitution of other fats, particularly butter, has had upon decreasing the consumption of lard, its peak probably was reached in 1927. The German tobacco manufacturing industry generally regained a much more stable basis during the last year and it seems probable that the imports of American dark tobacco will be as large as last year. The recent reduction in the German import duty on prunes will undoubtedly benefit American prune exporters, but the 1928 Yugoslav crop will probably be considerably larger than the very short crop of 1927, and increased competition from this source may be expected.

France is entering this year with considerably better prospects than at this time a year ago. Although industrial activity continues at a low level, the franc has been stable for many months, and domestic economic conditions promise to show steady, though slow, improvement. This will probably be reflected in better demand for cotton textiles, which, coupled with real evidence of increasing exports of cotton goods, seems sufficient to insure activity in 1928 in the cotton textile industry fully equal to or probably better than that of last year.

Prospects in Italy are also more promising. The recent stabilization of the lira lays the foundation for the recovery in economic conditions. It seems possible that Italian cotton spinners, in spite of higher prices, will buy as much American cotton this year as last. Widespread reports of increasing Italian competition in practically all continental markets clearly indicate that the Italian cotton industry has made rapid progress in readjusting production costs to the new level of the lira. Both spinning and weaving branches have found it possible to increase the rate of production in recent months.

Russian cotton mills plan to consume more cotton this year than last but a large part of the American cotton needed in this program was on hand at the beginning of the season as a result of the unusually large takings from the low-priced 1926 crop. In any case Russian purchases of American cotton this year may be affected by the failure of grain exports of 1927-28.

In the remaining European markets the demand for American agricultural products upon the whole appears likely to be somewhat better than last year. Economic conditions in Belgium continue to show improvement, and activity in the cotton mills promises to remain satisfactory. Some recession in competitive supplies of cured pork products from Denmark and the Netherlands seems probable during the coming year. Indications point to continued good demand for American tobacco and dried fruits in the Netherlands. In Norway and Denmark, where depressed conditions have prevailed during recent years, prospects are brighter, and with continued prosperity in Sweden there should be an improved demand for such agricultural products as the Scandinavian markets take from the United States.

China last year showed its usual surprising ability to carry on business under difficult conditions. Although tobacco imports from the United States decreased, the takings of low-priced American cotton were large. The Chinese cigarette business suffered a severe setback during 1927 but there is encouragement in the fact that it persists in such volume as it does in the face of civil war, irregular taxation, and disrupted transportation. The condition of the Chinese cotton industry is very much improved over last summer. Stocks of goods are low, mills are in full operation, and the goods are getting into the interior. There is a good crop of Chinese cotton this year which will be used in the manufacture of low-count yarn. There is no prospect that China will take as much American cotton this year as it did of the low-priced 1926 crop, but the demand for our cotton for use in the manufacture of high-count yarn promises to be relatively good.

In Japan depressed conditions prevailed during 1927 and prospects are not good for a material improvement in the near future. Because of accumulated stocks of cotton goods and unfavorable market prospects at home and abroad, the Japanese spinning industry adopted a curtailment of 12 to 15 per cent in their operations to extend between November, 1927 and April, 1928. The spinning industry is in a strong financial condition but the general business depression has brought about hand-to-mouth buying. Low-priced American cotton last year replaced a considerable quantity of Indian cotton but with present prices there is no prospect of that occurrence this year.

AGRICULTURAL CREDIT

The credit outlook for agriculture is in general somewhat improved over that of a year ago. The supply of credit for the country as a whole continues relatively abundant and is based on ample gold reserves. The interest rates on commercial and industrial loans and on securities of all kinds have been further lowered during the last year, and there has been some evidence of a downward tendency in the cost of agricultural credit.

In most sections of the country the improved agricultural returns of 1927 have made possible some reduction in outstanding credit obligations of farmers, and have increased the available security for the new loans needed for the coming season. A slight increase may also be expected in the number of farmers who finance their production program without the aid of credit. As usual, the situation will be spotted. This is particularly true of the East North Central States, and of the States that last year suffered flood disasters. Even where no special adversities were encountered during 1927, varying percentages of farmers, as in other years, particularly since 1920, will be found without substantial security for needed loans other than the new crops in prospect. Local credit difficulties in numerous cases, will also be due in part to additional failures of country banks, such failures resulting as a rule from the cumulative effects of years of postwar agricultural depression rather than from conditions prevailing in 1927. In such cases the deposits of more successful farmers will be temporarily tied up if not permanently lost, and the lack of local credit agencies increases the difficulty of drawing upon more distant sources of capital. In general, however, the agricultural credit situation shows improvement.

During the latter part of 1927 and until January 24, 1928, all of the Federal reserve banks had discount rates of $3\frac{1}{2}$ per cent. Since that date the Chicago and the Richmond banks have raised their rates to 4 per cent. A year ago all of the 12 reserve banks were operating on a 4 per cent basis. Prices of high-grade bonds have reached new high levels with a corresponding lowering of the interest yield. The yield of certain Government bonds has decreased to about 3 per cent. No extraordinary demands for credit in commerce and industry are in prospect in so far as can be foreseen at present, and it is improbable that any minor changes that may occur in commercial loans and discount rates will materially affect the interest rates in rural districts.

The Federal intermediate credit banks now, in most cases, rediscount agricultural paper at a rate of $4\frac{1}{2}$ per cent, as compared with a rate of $4\frac{3}{4}$ per cent a year ago, and this lower rate promises soon to be in effect for each of the 12 banks in this group. This reduces the upper limit of rates to the farmer, on loans thus discounted, from $6\frac{3}{4}$ to $6\frac{1}{2}$ per cent on general loans and from $7\frac{1}{4}$ to 7 per cent on livestock loans. The rate charged on direct loans to farmers' cooperative associations by all the intermediate credit banks still remains at $4\frac{1}{2}$ per cent, where it stood at the time of the 1927 Outlook Report. The rates of commercial banks in leading cities on loans secured by warehouse receipts vary from $4\frac{1}{2}$ to 6 per cent.

In the field of farm mortgage credit no striking changes have occurred during the last year nor are any important changes in immediate prospect, so far as can be foreseen. Among the 12 Federal land banks there have been minor reductions in the rates charged by three banks, while the others maintain the same rates that were charged a year ago. Nine of these banks now charge 5 per cent; two, the Columbia and the Berkeley banks, charge $5\frac{1}{4}$ per cent; and one, the Spokane bank, charges $5\frac{1}{2}$ per cent. A few of the joint stock land banks, on the other hand, have fractionally increased their rates during the year. The present rates for this group range from $5\frac{1}{4}$ per cent to 6 per cent, with 6 per cent the most common figure.

On the whole, and more particularly in the Cotton Belt, in the western part of the Corn Belt, in the spring wheat sections, and in the range sections, the credit situation for 1928 promises to show improvement over that of 1927.

FARM LABOR, EQUIPMENT, AND FERTILIZER

With industrial employment continuing at a lower level than during 1927, there is likely to be a larger supply of farm labor during 1928 because of the close relationship between the volume of industrial employment and the supply of farm labor. As pointed out in the Agricultural Outlook for 1927, the falling off of industrial employment resulted in a somewhat larger supply of farm labor in practically all sections of the country, and average farm wages for the United States became lower than the year before, by summer, and continued at slightly lower levels through the rest of the season.

In the South, as a result of the decreased demand for farm labor in 1927, wages fell off more than in other areas. With better prices of farm products prevailing in the South it is quite likely that the demand for hired labor will be greater than in 1927 and farm wages will probably be maintained or advanced slightly.

During 1927 the use of the combined harvester-thresher resulted in lower wages at harvest time. Unless there is unusually heavy abandonment of winter-wheat acreage some increase in the demand for farm labor may be looked for during the wheat harvest, east of the Mississippi, in 1928. In the Great Plains the increasing use of the combine may result in a decreased demand for harvest hands. An unusually heavy production of any important crop is likely to result in an increased demand for harvest labor, such as occurred in the Western States in 1927.

From present indications, wholesale prices of farm machinery will not differ greatly from the prices of 1927.

Wholesale prices of building materials declined during 1927 (as indicated by an index of 175 in January and 161 in November) largely because of the smaller volume of construction of residences and office buildings. Retail prices have declined less than have wholesale prices and unless there is an unexpected increase in building activities during 1928 the retail price of building materials, especially when bought in large quantities, probably will show some further decline.

Wholesale prices of mixed fertilizers have advanced steadily since May, until in December they were only 4.9 per cent below the average prices of a year ago. Retail prices of mixed fertilizers and fertilizer materials in December were at about the same level as a year ago, but about 6 per cent higher than last spring. The decrease in cotton acreage and the smaller purchasing power of the South caused a material decrease in the quantity of fertilizer consumed in 1927; fertilizer prices broke sharply and reached the lowest point in many years late in the spring. Since it is probable that consumption will be somewhat larger than last year, it is not likely that prices will decline during the spring as they did in 1927. The expected increase in demand for fertilizers, especially in the South, may result in higher fertilizer prices to farmers than prevailed during 1927.

Tag sales in the 13 important fertilizer-consuming States from August to December, 1927, were 17 per cent larger than for the same period in 1923 and 24 per cent larger than in 1925. The greatest increase in tag sales has been in the South Atlantic States and Alabama and Mississippi, where sales were unusually low in 1927.

COTTON

When American cotton growers begin to market the 1928 crop, it is probable that they will meet the relatively favorable condition of a smaller carry-over than last year, and a demand situation about the same as for the 1927 crop. The most uncertain factor in the outlook is the size of the 1928 crop. Cotton growers have in their own control the determination of the acreage to be planted this spring. Yields per acre also can be influenced by applications of fertilizer and cultural practice including weevil control. In planning production growers should remember the very low prices resulting from over-planting in 1926.

The yield per acre will depend to a material extent upon the abundance of boll weevils. Weevils undoubtedly entered hibernation in the fall of 1927 in larger numbers and with greater vitality than for several years.

The extent to which they were destroyed by the very low temperatures experienced for several days in January over a major portion of the Cotton Belt is still undetermined. Past experience, however, and such information as is available indicate that a considerable percentage of hibernating weevils still survive even where the early January temperatures were as low as 10°. Later periods of low temperatures might reduce the number of weevils to a point where they will cease to be a serious danger in 1928, but even a relatively light emergence would constitute a menace in case the growing season should favor boll weevil propagation.

In the areas where fertilizer is customarily used, it is an important factor both in increasing yields and in reducing boll weevil damage through hastening the maturity of the crop. Any increase in the use of fertilizer should be by application of more pounds per acre rather than its use upon more acres. In planning his acreage, however, the individual cotton farmer should be guided to some extent by the total purchases of fertilizer for use in cotton production, as any material increase in the use of fertilizer may have a material effect upon total production.

Cotton producers should not be induced, by the higher prices received for the 1927 crop, as compared with that of 1926, to increase acreage. An area equal to last year, with a ten-year average abandonment and yields per acre, would result in a crop only slightly larger than last year's. But if yield per acre should equal that of the last four years, during which weevil damage was only about half of that of the past ten years, the crop would be considerably larger than last year. Such an increase in the crop, however, would probably be offset by the decrease in the carry-over at the end of this year, and would make a total world supply not much different from the total world's available supply of American cotton as of August 1, 1927. To the extent to which cotton growers increase their acreage over that planted in 1927 they will tend to reduce the total return from the 1928 crop.

The purchasing power of foreign consumers and the foreign demand for American cotton in the season 1928-29 seem likely to be about the same as during the present marketing season. It seems probable that improvement in the business situation and textile mill activity in France and Italy will largely offset any depression that may occur in Germany and other central European countries, while conditions in Great Britain and Japan probably will, at most, be no worse than they now are. Present prospects are that the Indian cotton crop will be a little larger than last year but the Egyptian crop may be smaller. Conditions appear to be favorable to some increase in planting in other foreign countries, but any probable increase in total production of cotton in these countries will not be an important factor in the demand for American cotton.

WHEAT

The present indications are that, with average or better than average yields, another large world crop of wheat will be harvested in 1928. Winter wheat acreage in the United States was increased 10 per cent, and increases are shown for all foreign countries that have reported to date. The prospects are for a larger acreage of spring wheat in Canada if conditions are favorable for spring seeding. Any material increase in the acreage of hard red spring wheat in the United States, if average or better than average yields are secured, will further tend to increase the world supply for market next fall and winter, and will probably reduce returns to growers as compared with 1926 or 1927. However, should excessive abandonment of winter wheat occur, especially in the hard winter wheat States, the situation might be materially changed for the spring wheat grower. Winter wheat for the country as a whole went into the winter with a condition considerably above average, but the condition of wheat in the hard winter States, from Nebraska south, on December 1 was somewhat below average, and conditions since December 1 have not been favorable, largely because of drought. Spring wheat growers should closely watch the weekly reports of the Weather Bureau as well as the April 1 condition report of the Crop Reporting Board.

The world's wheat area outside of Russia and China continues to expand. In spite of the late spring in Canada, and droughts in Australia and Argentina, the area harvested in 1927 was greater than in 1926. The area harvested is estimated to be 234,500,000 acres as compared with 231,000,000 in 1926, and 230,000,000 in 1923—a year that produced a very large crop. The estimates of winter seedings of six countries reporting to date for 1928, amount to

61,500,000 acres as compared with 55,700,000 last year, an increase of 10.4 per cent. Although these countries last year contained only 24 per cent of the world's wheat area outside of Russia, the increases reported are significant. The area seeded in Italy is reported to be about equal to last year. In Germany and England there was some delay in seeding which may have resulted in some decrease in area. In general, weather conditions have been favorable to seeding and to the development of the crop in Europe outside of Russia, except for a cold wave the last of December which is reported to have done some damage in Northern Europe.

It is to be expected that, should weather conditions be favorable in Canada and Australia, there will be at least a recovery of the acreage in these countries which was reduced last year because of unfavorable conditions, and some further expansion in Canada is not unlikely. Reports indicate that a greater proportion of the area intended for spring seeding in the Prairie Provinces has been plowed than last year.

The effect of the prospective expansion in world wheat area, outside of Russia, may be offset, in part, by a reduction in Russia. Conditions do not now appear favorable for a good winter-wheat crop in Russia. Trade reports indicate that the winter seedings in the Ukraine may be about 6 per cent less than last year, and growing conditions have been rather unfavorable in other parts of southern Russia.

The world's carry-over of old wheat on July 1, 1928, is likely to be slightly larger than last year. World production, exclusive of Russia and China, is estimated to be about 3,543,000,000 bushels compared with 3,421,000,000 last year, an increase of 122,000,000 bushels.

The accounted-for supply of world wheat on hand on July 1, 1927, was about 56,000,000 bushels greater than at the beginning of the 1926-27 season. Production plus carry-over indicates an increase of about 178,000,000 bushels in total supply of wheat for the season; but poorer quality of the crop in some countries and reduced supplies from Russia largely offset increased volume of production outside of Russia. Furthermore, the higher prevailing prices for rye and other foodstuffs in comparison with lower prices for wheat will probably increase the consumption of wheat in Europe so much as to absorb practically all of the increase in the volume of supplies.

The heavier production of wheat in the northwestern part of the United States and delay in the movement of Canadian grain on account of a late harvest may result in some increase in the July carry-over of wheat in those countries, while the stocks in the Southern Hemisphere may be reduced to less than last year on account of the smaller Australian supply. Some North European countries may increase their holdings at the end of this season as compared with the beginning of the season. The net result may be a slight increase in the world's carry-over of wheat.

WINTER WHEAT

The area seeded to winter wheat in the United States in the fall of 1927 is estimated to be 47,897,000 acres, an increase of 10 per cent over that seeded in the fall of 1926 and 15 per cent over the five-year average acreage seeded 1922-1926. The greatest change in acreage has taken place in the eastern Corn Belt States with an increase of 30 per cent. This represents in part a return to normal seedings which have been curtailed the past two years by unfavorable weather conditions and in part probably by an actual upward tendency in acreage. The large increases in Montana and South Dakota probably represent, in part, shifts from spring wheat.

In other parts of the country the changes in acreage were much less marked amounting to 5 and 6 per cent, respectively, in the hard winter wheat States of the Southern Great Plains and in the soft winter wheat States of the Appalachian region and to 5 per cent in the Pacific Coast States. The increase in the hard winter wheat States, following an even larger increase last year, may be of considerable significance both to the growers of this class of wheat and to the producers of the hard spring wheat which comes directly into competition with it. The increase in the Pacific Northwest, on the other hand, may not be of much significance since, in the past, increases in fall seedings in this area have usually been followed by reduced seedings in the following spring. The present acreage of white wheat, with average yields, however, is sufficient to keep the United States on an export basis. The

indicated reduction in the Australian crop may be a strengthening factor in the demand for American white wheat.

The production of soft red winter wheat was curtailed in 1927, but the production of hard red spring, durum, and white wheat was considerably higher than in 1926 or since 1924. Although the production of hard red winter wheat was slightly lower than in 1926, it is still large enough to keep this class of wheat on an export basis and the price is now below that year's level. The prospect which was pointed out in last year's report, for a relatively favorable price for soft red winter wheat because of the smaller seeded acreage, has materialized. With the increased acreage this year, however, these premiums may not continue.

If yields and abandonment in acreage throughout the United States, this year, should be equal to the 10-year average, the area seeded would produce around 630,000,000 bushels of all winter wheat in the United States in 1928. About 356,000,000 bushels of this would be of hard red winter wheat, 220,000,000 bushels of soft red winter, and the remainder of white wheat. Should this production result, it would represent an increase of about 35,000,000 bushels of hard red winter and an increase of slightly less than 40,000,000 bushels of soft red winter wheat over the 1927 production. The indicated increase in the hard winter wheat States may not materialize since the condition of the crop on December 1 was below average, and weather conditions have not been very favorable since that time. In other areas unfavorable weather may also have affected the crop to some extent.

HARD RED SPRING WHEAT

Production of hard red spring wheat in 1927 was only slightly short of 200,000,000 bushels. This record production, due in part to high yields and in part to an increased acreage, has put the price of this class of wheat upon an export basis, except for premium grades—a contingency which was pointed out in this report last year.

The 1927 harvested average of hard spring wheat was about 1,000,000 acres larger than the previous year. Even with average yields this acreage would produce close to 170,000,000 bushels of wheat in the United States in 1928, which is sufficient to keep the United States on an export basis. If the hard red winter wheat crop comes through the winter in good condition, hard red spring wheat farmers should hesitate to increase their present acreage of spring wheat and may even find it to their advantage to decrease it somewhat in favor of flax, particularly in those areas where good yields of flax are usually obtained. (A comparative statement of the relative returns from flax and spring wheat under different price conditions is presented in the section on flax, pp. 16-17.)

Since wheat now sells in terminal markets largely on a quality basis, farmers should strive to secure the benefit of such premiums as are paid, by producing wheat of high protein content, which is free from smut, dockage, and other foreign material, in so far as they are able. Although it is not possible to estimate in advance of harvest what the quality of the crop will be, farmers may influence protein content somewhat by planting wheat after legumes, and by selecting rust-resistant varieties they may curtail the spread of this disease.

DURUM WHEAT

The outlook for durum wheat is quite uncertain. The relatively low prices now prevailing are the result of good crops in the United States, in North Africa, and in Canada. The present prospects are for another good crop in North Africa. The area seeded in Tunis is reported to be nearly 31 per cent greater than last year, which was, however, considerably below the average. The area reported for this year is about the average for recent years. Conditions in Algeria are reported to have been favorable for seeding. The rainfall was well distributed except in the department of Algiers where drought delayed work. The North African crop, however, is always uncertain until harvest, and conditions in this area should be watched through the season. The area of wheat seeded in Sicily is reported to be larger than last year. Canada continues to expand durum production: inspections of durum during the first four months of the season were larger in number than during that period last year, and double those for the same period in 1925. It appears, therefore, that

unless there are crop failures in some of the competing countries, even stronger competition may be expected next season than in 1927-28. Should Italian producers of durum wheat secure average or better-than-average yields, giving them a larger crop than harvested last year, there would be no increase in demand to offset any increases in production in North Africa or Canada.

RYE

Domestic rye production is relatively small and a considerable portion of it is exported. Therefore, it has but little influence upon prices, as returns to growers depend very largely upon the world situation. Although the present prospects are for some increase in the world's rye acreage next year, as all countries reporting to date except Canada show some increase in acreage seeded for harvest in 1928, the present situation is not likely to be materially changed in 1928 unless high yields are realized in Europe. The high yields of 1927 in the United States are not likely to be repeated in 1928. Although the estimated world acreage of rye (exclusive of Russia) in 1927 was somewhat larger than in 1926, being 46,100,000 as compared with 45,500,000 acres, this area remained lower than in 1925 when nearly 46,600,000 acres were harvested.

The United States acreage seeded in the fall of 1927, 3,802,000 acres, was about 3.6 per cent more than in 1926. The average yield in 1927 was 16 bushels, which was the highest since 1915, and is not likely to be repeated in 1928. This resulted in a production of 58,572,000 bushels.

The 1927 world's rye production in countries reporting to date amounts to about 879 million bushels as compared with 802 million in 1926, an increase of 9.6 per cent. This year's crop is considerably below the 1925 crop which amounted to about a billion bushels, but is close to the average for the last five years. The relatively high price now prevailing for rye as compared with wheat is due to a moderate world crop following a short crop and to the relatively poor quality of this year's crop in Germany, which is the most important market for the surplus of exporting countries. Higher rye prices in Europe may have led to some increase in rye seedings in some countries or at least may have checked tendencies to shift from rye to wheat. The effect of these higher prices, however, may have been offset to a certain extent by the somewhat unfavorable conditions for seeding in Germany and Poland, the two most important European producing countries outside of Russia.

FLAX

Production of flaxseed in the United States is still well below domestic requirements and may be increased materially before bringing domestic prices to the world level. Domestic requirements have averaged slightly over 40,000,000 bushels yearly for the last three years. This is 18,000,000 bushels more than would result from average yields on an acreage equal to that of 1927. The highest yields on record on such an acreage would produce 32,000,000 bushels, and the lowest yield on record would result in a crop of about 13,600,000 bushels. Since domestic flaxseed prices are largely determined by world supplies and requirements, growers should watch developments not only in the United States but also in foreign countries.

The world's harvest of flaxseed this season is about 18,000,000 bushels larger than last year. The combined harvest in the United States and Canada in 1927 was approximately 31,300,000 bushels, or 6,000,000 bushels larger than that of 1926. Production in Argentina is forecast at about 81,216,000 bushels, or 12,000,000 bushels over last year's estimate, while the outturn in 11 other countries, including all important producers of flaxseed except India and Russia, is substantially the same as last season. Early indications, however, are that the Indian crop may be hardly as large as in 1926-27. Stocks of flaxseed in Argentina and India are smaller than a year ago.

So far as can be determined, the present utilization of flaxseed during the rest of the 1927-28 season is likely to be fully equal to that of the same period last season. Slightly lower prices for linseed oil favor increased consumption of that product, although stocks of oil are likely to continue large. Demand for linseed meal has been active and promises to continue to be a strengthening factor in the market for flaxseed. Higher prices of meal are tending to offset the lower prices of oil.

European demand for the large Argentine surplus that is again in prospect this season will be a dominant factor in world flax markets. The larger crop of flaxseed in North America will tend to restrict United States imports of Argentine flaxseed and thus direct an increased proportion of the total Argentine shipments to Europe. Unless European consumers absorb the surplus readily, the pressure of these offerings is likely to be reflected, at least in part, in the United States when the domestic crop of 1928 comes on the market.

Shipments of Argentine and Indian seed to Europe in 1927 were about 25 per cent larger than in 1926, but the conditions which favored heavy consumption in the latter months of 1927 may not obtain later in 1928. Linseed meal is relatively a more important product than linseed oil in Europe, and a shortage of feed grains in Europe this season, together with the smaller amounts of cottonseed meal available there from the United States, helped to widen the outlet for linseed meal, so that prices of that feed are practically the same as a year ago, in spite of the increased output. Prices of feed grains in Europe will likely be lower next season if average yields are secured in 1928.

The liberal output of linseed oil in Europe in recent months has resulted in some increase in stocks at a number of points. Competing oils, however, are relatively high priced, and a good demand for linseed oil is anticipated during the next few months.

Next season's flax acreage in Argentina will also have become a factor in flax prices when the 1928 United States flax crop comes on the market. Argentine flax prices at present are approximately 10 cents per bushel higher than a year ago, largely because of lower ocean freights. These higher prices favor a further increase in the Argentine flax acreage in 1928.

Per acre returns to United States farmers from flax in 1928 will probably be lower than in 1927, but indications are that with average yields flax will still be relatively more profitable than the other spring grains grown in the same area and under the same conditions. In making their decision farmers should be guided by the relative yields and prospective prices of flax and of other spring grains in their own localities as well as by the expenses, which will vary in shifting from one crop to the other.

With average yields of wheat and flax the net returns per acre from flax selling at \$1.90 per bushel would be equivalent to those from wheat selling at \$1.30 per bushel. With the same yields, flax at \$1.60 per bushel would be as profitable as wheat at \$1.10. On the other hand, if flax sold at \$2.20 per bushel, wheat would have to sell for slightly over \$1.50 per bushel to be as profitable.

Where the seeding of spring wheat is delayed it may be advantageous to increase the acreage of flax somewhat at the expense of spring wheat, especially on clean land suitable for flax. The decreasing demand for oats as a feed crop also suggests that where oats are grown for market farmers may well consider whether flax might not produce a greater monetary value.

RICE

The rice acreage was reduced last year from 1,034,000 to 989,000 acres, but the increase in yield produced a crop nearly as large as in 1926 and the carry over at the beginning of the 1927 season was greatly increased. The production is still in excess of demand at satisfactory prices, and a further reduction in acreage appears advisable.

In Louisiana, Arkansas, and Texas the further substitution of soy beans for a part of the rice acreage, and the adoption of rotation of soy beans with rice, would serve to reduce rice acreage and decrease production costs. The demand for rice may be increased by shifting production in the Southern States to rices of better cooking qualities and by supplying the market with unmixed rices free from broken kernels, red rice, and excessive moisture content.

The carry over of rice at the beginning of the 1927-28 marketing season was so large that the total supply available for distribution was only slightly smaller than at the beginning of the 1926-27 season. Prices have been even lower than the unsatisfactory prices of 1926-27. Exports of rice during the past season were on the highest level since 1922-23. Continued large exports will be necessary during the present season if accumulation of heavy stocks is to be prevented, since it is not likely that the domestic market, and Porto Rico,

will take quantities materially larger than last year. An encouraging feature of the southern rice export situation, so far this season, has been the marked increase in the takings of American rice by Cuba as compared with the same period in recent years. Reports received to date on the rice production in the Far Eastern countries which compete with the Southern States in foreign markets are fragmentary, but it appears that supplies available for export to competitive markets will be as large as, if not larger than, last year.

By means of large exports, principally to Japan, California was able not only to dispose of the large 1926 production but also to reduce stocks. The rice acreage harvested in California in 1927, however, was 7 per cent larger than in 1926 and the crop was over 12 per cent larger than in 1926. The supply available for export is, therefore, larger than last year. The prospects for disposing of this rice are not as good as were prospects in 1926-27. Japan, which takes the major part of the California rice that is shipped to foreign countries, produced in 1926 the smallest crop for several years and imported large quantities of foreign rice. The 1927 Japanese crop, on the other hand, was apparently the largest on record, and this, together with large supplies from Chosen, and the fall in the Japanese exchange, will undoubtedly restrict the imports of California rice.

OATS

Relatively unsatisfactory returns from the production of oats for sale as grain during recent years is emphasized by the present situation. Market prices are now well above last season, but these are largely due to low yields, which have been 10 per cent below average for two successive years. The relative price of oats, however, even at recent levels is one of the lowest of the group of farm products.

The decline in the number of horses on farms has probably reduced the yearly requirement of oats for feed by some 125,000,000 to 150,000,000 bushels since 1919. A further decrease has resulted from the rapid decrease in the number of horses in cities. The use of oats for dairy cattle and in mixed feeds has shown some tendency to increase.

Last year's reduction of some 4 per cent in the total oats acreage, accompanied by low average yields, resulted in the smallest crop since 1922. A considerable portion of this decrease occurred in the Corn Belt States east of the Mississippi River, where the unusually wet weather at seeding time tended to reduce the acreage of corn and oats and to increase the acreage of barley.

Supplies for the current crop year are the smallest since 1921-22. The carry over of old grain on farms and in commercial channels was small, and this fact, together with the reduction in the crop, indicates a total supply for the current season of 1,269,000,000 bushels, compared with 1,389,000,000 bushels last season and 1,604,000,000 bushels for 1925-26. Considering the supply of other feed grains and the disappearance during recent years, this season's supply appears to be about sufficient for domestic needs. The low quality of the crop and the scarcity of high-quality grain have caused an active demand for the better grades, and higher prices for other feedstuffs have also tended to strengthen the market for oats.

The average farm price of oats to producers on December 1 was 45 cents per bushel as against 40 cents on the same date last year. Future prices at Chicago have held above those of the last two seasons and cash prices have tended to follow futures with substantial premiums quoted for best-quality grain.

The supply of oats now on hand appears to be smaller than last year and a fairly active demand for oats with premiums for good-quality grain seems probable during the remainder of the season. During the next crop year, however, should an average crop of good-quality grain be obtained, the market situation is likely to be less favorable. The prospective market outlook for 1928 is significant for farmers who grow oats for sale although it may be desirable to maintain or increase acreage in certain localities where climatic or other conditions are particularly favorable for oats.

BARLEY

The unusual situation of a record barley crop selling at relatively high prices is not likely to be repeated in 1928. The high prices received for the 1927 crop were largely the result of an increased foreign demand arising from a shortage

of feed grains in Europe this season. It is improbable that the European supply of feed grains next year will be so small as this season. There is also little prospect of any material increase in domestic requirements for barley or in the export demand for malting-quality grain from the Pacific coast.

The market value of barley next season is more likely to be determined largely by the domestic supply of that grain and the supply and prices of other feed grains, and farmers should take these factors into consideration, rather than present prices, in determining the barley acreage for the coming year.

A record crop of about 265,600,000 bushels of barley was produced in 1927, resulting from a 20 per cent increase in acreage combined with good yields. This compares with an average production of 192,600,000 bushels for the preceding five years. The principal increase was in the North Central States, although acreage increased in practically every State where grown east of the Rockies. The barley crop on the Pacific coast, principally in California, was slightly smaller than last season.

The world's barley crop as reported to date is around 69,000,000 bushels above that of last year, with large increase in the United States and in North Africa and a considerable decrease in Europe. European production of corn and oats is also below last year, showing reductions of 179,000,000 bushels and 54,000,000 bushels, respectively.

The smaller European supply of feed grains has been reflected in greatly increased exports of United States barley from the territory east of the Rockies. Exports from San Francisco to January 1 were slightly smaller than last season, but United States exports July 1-December 31, 1927, totaled about 22,000,000 bushels more than last year's exports for the period, and account for about one-fourth of the increase in the crop.

The largest relative increase in exports of barley to European countries occurred in shipments to Germany, which for the first half of the crop year July-December totaled nearly 9,000,000 bushels, compared with less than 850,000 bushels during the same period last year. Exports to the United Kingdom were more than 50 per cent larger than for the same period last year. The movement of United States barley to Canada, most of which passes on to European countries, has also shown an enormous increase over last season, totaling for July to December this season nearly 10,300,000 bushels, compared with around 1,780,000 bushels last year.

Higher corn prices earlier in the season, together with an increasing popularity of barley as a feed grain, have probably increased the quantity used for feed during this season east of the Rockies. Disappearance has also been large on the Pacific coast. Warehouse stocks in California December 1, 1927, were less than half of those a year earlier, and farm stocks were estimated at around 109,000 tons, which would indicate materially smaller supplies in that territory this spring. In view of the heavy movement to Europe and the relatively higher prices of corn and oats, the market demand during the remainder of the season promises to continue fairly active.

CORN

Corn acreage in 1928 will probably show little change from last year. With little change in acreage and average yields in different sections of the country, a 1928 crop about equal to 1927 may be expected. Should the distribution of the 1928 corn crop be more nearly normal than in 1927 and the average yields be obtained, prices are more likely to approach the average for the 1926 crop than have those which have prevailed to date for the 1927 crop. Corn prices are expected to continue above last year's level through the winter and early spring months. Prices during the remainder of the season will be determined largely by new crop prospects and the supply of corn and other feed grains available.

The total supply of corn on November 1, 1927, including carry-over on farms and in the principal markets, was about 1 per cent larger than a year ago. The geographic distribution of the 1927 crop was most unusual. Only about 21 per cent of the corn for grain was produced in the East North Central States, as compared with 27 per cent last year and 32 per cent in 1925. The production of corn in this area was the second smallest in many years, and was only slightly larger than the short crop of 1924. On the other hand, the production of corn in the West North Central States was the second largest for a long period. The relatively ample local production in the South Atlantic and South Central States which characterized the 1926 crop was repeated in 1927.

The demand for the 1927 crop promises to be slightly larger than last season. There are apparently more hogs to feed than there were last year. Beef-cattle prices are an incentive to feeding where supplies of corn are ample, as in the West North Central States, but the total amount of cattle feeding is expected to be less than a year ago. The numbers of cattle, horses, and mules are less than last year.

The supply of oats is the smallest since 1913, and prices are higher. Heavy exports of barley have materially reduced the record supply of that grain and placed prices well above last season. The supply of grain sorghums is about the same as a year ago. A record hay crop may reduce the consumption of corn in areas where corn is short. Advancing prices in European markets caused by a short corn and barley crop in Roumania and other important producing countries in Europe are a strengthening factor in the domestic market. The commercial demand for corn in the United States is not likely to change materially from last year.

It is only by giving considerable weight to the influence of the geographic distribution of the corn crop that it is possible to explain the low market prices for corn for the 1926 crop and the much higher prices that have prevailed to date for the larger 1927 crop. Total supplies are slightly larger than a year ago, feeding requirements may be a little greater, and the general price level of all commodities has not changed materially since last season.

In 1926 ample supplies of corn in the East North Central States and in the South resulted in an accumulation of visible supply at primary markets which had a depressing effect on prices from October to April, and the usual seasonal advance did not take place. Prospects of a short 1927 crop caused prices to rise to high levels beginning in May, and it was not until the fall of 1927, when a much better crop than was expected became assured, that corn prices began to decline. These changes in the location of corn supplies this season are reflected in farm prices, which were 4 and 5 cents per bushel lower on December 15 than a year ago in Nebraska and Kansas, respectively, but 20 cents higher in Indiana, 19 cents higher in Ohio, and 16 cents higher in Illinois.

Corn prices for the present season will probably continue above last year's level during the next few months, but with average prospects for the new crop they may average lower than corn prices last season during the latter part of the present crop year.

The acreage of corn for the United States in 1928 will probably show little change from the 1927 acreage, but a more even distribution of the crop in the Corn Belt may be expected. The probable shifts in crop acreages in the South Atlantic and South Central States would bring about a reduction of from one to two million acres in corn, and the increase in winter wheat acreage in the West North Central States may also cause a decrease in corn acreage in that area in 1928. With reasonably favorable weather at planting time in the East North Central States, an increase of from one and one-half to two million acres over the unusually low acreage of 1927 may be expected. The relatively small acreages in the North Atlantic and far Western States will probably remain about the same as in 1927. With average yields in these different areas, a crop about equal to 1927 would be produced in 1928. Farm carry-over in the fall of 1928 is not likely to be materially different from that in 1927.

Feeding demand for the 1928 corn crop is likely to be somewhat less than that for the 1927 crop, as a decrease in the number of hogs to be raised in 1928 is indicated by the pig survey and other information. Numbers of horses in the country are expected to show further reductions, and cattle numbers will show little if any increase. The expected decrease in available supplies of feeding steers may not affect the feeding demand for corn as much as would normally be expected, because cattle prices next fall are likely to encourage feeding, and if feeder steers are not available more cows, heifers, and calves will be fed. The commercial demand for corn is fairly stable from year to year and is not likely to change materially during 1928-29.

BEEF CATTLE

Market supplies of cattle in 1928 will probably be 6 to 10 per cent smaller than in 1927. The number of cattle and calves on farms and ranges January 1, 1928, was 2 per cent smaller than a year earlier and was the smallest number since 1912. In view of the expected relatively high price of beef compared with other important meats, demand for beef may be somewhat less than in 1927.

It seems reasonably certain that prices of slaughter cattle will average higher than in 1927, although peak prices of that year may not be equaled. Stocker and feeder cattle are expected to enjoy a good active market in 1928 with average prices for the year above those of 1927.

Cattle numbers in the United States continued to decrease during 1927. The estimated number on farms January 1, 1928, was 55,696,000 head which was 1,176,000 head, or 2 per cent smaller than on January 1, 1927. This was the smallest number of cattle on farms since 1912 and probably the second smallest since 1898. Both of these years represented low points in cattle production cycles. With the exception of 1921, total slaughter of cattle and calves each year since 1917 has exceeded the number of calves born. This heavy slaughter did not affect market supplies noticeably until the middle of 1927. After August supplies dropped off sharply, and the slaughter during the last four months of the year was the smallest since 1922.

The proportion of steers in the total cattle supply also decreased in 1927, and especially the proportion of steers 2 years old and over. The number of two-year-old steers per 100 yearlings, as indicated by reports as of December 1 from some 125,000 farms and ranches, declined from 83 in 1926 to 72 in 1927, and the number of steers per 100 cattle declined from 10.7 to 9.7. The number of calves per 100 cattle increased slightly, as did also the number of steer calves per 100 cattle.

Most areas and nearly all States showed decreases in cattle numbers during 1927. The most significant decreases were in the North Central States, which furnish the bulk of the cattle slaughtered east of the Missouri River, and in some of the States west of the Continental Divide, which furnish the Pacific coast cities with beef supplies. In Texas and the Southwest cattle and calf marketings in 1927 were in excess of those in 1926, and in Texas the shipments of calves to slaughter were much above 1926, many of them being good quality beef calves.

The number of cattle on feed in the Corn Belt on January 1, 1928, was estimated at 6 per cent below January 1, 1927, and the decrease in the Western States at 16 per cent. Nebraska, Kansas, the Lancaster district of Pennsylvania and Maryland are the only areas in which there were more cattle on feed this year than last. Average weights of cattle on feed are the lightest for many years.

It seems probable that the industry is now at the low point of the present production cycle, and prevailing conditions are similar in many respects to those existing at the beginning of 1913. These cycles usually extend over a period of 14 to 16 years. Previous low points in production occurred in 1898 and 1912.

It is expected, therefore, that from now on the trend of production will be gradually upward for several years to come. Present relatively small numbers of cattle in the country, together with the relatively high prices which have prevailed for several months past, are expected to provide a strong incentive for cattlemen to restock farms and ranges and increase their herds.

The first clear intimation of reduced basic supplies consisted of the sharp reduction in marketings of range cattle during the fall of 1926. The situation was obscured somewhat by heavy marketings of fed cattle during the first half of 1927, but a marked reduction in market receipts after the middle of 1927 confirmed the earlier judgment beyond any doubt. This trend toward lighter marketing and slaughter is expected to continue throughout 1928 and result in a 6 to 10 per cent reduction in the number of cattle and calves marketed during the year.

With a plentiful supply of corn in most of the States which have the bulk of the cattle on feed, and in view of the relatively high level of prices, there will probably be a tendency to hold cattle on feed somewhat longer than normally. This may result in bunching of market receipts late in the spring. This movement will probably not be sufficiently pronounced to depress prices seriously.

Supplies of finished cattle next summer will probably be slightly greater than a year ago. Presumably market supplies of stocker and feeder cattle in the fall of 1928 will be still smaller than during the corresponding period of 1927. This situation is expected to prevail despite the fact that imports of stocker and feeder cattle from Canada may show some increase. With no immediate prospects of being able to compete successfully with Argentine cattle and beef in the United Kingdom, Canada is likely to continue to dispose of most of her surplus production in the United States.

Imports of Canadian cattle to the United States from January to November, 1927, amounted to 181,000, compared with 81,000 a year earlier. Imports of calves from Canada during the same period amounted to 75,000 compared with 61,000 in 1926, and imports of beef increased from 15,000,000 pounds in 1926 to 45,274,000 pounds in 1927. These imports were the equivalent of only about 2 per cent of all cattle slaughtered in the United States during this period. It does not seem probable, therefore, that supplies from that source will be sufficient to affect materially the American cattle and beef markets.

Average weights of feeder cattle last fall were lighter than in 1926 and materially lighter than in 1925. For that reason it seems probable that average weights of fed cattle marketed in 1928 will be lower than a year earlier in spite of the expected trend toward longer feeding. Fed cattle marketed during the latter half of 1928 are likely to average higher in grade than last year.

With smaller numbers of cattle coming to market, average weights lighter, and no prospect of serious competition from foreign sources, the quantity of beef available for domestic consumption is expected to be definitely smaller than in 1927.

The demand for beef in 1928 may be less than in 1927, because the relatively high price of beef compared with pork and lamb may tend to turn consumers to the cheaper meats. However, during the last half of 1927, when business was declining, beef prices continued to advance. If, as now seems possible, business conditions improve in 1928, there may be little or no decrease in the demand for beef.

If the demand for beef in 1928 falls below that of 1927, it is not likely that such reduction will offset the expected decrease in market supplies. Average cattle prices, therefore, are expected to be considerably higher in 1928 than in 1927, although the peak prices of 1927 may not be exceeded.

If the present position of the industry in the production cycle has been properly charted, and if history repeats itself, cattle prices are expected to be unusually steady this year, with seasonal fluctuations less marked than usual. The usual spring decline on better grades will probably occur later than normally. Summer prices of slaughter cattle are expected to average somewhat higher than in 1927, and it is anticipated that the fall market for such cattle will be well sustained at a relatively high level. Stocker and feeder prices in the fall of 1928 will probably average considerably higher than in 1927.

If business conditions during the last half of 1928 show improvement over the latter half of 1927, and supplies of hogs show a tendency to decrease, cattle will be in an unusually strong position, and any further decrease in market supplies may be expected to still further strengthen prices.

From the long-time viewpoint the cattle situation appears favorable. Since any increase in cattle numbers will not materially increase market supplies until late in 1930 or in 1931, cattle prices are expected to remain on a fairly high level during the next three or four years.

HOGS

The swine industry is passing through the low period of a hog price cycle as a result of expansion in production stimulated by the high hog prices and the favorable relation between corn and hog prices prevailing in 1925 and 1926. With an increase of 6 to 8 per cent in pigs raised in 1927, over those raised in 1926, no reduction in seasonal hog supplies for slaughter is indicated until next fall and winter. Some improvement in domestic demand for pork is anticipated, but information regarding European hog production indicates that export demand during the greater part of 1928 will be even lower than in 1927. With supply and demand conditions as indicated, no material change in hog prices other than average seasonal fluctuations seems likely until next fall and winter when market supplies will probably be affected by curtailed production resulting from the present unsatisfactory price situation.

The combined spring and fall pig crop of 1927, as indicated by the pig surveys, was about 5 per cent larger for the Corn Belt and 6 per cent larger for the United States, than was the crop of 1926. Losses from disease were considerably less than in 1926 as there was no serious epidemic of cholera like that which took an unusually heavy toll in 1926. Estimated number of hogs on January 1, 1928, was 58,969,000 head compared with the revised estimate of 54,408,000 on January 1, 1927.

Information regarding hog supplies for the current season November 1, 1927, to May 31, 1928, indicates that slaughterings will be from 7 to 10 per cent larger

than a year earlier. Inspected slaughter for the first two months of this season was 6.9 per cent larger than in the previous year. Most of the increase in the spring pig crop of 1927 in the Corn Belt occurred in the States east of the Mississippi River where corn production in 1927 was much below normal. The scarcity of corn in this section is causing the early marketing of these hogs and at light weights. In the States west of the Missouri River, a near-record crop of corn was raised in 1927 and hog production was below the average of recent years. In these States the corn-hog ratio, although less favorable for feeding than last year, is much above the usual differential compared with the eastern Corn Belt and there is a marked tendency to feed longer and to delay marketings. Hog receipts at markets east of the Mississippi in November and December, 1927, were well above those of 1926, but the receipts at Missouri River markets combined, were the lowest in many years.

An indicated increase of 11 per cent in the fall pig crop of 1927 over that of 1926, as shown by the December survey, points to slaughter supplies next summer and fall somewhat larger than in the corresponding period of 1927. The December, 1927, survey indicates a decrease of about 6 per cent in the number of sows to farrow in the Corn Belt in the spring of 1928 compared with the spring of 1927. The present low level of hog prices compared with the last three years indicates even a larger reduction. With average weather conditions, the spring pig crop of 1928 will probably be about 10 per cent smaller than that of 1927 in this region, which would mean a substantial reduction in market supplies in the winter of 1928-29.

Present supplies of corn are ample for hog feeding in the western Corn Belt but a shortage exists in the eastern belt, where the crop was the second smallest in many years. With corn prices approximately 20 per cent higher and hog prices 30 per cent lower than last year the corn-hog ratio is generally unfavorable for hog feeding. As no decrease in corn acreage is likely in 1928 an average yield would insure a supply of corn for feeding next fall and winter at prices which would make feeding profitable.

With increased slaughter, smaller exports, larger storage supplies, and prices of hogs and hog products much lower than in 1926 domestic consumption of hog products in the summer of 1927 was 15 per cent larger than a year earlier. A slightly larger-than-average seasonal drop in prices from October to December resulted in the hog price level at the end of 1927 being 30 per cent lower than it was a year earlier but per capita consumption was only about 10 per cent larger. The general downward trend in the purchasing power of consumers in the last half of 1927 may have been partly responsible for the low level of wholesale and retail pork-product prices. To the end of January, 1928, these prevailing low prices had caused no increase in consumer demand, which is now on a much lower level than a year ago.

It seems likely that general business activity during the first half of 1928 will increase from its present relatively low level, but it is doubtful whether the year as a whole will show as high a level of industrial prosperity as during 1926 and the first half of 1927. However, the domestic demand for hogs will probably be more benefited by the consequences of changes in retail prices than by improvements in the business situation. Readjustments in retail prices of pork products, in line with the changes in wholesale prices, have recently become marked, and beef prices have shown increasing readjustment of retail prices to higher wholesale prices. These changes will tend to turn consumer demand to pork products and help to bring about a higher level of prices for both hogs and wholesale products.

Lard stocks are somewhat large compared with recent years, but a generally improved condition in the oils and fats markets due to a shorter cotton crop and consequently higher level of cottonseed-oil prices should help to maintain the demand for lard as compared with a year ago.

Production of hogs in Great Britain and on the Continent increased greatly in 1927 with resulting much lower prices for hog products in European markets, and export demand for American pork products slumped sharply in 1927. Indications are that export demand during the coming spring and summer will be even lower than last year, but that during the winter and spring of 1928-29 it will show some recovery to about the comparatively low level of the first half of 1927.

No change is likely in the British embargo on fresh pork, which had the effect of causing a shift of Dutch production from fresh pork to cured products, with resulting greater competition for American cured products in the English market.

Numbers of brood sows in the principal foreign countries were 20 per cent larger in 1927 than the materially increased number in 1926 and will further increase foreign supplies this winter and so reduce the demand for American products. Sows in Germany in December, 1927, show only a slight decrease from a year earlier, but the hog and feed price ratio in foreign countries was so unfavorable in 1927 that it is likely that in 1928 numbers of brood sows will be sharply reduced, possibly to about what they were in 1926, as hog producers in foreign countries respond to changes in the relation of hog prices to feed prices in a manner similar to the response in this country. This decrease in sows would lead to decreased production of pigs in 1928 and some improvement in our export demand in the winter of 1928-29.

No changes are anticipated in purchasing power in our principal foreign markets which will materially affect their demand for hogs. With the greater competition from foreign production, however, and the consequent lower foreign demand for our cured pork, and to a lesser extent for lard, it is likely that exports of hog products will be even lower in 1928 than in 1927.

Supplies of hogs during the first five months of 1928 will probably be somewhat above those of the same period last season, with slaughtering perhaps 8 to 12 per cent higher than a year ago. Domestic demand is likely to strengthen, but foreign demand will probably continue to weaken, so no material improvement in the demand situation as a whole is expected.

Present supply and demand conditions, with large late shipments of heavy hogs from the western Corn Belt, indicate that the spring advance in prices is likely to be less marked than usual. It is possible, however, in view of the present low level of hog and pork product prices, that any marked improvement in domestic demand in the next few months, due to improved business and a shift to pork consumption, might result in a rather marked price increase.

Supplies next summer will probably be somewhat larger than last summer, but with continued low demand only a moderate strengthening in prices from those of the current winter can be expected, with summer and fall prices probably averaging lower than a year earlier.

If farmers carry out the reduction in the next spring pig crop that is indicated by the fall survey, supplies next winter will be substantially reduced. At the same time somewhat reduced supplies in Europe may improve foreign demand to a slight extent. While prices will be on the upward swing of the cycle, the upward trend will be just starting and no sharp advances seem likely before the summer of 1929, depending on the next corn crop and subsequent changes in numbers of hogs.

The inspected slaughter of hogs in 1927 was almost 3,000,000 head, or 7 per cent larger than in 1926. The cost of these hogs to packers was \$170,000,000 or 14 per cent less than in 1926, the average cost per 100 pounds in 1927 being \$10.03 and in 1926, \$12.47. Slaughter in 1926 was the smallest in six years and the total cost of hogs slaughtered was the largest. Total cost in 1928 will be below that of 1927. Present hog production is too large to bring largest net returns to producers. The situation of the Corn Belt producer is also weakened by the marked increase in hog production in other areas, especially in the South, which is increasing the contribution of these areas to commercial supplies and reducing the demand for products from the outside. A reduction in sows farrowing in the Corn Belt of at least 15 per cent below 1927 is needed to bring hog production back to a basis of returns comparable to 1925 and 1926. Farmers should not carry reduction too far, however, since stable production at stable prices is more desirable than extreme shifts in production which result in wide price swings.

DAIRY PRODUCTS

The position of the dairy industry appears on the whole to be fully as strong as it was a year ago. There are as yet no indications of any material expansion in dairy production in the near future. In comparison with a year ago there has been no increase in the number of cows being milked, no significant increase in the number of heifer calves being reared, and no material change in the disposal of old cows.

The relatively higher prices of feed grains and other concentrates this year as compared with last year will tend to decrease milk production during the present feeding season, but this may be offset in a measure by the abundance and cheapness of legume hays. Probabilities are that during the coming grass season the record pasture conditions of last summer and fall will not be repeated.

Domestic demand is likely to be fully maintained during the coming year. The foreign situation on the other hand is such that price depression abroad is resulting in increasing imports into our markets, with the prospect that the increasing foreign supplies will be further drawn upon to supplement domestic production.

The estimated number of yearling heifers being kept for milk on farms January 1, 1928, was 4,175,000, an increase of 127,000 head or 3.1 per cent over the number on hand a year ago. The estimated number of heifer calves saved for milk shows an increase of 217,000 head, or 4.6 per cent. Although these changes indicate a slight tendency toward increasing the size of dairy herds, the increases are small in comparison with the total number of milk cows on farms, estimated at about 22,000,000. On the whole, it seems probable that the increased number of heifer calves saved in 1927 is only sufficient to cause an increase of about 1 or 2 per cent in the number of milk cows in 1930. It is possible, however, to increase the herd by retaining old cows beyond the usual age although this tends to be prevented by the present favorable prices of beef.

Although the numbers of dairy cows slaughtered in 1927, as a result of tuberculosis eradication campaigns may have had some significance locally in certain districts, the numbers were not sufficiently great to be regarded as of particular importance from the standpoint of total milk production, being only about 1 per cent of the total estimated milk cow population.

Total butter production has shown a continuous upward trend since 1920; it was very pronounced until 1924, and has been considerably less marked since then. Creamery butter production during 1927 showed only a slight increase despite the unusually favorable pasture season. Cheese production, which had shown a strong upward trend from 1920 through 1925, turned downward in 1926 and 1927 with declines of 3 and 6 per cent respectively. Condensed and evaporated milk production continued its upward trend with a heavy increase in 1927. Production of fluid milk in most areas averaged slightly higher in 1927 than in 1926, and the percentage used for fluid purposes continued to increase.

As a whole, milk production in 1927 was but little higher than in 1926, but a larger proportion was devoted to the more valuable uses.

During the summer of 1927, increased production and reduced movement into consumptive channels caused storage stocks of butter to reach 163,700,000 pounds on September 1, a record level, and stocks of condensed and evaporated milk to become heavier than usual. Most of the extra accumulation of butter has now been worked into consumption without material effect on price, however, and the stocks of concentrated milk have not affected markets unfavorably. Cheese stocks on January 1, on the contrary, were 12 per cent lower than a year earlier, reflecting the reduced production.

In addition to domestic production, dairy products equivalent to almost a billion pounds of milk were imported, in spite of the prevailing tariffs.

With growing population and with increased consumption of dairy products, significant changes are taking place in dairy regions. In Wisconsin enlarged demands for fluid milk and sweet cream explain much of the recent decline in cheese production in that State. Increased demand for sweet cream in many eastern consuming centers has led to the growing long-distance shipment of this commodity, cutting into production of manufactured products. In eastern producing regions the upward trend in the proportion used in fluid form is likely to continue during 1928. In addition to these shifts, butter and cheese production is being expanded in some of the newer dairy regions, particularly in certain intermountain States. In the South several new condenseries have been established in regions where there is a growing realization of the possibilities in dairying. The general tendency toward higher valued products in the older dairy regions and the opening up of new territories, reflect the inability of dairy product manufacturers to compete in price with the users of fluid milk. This has resulted in the forcing backward of the "milk frontier."

The United States will probably continue to import large quantities of cheese, fresh cream, and milk, and to import some butter. Our exports of condensed and evaporated milk will probably continue to decline, owing to foreign competition in the production of condensed and evaporated milk and to the protected position of the producers of other dairy products.

Since production and prices of dairy products in foreign countries tend to affect the price level to which our domestic prices can rise, producers should

watch developments as to foreign production and markets. Foreign dairy production has recovered from the effects of the war and continues to increase. The rate of increase, however, appears to have been checked in the last two years, with supplies of butter and cheese in the principal foreign markets in 1927 practically no greater than in 1926, and only slightly greater than in 1925. The checking of supplies has been due in part, however, to temporary conditions such as drought in Australia. Present indications are that foreign dairy production next year will be maintained and may be increased. A favorable season in Australia such as in 1920-21 and 1924-25, together with favorable conditions in other important producing countries, would probably result in a considerable increase in supplies.

The ability of foreign markets to absorb the supply of the surplus-producing countries will probably be no greater in 1928 than in 1927. With no increase in the purchasing power in Great Britain, which is the most important foreign market, any increase in supplies would probably result in lowering foreign market prices and increasing shipments to this country. In Continental Europe at the present time there is not a potential market for increased supplies such as that which developed in Germany in 1924 and 1925. Germany is now producing about 85 per cent, on a milk equivalent basis, of the dairy produce consumed within that country. With this recovery in production and with no prospect of further improvement in purchasing power of German consumers no relief can be expected from that source. Improvement in economic conditions in Italy and France will probably have little if any effect upon the demand for foreign butter.

With respect to probable imports of cheese, fresh cream, and milk, it may be said that conditions appear favorable for further increase in the imports from Canada.

During recent years the total domestic consumption of fluid milk, butter, cheese and concentrated milk has been increasing. In 1927, however, there was apparently not the usual increase. The purchasing power of urban consumers declined during 1927, until at the end of the year it was materially below the early part of the year, which partially explains the slowing up of the increase in consumption of butter and cheese; consumption of fluid milk, however, continued its previous increase. The differences in price between high-grade and lower grades of creamery butter has been greater this year than for several years previous. This undoubtedly reflects in some measure the increased demand for the better grades of creamery butter.

Present indications are that business conditions will be on the upward trend through the first half of 1928, with possibly a seasonal dip in mid-year. There is apparently a long-time upward trend in the demand for dairy products. Farmers in most fluid-milk areas received moderately higher prices for their milk in 1927 than in 1926. This fact was due to the higher prices received for milk used for fluid purposes and for milk which went into surplus uses and to the greater percentage of the total production used for fluid consumption.

As predicted in the 1927 Outlook Report, the number of dairy cows has not been materially increased, and a rather favorable spread between the cost of feedstuffs and the price of dairy products prevailed through 1927. Present indications are that similar conditions will continue for another year or two and perhaps even longer. Roughages, especially legume hays, are unusually abundant this winter in the great butter-producing area of the mid-West, and silage and feed grains are as plentiful as they were a year ago. The increased supply of legume hays will tend to increase production during the winter feeding season, offsetting the usual tendency of higher prices of concentrates to reduce production. In the fluid-milk areas where the dairymen purchase a considerable portion of their concentrated feeds, the spread between feed costs and the price of milk may not be so favorable because of the relatively high cost of concentrates.

Beef cattle are in demand, the beef-producing sections are more prosperous than they have been and, with the exception of some of the irrigated sections, the increase of dairying in the beef-producing sections will probably be slower than heretofore. The number of cows slaughtered has run fairly heavy during recent months compared with last year, and with milk cows showing unexpected value for beef purposes, there is little reason to expect any marked tendency to increase dairy herds by holding the old cows, except in some of the Eastern States where the scarcity of cows has become rather acute. There has been a

sharp increase in the average price of milk cows in all parts of the country, but the increase seems to be little more than the increase in the beef value of the cows.

Summarizing the prospective supply situation for the current year, there seems nothing to indicate any increase in milk production except as the result of the general improvement in the quality of cows, methods of management, and intensity of feeding. These together will hardly increase production more than is needed for the natural increase in population. A markedly wider spread between the cost of feed and the price of dairy products would no doubt stimulate production, but there seems no particular reason to expect the present spread to be widened by any marked decrease in the price of feed, and in view of the foreign situation a materially higher price for dairy products as a whole is not expected. Although the ratio of the price of feed to the price of dairy products might easily become somewhat less favorable than at present, dairy producers can reasonably look forward to only a very gradual expansion in dairy production during the next two years and to a continuation of conditions similar to those which now prevail.

The supplies of beef cattle are low, and there is good reason to expect rather favorable prices to continue for some time. This will afford dairymen an exceptionally favorable opportunity to dispose of their old cows and low producers at prices high enough to contribute largely toward covering the cost of raising young animals to replace them. Dairymen who have cows of good productive ability, therefore, will probably find it profitable to raise more than the usual number of calves in 1928. This is particularly true of those farmers who have good reserves of hay. Prices of milk cows on January 1 averaged about 24 per cent higher than a year ago. Expansion of production should take place only at about the rate of the increase in the demand for dairy products in the United States. It should be borne in mind that the tendency to increase dairy production evidenced by last year's increase in number of heifer calves kept will not be realized in increased production until these calves have begun to produce, and if, in the meantime, the herds are increased too rapidly the result in about five years will be overproduction and depressed prices.

The generally favorable outlook for dairying seems to be shared by practically all sections of the country, and all sections show moderate increases in the numbers of heifers and calves being raised for milch cows.

In the northeast the percentage of the production needed to meet urban demands for fluid milk and cream has been steadily increasing and will probably continue to increase for some time to come. Although conditions have been improving gradually for some time there has been no corresponding increase in production principally because of the failure of the dairymen to raise heifer calves during the last few years when milk prices were low. Recently interest in dairying has been renewed and there has been an increase in the numbers of calves saved, but on January 1, the total young stock on hand seemed no more than sufficient for normal replacements.

In the central butter and cheese regions conditions seem likely to continue substantially as at present. In the eastern part of this region the shipment of fluid milk and cream seems likely to increase and those localities which are prepared to furnish a large and uniform volume of high-quality product are likely to receive the benefits of somewhat higher prices. The continued increase in butter production in the western portion of the Corn Belt does not seem likely to cause an undue increase in United States butter production.

Increasing consumption of dairy products and development of more efficient methods of production are aiding in the development of the dairy industry in the South. Indications are that there will be a fairly steady expansion, with satisfactory returns to areas which are growing into dairying. Some evidence of the expansion which has already taken place is to be found in the establishment of several condenseries in Southern States.

Dairy production on the Pacific coast is not keeping pace with demand, with the result that the coast is reaching back into the mountain country for its supplies. The upward trend in demand and the rapid development of the industry in this region seems likely to continue for some time.

SHEEP AND WOOL

Sheep numbers continue to increase and prospects indicate a lamb crop for 1928 somewhat larger than a year ago. Consumer demand for lamb is not likely to improve sufficiently to offset the prospective increase in production.

With wool stocks in this country light and with a strong foreign market the outlook for wool appears favorable.

LAMBS

The number of sheep and lambs in the United States continued to increase during 1927, and on January 1, 1928, the number was estimated at 44,545,000 head. This number was 2,699,000 head or 6.5 per cent larger than the revised estimate of numbers January 1, 1927, and the largest number in 16 years.

The lamb crop of 1927 was estimated as about the same size as that of 1926, with a considerable decrease in western lambs, offset largely by an increase in natives. The slaughter of lambs from last year's crop to the end of December was about the same as the slaughter of 1926 lambs up to the end of December, 1926. The death loss of sheep in 1927 was larger than in 1926 because of severe spring storms in the Northern Rocky Mountain States and unfavorable spring weather in the far Northwestern States. Despite the heavy slaughter of lambs in 1926 and 1927 there was a material increase in flocks both years.

The upward tendency in sheep numbers in 1927 was evident in all the principal sheep-producing areas but it was most prominent in the Southwestern States, with Texas showing the largest increase of all States.

The number of sheep and lambs on feed for market January 1 was estimated at about 450,000 head or 10 per cent greater this year than on January 1, 1927, and 100,000 head greater than on January 1, 1926. The increase this year was due mostly to increases in northern Colorado and western Nebraska, where numbers fed last year were much below normal. All of the Corn Belt States east of the Missouri River had fewer lambs on feed this year than last with the largest decrease in the States east of the Mississippi.

The market supply of fed lambs during the first five months of 1928 will be greater than during the same period last year, and about the same as in 1926. Average weights, because of a greater proportion of heavy lambs, will be larger than last year. A larger proportion of the Colorado and western Nebraska fed lambs will be marketed in January and February this year than is normally true in these months, with a smaller proportion during March and April.

Present indications are that the 1928 crop of early California lambs is larger than last year's and the largest on record for the State. Weather and feed conditions have been very favorable for the growth of these lambs and a heavy movement to eastern markets in April and May is expected. A spring movement of grass wethers and yearlings from Texas, as large as, or larger than, the heavy spring movement in 1927, also is indicated. Apparently the supply of all sheep and lambs for slaughter during the first five months of 1928 will be considerably larger than last year and the largest for these months since 1914.

The supply of lambs during the last seven months of 1928 will depend largely upon the size of the lamb crop, but if weather conditions are not unfavorable over the western States and the Corn Belt, it seems probable that the 1928 lamb crop will be larger than that of 1927 and that the slaughter of sheep and lambs during these months of 1928 will exceed that of 1927.

During the last half of 1927 prices of dressed lamb averaged about 7 per cent lower than in 1926 with only about 4 per cent increase in consumption, indicating a slackening in demand. This was further borne out by the fact that choice, light, and handy-weight lamb carcasses at New York averaged \$1.37, or 5 per cent lower than for this period in 1926. Slaughter lambs this winter are heavier in weight than a year earlier, and medium and heavy weight carcasses at New York in December sold \$2.50 or more under light and handy weights as compared with a differential of \$1.25 a year earlier. This also partly accounts for the lower average price of dressed lamb this winter.

Part of the slackening in demand, and the lower dressed-lamb prices, especially during the past few months, may have been due to the dullness in business activity and to the reduced purchasing power of consumers. The effect of higher beef and veal prices and increasing consuming population were not enough to offset larger lamb supplies and lower business.

Present conditions indicate that beef prices will continue to be maintained at a relatively high level through 1928 and that general business conditions and the purchasing power of consumers during 1928 are likely to show some improvement from the present level, which should tend to improve the demand for lamb.

Market prices of live lambs during the last half of 1927 averaged about the same or slightly higher than a year earlier. The relatively high level through October to the middle of December was largely caused by reduced supplies of

feeder lambs at central markets and the strong feeder demand, as feeder lambs sold at a rather wide premium over fat lambs. Lamb pelts were also higher than they were a year earlier. Near the middle of December increased supplies of killing lambs, accompanied by an apparent slackening in feeder demand, caused a rather sharp break in prices of all lambs, with the greatest decline on heavy weights.

The increased numbers of lambs on feed and the increased proportion of heavy lambs as compared with a year ago indicate a considerable increase in marketings during February and March as compared with a year ago. Prices during the next few months will depend to considerable extent on the distribution of marketings, both geographically and as to time.

With increased supplies of lambs from California and from other spring-lamb areas indicated, it is probable that the spring advance in prices will be less marked than usual.

Given average weather conditions, there will be more lambs to market during the last half of 1928 than a year earlier. Consumer demand may show some improvement next fall and winter over present levels, but with the probability of a lower feeder demand than a year earlier, the increase in consumer demand is not likely to be sufficient to offset the prospective increase in production.

WOOL

The outlook for wool appears favorable. Supplies abroad are light, foreign markets continue strong, domestic prices of wool are below the tariff differential from foreign prices, and no further recession in general business conditions seems probable in the near future.

The average price received by producers in the United States was 30.7 cents for the year as compared with 32.5 cents in 1926 and 38.5 cents in 1925. Domestic prices showed considerable strength during the last half of 1927, with an upward trend.

The absence of violent fluctuations throughout the last year and the satisfactory clearance of manufactured goods indicate that the wool textile manufacturing industry has regained confidence in the stability of wool prices.

American purchases abroad have been light. Stocks of wool held by reporting dealers and manufacturers in the United States on September 30, 1927, were 7 per cent greater for domestic and 20 per cent smaller for foreign wool than on September 30, 1926, with a greater decrease in combing and clothing wool because of the increased stocks of carpet wool. Stocks of combing and clothing wool in bonded warehouses in the United States on October 31, 1927, were 53,570,000 pounds, as compared with 83,377,000 on October 31, 1926.

Imports of combing and clothing wool during the first 11 months of 1927 were 62 million pounds below the same period in 1926 but consumption by reporting mills was 31 million pounds greater.

Foreign markets continued active throughout the year with keen competition at practically all the Colonial and London sales, and prices for practically all grades advanced throughout the year. Notwithstanding the lack of active competition from the United Kingdom and the United States last year, other important wool consuming countries readily absorbed the quantities offered at sale points although wool prices constantly advanced.

Estimates of wool production for the 1927-28 season in nine important producing countries, which usually produce from 65 to 75 per cent of the world's clip, indicate a decrease of about 4 per cent from last season. Sheep numbers in 18 countries, which in pre-war times produced about one-half of the world's sheep, at the beginning of or in the summer of 1927 were 361,000,000 head or 3 per cent over 1926 and 6 per cent over pre-war. The estimated number of breeding ewes for six European countries was 31,350,000 for 1927 as compared with 30,728,000 for 1926 and for the United States the number of breeding ewes one year old and over was 27,658,000 in 1927 and 29,574,000 in 1928. The increase in breeding ewes indicates an increase in those countries in 1928, but lambing in New South Wales, in Australia, and in Argentina (which countries support about one-seventh of the world's sheep) has not been very satisfactory, according to reports. The preliminary estimate of sheep numbers in Australia on January 1, 1927, is slightly below the revised 1926 figures, and a still further reduction in 1928 is not improbable because of drought in Queensland and New South Wales during most of 1927.

World wool production during the last four years has been on the upward swing of the cycle, but the per capita production for the period 1923-1926 was less than for the pre-war period 1909-1913, when total production was at the peak of that cycle. Prices of the better grades of colonial wools at London have advanced relatively more than have the lower grades and have averaged higher than the index of average wholesale prices as compared with the pre-war average, and the keenest demand has therefore been felt for the finer grades.

All statistical information indicates that wool is in a firm position. It must be remembered, however, that wool prices could be influenced by factors which can not be measured statistically.

Lamb production in this country is trending upward and approaching the peak of the cycle. The outlook for the next few years indicates the need of considerable caution in regard to further expansion in the production of market lambs. Since 1922 the number of sheep and lambs has shown an average increase of around a million heads per year. With favorable weather conditions a very large lamb crop is not improbable, and should such a crop materialize the situation might be further aggravated by the marketing of ewe lambs ordinarily retained for flock replacement or expansion and by liquidation of flocks. The outlook does not appear so unfavorable for sheep producers who depend upon wool for the major portion of their income as for those who produce market lambs.

The trend of production to heavy feeder lambs has made it difficult for lamb feeders to secure light feeder lambs suitable for finishing for the late winter and spring market, especially during years of good range conditions. Therefore it seems that producers should give serious consideration to the production of lighter weight feeder lambs. It also appears that consideration should be given to the production of higher quality wools in areas especially adapted to that enterprise.

MOHAIR

The immediate outlook for the mohair producers of the United States is much better than it was last year, but looking further ahead, producers should be careful not to expand production more rapidly than domestic demand requires. The outstanding features of the present situation, as compared with last year, are:

- (1) A great reduction in imports of foreign mohair.
- (2) A great reduction in stocks of foreign mohair in bond at customs warehouses.
- (3) A large increase in the foreign consumption of mohair.

Consumption of mohair in the United States is said to be continuing at a fairly steady rate, though at present somewhat below the level of a year ago. Imports for consumption in the first three quarters of the year amounted to 4,172,000 pounds, compared with 6,715,000 pounds for the corresponding period of 1926. The bulk of our domestic clip has been consumed, leaving only a moderate carry over of domestic mohair.

The recovery of foreign demand for mohair has been the most important factor in changing the situation. This increase in foreign demand has not only withheld the bulk of the mohair production of South Africa and Turkey from our markets but has withdrawn from our customs warehouses some of the stocks that had accumulated here at the end of last year. Receipts of foreign mohair into the United States from abroad in the first 11 months of the year amounted to only 2,470,000 pounds, as compared with 9,371,000 for the same period in 1926. Stocks remaining in bonded customs warehouses in the United States on January 1, 1927, amounted to 10,300,000, but these stocks have been reduced to less than 5,000,000 pounds by withdrawals for consumption and reshipments to Europe.

There has been a marked recovery in the mohair industry of Great Britain. In the first 11 months of 1927 imports for consumption into that country amounted to over 17 million pounds, as compared with only a little more than 5 million pounds in 1926. In the same period exports of mohair yarn amounted to over 8 million pounds, as compared with less than 6 millions for the same period in 1926. The increased export business appears to have been due largely to the recovery of business activity in Germany. At present there are no indications that the foreign demand for mohair will not continue at approximately the present levels.

Foreign supplies of mohair for next year may be no larger than for the past year. The carry over of mohair in Turkey appears to be less—about 2,400,000 pounds as compared with 4 millions last year—and the carry over in South Africa was reduced to a minimum. Production seems to be increasing in Turkey but declining in the Union of South Africa. It is unofficially estimated that during the last five years, mohair production in Turkey has increased from about 6,000,000 to about 7,500,000 pounds, while the production in the Union of South Africa has been reduced from about 15,600,000 to 11,000,000 pounds.

The prices of both domestic and foreign mohair, after reaching a low level last spring, have risen. Owing to the tariff, good combing domestic is more than 30 cents above fair average Turkish and summer first cape mohair. For December, good combing domestic averaged 78 cents compared with 45 cents for fair average Turkish mohair in bond. Judging from the outlook as to business conditions in the United States, and in particular with respect to the automobile industry, the demand for mohair in the United States in 1928 should be equal to or greater than last year. It is possible that competition for lower costs in the automobile industry may lead to some substitution of cheaper materials, but this is not likely to develop to the extent of materially affecting the demand for mohair in the immediate future. For the finer qualities especially, a good demand probably will continue through the year.

HORSES AND MULES

Higher farm income in the South and in the Great Plains this season has brought about an increased demand for horses and mules, and prices for the first half of 1928 are likely to be higher than a year ago. Present numbers of colts indicate further decreases in the horse and mule population for several years to come. Eventually, this reduction will reach a point where scarcity will cause prices to rise to higher levels. Increased breeding of work animals is advisable as a side line in areas of cheap pasture, east of the Rocky Mountains.

The increase in the January 1, 1928, farm prices of both horses and mules over those of a year ago indicates that the price decline of the last eight years has been checked, and possibly that the upswing of the price cycle has begun. Price increases are greatest in the Southern States and in the Great Plains from Oklahoma to South Dakota where farm purchasing power is higher than a year ago, and in the Appalachian States from Tennessee to Maine, including Ohio and New York, where the substitution of mechanical power for horse power is, generally, more difficult than in the States which have a less rolling and rugged topography.

During the spring and summer of 1927 the monthly farm prices of horses and mules were lower than during 1926, but during the last five months of the year, mule prices failed to make the same seasonal decline as in 1926; consequently October prices were at the same level as the year before and the November and December prices have been appreciably higher.

There has been a heavy fall movement of horses and mules into the South. Market receipts of horses and mules at the stockyards of Fort Worth, Oklahoma City, Memphis, Montgomery, and Atlanta for October and November, 1927, were 46,670 head, as compared with 10,385 last year, 36,670 in 1925, 37,764 in 1924, and 52,833 in 1923.

The increased Southern demand at higher prices is probably reflected to some extent in the States from which the mule shipments originate—Tennessee, Kentucky, Missouri, Oklahoma, Kansas, and Nebraska. Little if any price change was shown for either horses or mules in the Central Corn Belt States of Iowa, Illinois, and Indiana, and in the Far Western States.

The total numbers of horses and mules have declined about 4 per cent in each of the last two years and have decreased one-fifth since January, 1920. The number of colts foaled has become well stabilized during the last three years at about 50 per cent of 1919. Numbers of colts in current years are about sufficient to maintain horse and mule numbers of approximately 11,000,000, as compared with 20,107,000 on farms January 1, 1928, 22,214,000 in 1925, and 25,323,000 in 1920.

The demand for work animals both on the farm and in the cities has been decreasing rapidly with the increasing use of automobiles, trucks, and tractors. It is difficult to determine the extent to which this substitution of mechanical

power for horse power can be carried. The tendency in the cities seems to be to replace worn-out work animals with motor trucks rather than with young horses from the farm. The development of tractors that are better adapted for a greater diversity of farm work, and the motor cultivator, are making possible further substitution than was considered practicable a few years ago. The increased mileage of improved roads is bringing about an increased use of motor trucks in the marketing of farm products in the truck and dairy regions of the East, in the Great Plains wheat area, and in intensive livestock districts of the Middle West, and especially in the areas adjoining the large cities and towns of the country. The combine is continuing to displace work animals in the harvesting of wheat on the Great Plains and in the winter wheat sections of the Corn Belt.

The lower purchasing power and decreased crop acreages in the Cotton Belt during 1927 were reflected in a reduced demand as indicated by in-shipments of horses and mules, and in lower farm prices. With better purchasing power prevailing in these States during the 1927-1928 season, the demand for mules has already increased, as shown by increased in-shipments and higher prices. In the North Atlantic States and in Michigan, where the average age of work animals is relatively high, prices have already strengthened.

The present relatively low prices for horses, which are about 53 per cent of the 1910-1914 level, as compared with 152 per cent for all commodities at wholesale, gives little incentive to the raising of colts, especially since advancing cattle prices offer an attractive alternative. Horse prices have been at this low level for 10 or 12 years, largely because the available supply was in excess of actual needs with the increased use of motor power.

Eventually the number of work animals will be reduced to a point where scarcity will cause prices to rise. If horse and mule prices continue to advance throughout 1928, it will probably indicate the beginning of the upswing in prices that may continue for 5 or 10 years.

In any event, farmers can not expect to replace their work stock a few years from now at the present low level of horse prices. Increased breeding of work animals as a side line is advisable in States east of the Rocky Mountains, in localities where cheap roughages and pastures are available.

POULTRY AND EGGS

The number of laying hens and pullets on January 1, 1928, probably was not much different from that of January 1, 1927. Feed grains and mill feeds, which enter the ordinary rations used by poultrymen and which constitute the principal items of cost in poultry farming, will probably average somewhat higher in price during the first six months of the year. Present conditions indicate that egg production will be about the same in 1928 as in 1927. However, the low storage holdings of eggs on January 1, and the favorable outcome of the 1927 storage season, are factors which should result in better egg prices during the coming year.

The holdings of dressed poultry on January 1, 1928, were considerably lighter than on the corresponding date in 1927. With supplies lighter and with the prospective demand fully as strong as during the year just closed, the prospects of a higher level of prices for the principal classes of poultry, both dressed and alive, appear favorable, at least during the first half of the year.

The year just closed was one of the leanest since the World War for most egg producers. On the other hand, it was a good year for most storage operators. The very low egg prices which prevailed during the storage season permitted operators to show profitable margins on the storage deal in contrast to the heavy losses of the two previous years. Besides getting the lowest prices for their eggs since the World War, producers have had other difficulties to contend with. Mortality in the laying flocks was heavier than usual in some specialized egg-producing sections. Brooding and rearing was difficult on account of the damp weather in some sections. Feed prices remained high in relation to egg prices during most of the year. The receipts at the principal markets during the first four months of the year were the greatest in the history of the industry. For this period the receipts at the four leading markets were 19 per cent greater than in 1926, but receipts for the year, as a whole, were only about 4 per cent greater.

The peak holdings of shell eggs on August 1, were 10,700,000 cases, about 900,000 cases greater than on that date of the previous year, but in spite of this excess, eggs were worked out of the warehouses at a more rapid rate,

so that by January 1, the holdings had been reduced to 879,000 cases, or 217,000 cases below the holdings of the same date last year, and 584,000 cases below the five-year average. Peak holdings of frozen eggs during 1927 were also very heavy, and although these have been reduced rapidly, they were still more than 13,000,000 pounds above those on hand at the same date last year and about 18,000,000 pounds above the five-year average on January 1.

Poultry production was apparently somewhat less during the past year as shown by receipts of dressed poultry at the five principal markets. Receipts, however, of live poultry at New York showed a small increase. Prices of dressed poultry on the New York market averaged about 4 cents per pound lower, and the farm prices of live poultry averaged about 2 cents per pound lower, in 1927 than in 1926. Beginning with October, however, and continuing through the remaining months of the year, the farm prices of live poultry averaged only slightly lower than for the corresponding months a year ago.

Storage holdings of frozen poultry have been below those of the previous year since October 1, and as the storage season progressed they fell further and further behind until on January 1, they were about 27,000,000 pounds, or 18 per cent, lower than at the same date last year and less than 1 per cent above the five-year average. All classes of frozen poultry shared this decrease.

EGGS

The egg outlook is more favorable to producers than it was a year ago, because of smaller holdings on January 1, and the favorable outcome of the storage deal during the past year, which should strengthen the demand for eggs during the storage season. The more favorable situation suggested by the storage holdings is strengthened by the recent receipts at the principal markets. While receipts of eggs at the five markets for October and November were slightly larger than during the same months of 1926, the receipts for December were about 20 per cent less, and this condition has continued during the first half of January.

Specialized egg producers may receive greater premiums for the fanciest selections of spring eggs for storage. Such eggs are gaining in favor among buyers because of the increasing readiness with which they can be sold later in competition with fresh receipts.

POULTRY

The number of hens and pullets in the laying flocks on January 1, 1928, was not very different from the number on January 1, 1927. Practically no change is reported in the Central group of States, which has over half of all the chickens in the United States.

Receipts of dressed poultry at the five principal markets have run lower during the past fall and winter than a year ago. This fact together with storage stocks on January 1, which were 18 per cent below those of that date the previous year, would seem to indicate that the supplies to be marketed during the first half of the year will be no greater than during the corresponding period last year and that until the new crop becomes available, poultry prices are likely to be better than in 1927.

In view of prospective business conditions, it appears probable that the level of consumption of both eggs and poultry will be fully maintained during the coming year.

The future welfare of egg producers depends not so much upon what happens in the egg industry in 1928 as upon the possibility of success over a period of years. During recent years certain tendencies have developed in the industry which might well be considered by egg producers in planning their operations for the future.

Winter egg prices have shown a downward tendency since the World War. It is probable that the decreased spread between winter and spring egg prices will continue. The volume of fresh eggs coming into the markets during the winter months is tending to increase largely because of the increase in numbers of specialized egg farms, the presence of earlier and better pullets on general farms, and further economies in the cost of winter egg production. Storage eggs of the fanciest quality are likely to be an increasingly important factor in the winter price of ordinary fresh-gathered eggs. During October, November, and December of the past year, the fanciest storage packs sold from 3 to 5 cents per dozen higher in New York than during the previous year,

while all other grades of eggs, including fresh nearbys, sold for less than during the previous year. For about two months last fall the price level of the best storage eggs and fresh gathered firsts was about the same. Many buyers preferred the uniform quality of the storage eggs to the variable quality of the ordinary run of fresh firsts.

Large specialized poultry farms have increased rapidly in numbers during the last few years. The use of mechanical devices has made possible such developments as the commercial hatchery, large scale brooding operations, and improved poultry-house equipment. This has resulted in increased efficiency and in the ability to care for larger producing units per man. There is every indication that this trend toward greater specialization and larger units is likely to continue for some time.

FEED GRAINS AND LIVESTOCK

The average level of prices of livestock and livestock products has not changed much from a year ago when these were at the most satisfactory average since pre-war days. The price of hogs is very much lower; the price of poultry and eggs slightly lower; beef cattle prices are very much higher and prices for other livestock and their products somewhat higher than a year ago. The prices of feed grains, although somewhat higher than a year ago, are still relatively much below livestock prices, because of failure of farmers to decrease acreage of those grains in line with the decrease in numbers of livestock. The relative price of hay is even lower than that of feed grains.

The 1927 production of feed grains was not in excess of what would have been produced on the same acreage with 10-year average yields although the yield of hay in 1927 was much above average. The average production of feed grains (corn, oats, and barley) per animal unit during the three years 1925-1927 was about 12 per cent above the average for the four years 1921-1924. Hay production in relation to the numbers of hay-consuming animals has shown an upward trend for several years and in 1927 was the largest on record.

The acreage of feed grains for the last three years was practically the same as for the average of the four years 1921-1924, while the number of animal units on farms on January 1, 1928, was 11 per cent below the average number on farms from 1922 to 1925. The average acreage of tame hay during the last three seasons was less than 2 per cent below the average of the years 1921-1924, while during the past three seasons the number of hay-consuming animals on farms (expressed in animal units) shows a 10 per cent reduction from the average of the four years 1921-1924, and are now at their lowest point in many years. If average yields are secured in 1928, the outlook is for relatively low prices for feed grains and hay. With the probability of relatively small numbers of both beef cattle and hogs in 1929, the outlook for feed grains in that year is even less favorable. This should be of special significance to those farmers who raise these crops for sale.

Since the bulk of the feed grains produced in the United States is fed to livestock on the farms where grown, and income from such production is obtained from sale of livestock, it seems essential that adjustment should be in the direction of reducing feed crop acreages rather than expanding aggregate livestock numbers.

The part of the agricultural area of the United States devoted to the production of livestock and feeds has been operated on such an intensive scale during the past seven years that the combined output could not be marketed to advantage. The problem now confronting this large branch of the agricultural industry is how to operate to increase total net returns without material contraction in total farm area.

Instead of expanding livestock numbers more nearly to balance feed supplies, adjustments should look to stabilizing livestock numbers, which would probably include some increases in those areas where cash feed grains have been the main source of income; to reducing feed grain supplies by less intensive methods of culture; to turning much of the land now being cultivated to a less intensive use, such as pasture or soil improvement purposes, even allowing it to lie idle or grow up in woodlots. The saving in labor and cash by such practices would seem to give larger net returns, and, meanwhile, a better balance between livestock and feed grain supplies would result.

HAY AND PASTURE

With an unusually large carry over in sight this year from the record 1927 crop of 123,512,000 tons, the supply of hay for 1928-29 will be in excess of

the average domestic requirements for the last five years should an average yield be secured in 1928 on an acreage equal to that of 1927. With such a crop, only a slight price advance over the low price levels of this season may be expected. The continued decline in the number of hay-consuming animals will further tend to restrict demand next season, and no material increase in demand is in sight for several years.

The hay acreage is over expanded. About 1.04 acres of hay were harvested in 1927 per animal unit (1 horse or 1 cow or 7 sheep) of hay-eating animals on farms compared to 0.86 acres in 1920 and 0.88 acres in 1910. In addition, hay yields have shown a slight upward tendency during this period, largely because of the substitution of tame hay acreage for low-yielding wild hay acreage. From 1910 to 1919 the acreage of hay roughly followed the trend in hay requirements. Since 1919, however, the number of hay-eating animals steadily declined while hay acreage continued to increase to its highest point in 1922. The 1927 acreage was only slightly below the record 1922 figure and was 10 per cent larger than in 1910, while the number of animal units of hay-eating animals on farms was approximately 5 per cent smaller than in 1910.

Another contributing cause for the present low farm price levels for hay has been the decrease in the number of horses in cities during the period 1910 to 1927 which has been much greater than the decrease for all hay-eating animals on farms. The city horse population decreased about 70 per cent from 1910 to 1925 according to a survey of 19 cities. This decrease has continued since 1925. Receipts of hay at such markets as Boston and New York for the years 1910 to 1927, indicate plainly the effect of this decreased horse population in cities on the demand for hay in those markets. In 1910-11 the total receipts in these two markets amounted to 501,280 tons; in 1920-21 to 228,934 tons; and in 1926-27 to 89,720 tons; or a decrease of 82 per cent from 1910-11 to 1926-27.

The outstanding regional change in hay acreage from 1910 to 1927 occurred in the Southern States, where the acreage increased 60 per cent. Hay acreage in the South Atlantic States increased from 2,800,000 acres in 1910 to 4,800,000 acres in 1927, and in the South Central States from 4,600,000 acres to 7,200,000 acres. In the Mountain and Pacific Coast States the acreage increased from 8,880,000 acres in 1910 to 11,300,000 acres in 1927, with little change in other geographic regions.

As a result of over-expanded acreage in proportion to livestock requirements, the purchasing power of hay for 14 years has been below that of farm products in general. The large crop of 1927 forced the purchasing power of hay to 58 in November, 1927, compared with 91 for farm products in general, based on 1910-1914 relationships.

During the last 20 years there has been a decided shift in the demand from timothy and other grass hays to legume hays. This shift was due to increasing use of legume hays for all kinds of livestock, especially dairy cattle, to increasing numbers of dairy cows, and to the decreasing numbers of livestock which use nonlegume hays.

The proportion of legume hay acreage to total hay acreage has increased distinctly in recent years to meet the changing demand. The legume hay acreage increased from about one-fifth of the total hay acreage in 1910 to one-third in 1927, the alfalfa acreage from 7 per cent to 15 per cent, whereas timothy and wild hay acreage decreased from one-half of the total hay acreage to one-third.

The increasing popularity of and demand for the legume hays, is indicated by the gradual improved price position of alfalfa and clover hay compared with that of timothy and prairie hay, even though legume acreage has increased materially while that of timothy and prairie hay has declined. Furthermore, the price position of the top grades of alfalfa hay which are in demand for dairy feeding is distinctly higher than that of the common grades of this hay or than that of timothy and prairie hays of any grade. Hays which have high protein content, such as U. S. No. 1 Alfalfa or U. S. No. 1 Clover, have shown a distinct tendency to rise in price as information became more widespread as to their nutritive value in animal rations, and such grades of hay are comparatively unaffected by the supply of and demand for common-run hay. Increased quantities of high-grade alfalfa and clover would find a ready sale.

No material increase in the demand for market hay in 1928-29 can be anticipated by growers unless regional crop shortages occur. In many dairy districts, however, the demand for high-quality, high-protein hay is increasing

slowly but steadily because of the tendency among producers of fluid milk to purchase a larger proportion of their hay requirements.

Profitable market returns from alfalfa or clover hay are possible in many sections tributary to the many large milk-producing and cattle-feeding districts of the country by growing that kind of hay which best meets the requirements of neighboring markets and by following those practices which insure high grades, such as cutting alfalfa not later than half bloom, or clover not later than full bloom, windrowing the hay when only partly cured, preferably with the side delivery rake, and so storing and baling as to retain a high degree of leafiness.

The production of timothy and other grass hays for market has become relatively, and often actually, unprofitable except in those few areas tributary to markets where these hays are still in limited demand, such as Boston, New York, Chicago, Cincinnati, and St. Louis. Offerings of timothy and of other grass hays will be ample for market requirements in 1928-29 unless drought restricts production in important producing sections. An average crop in 1928, however, will probably result in somewhat better market prices than those which prevailed after the record-breaking crop of 1927. The lower grades of timothy and other grass hays, representing the overripe or rain-damaged hay, will bring disappointing returns, as usual, in most cases.

Recent changes in freight rates on hay, effective at least until August 15, 1928, place the East North Central States on lower through rates to the South than have heretofore prevailed in relation to the trunk-line rates from New York State to the South. These changes favor the purchase of an increased proportion of the southern hay requirements from the East North Central States and a decreased proportion from New York State.

The national outlook for both farm and market hay suggests the need of a shift of the least profitable timothy or grass hay acreage into pasture or legumes, especially in those sections which have been accustomed to dispose of surplus hay in city markets or in the Southern States. Additional pasturage would lower the costs of livestock production and utilize some land that might otherwise be idle. This suggested conversion of some hay acreage into pasture acreage has special significance in many dairy sections. Many dairymen in sections that are not adapted for legume hays would find it more profitable to pasture the poorest timothy or other grass fields and to purchase high-grade alfalfa or clover hay. In Western regions where alfalfa is the chief hay crop, and where the number of cattle has decreased in recent years, any general increase in alfalfa acreage is not advisable this season.

FEEDS

Supplies of feed for the rest of the season are generally adequate. About the same quantity of feed grains is available as a year ago, and stocks of legume and other hays from the record crop of 1927 are unusually large. A slightly smaller supply of by-product feeds, however, is likely to become available during the rest of the season than for the same time last year. Prices of by-product feeds and feed grains are materially higher than a year ago, but hay prices are much lower. This suggests that more hay and perhaps less grain will be fed in general than during the comparable period in 1927, providing average weather conditions prevail. No data are available upon the consumption by horses and stock cattle, but the number of these animals is somewhat smaller than a year ago, and there are fewer cattle on feed this season. The number of dairy cows is almost the same as a year ago, and reports upon milk production since winter feeding began, indicate that dairy feeding is approximately on last year's level.

The supply of feed grains at the beginning of the season was slightly larger than for 1926-27, but exports of barley to date have been much larger this season than last. In addition, the high price of corn during August and September doubtless favored unusually heavy feeding of oats and barley in those months. Production of all hay this season was about 29 per cent larger than the short crop of 1926, and domestic supply for the season amounts to roundly 134,000,000 tons. This is the largest figure on record. The harvest of legume hays showed an even sharper increase than that of all hay and is nearly 40 per cent larger than the 1926 harvest.

In general, a materially smaller quantity of by-product feeds may become available during the rest of the feeding season than for the same time last year. A slightly larger quantity of wheat feeds may be produced in the six months January-June than during this time in 1927, but indications are that stocks of these feeds in practically all positions are even smaller than

the limited reserves of a year ago, so that less may be available for use. Production of these feeds during the early months of the 1927-1928 crop year was materially smaller than the liberal output for the same time in 1926-1927, and offerings, on the whole, moved immediately into consuming channels so that no material reserves were accumulated. Sharply reduced supplies of screenings and mill oats from the Northwest have caused a larger use of wheat feeds by mixed feed manufacturers. Production of wheat feeds during the second half of this season may be slightly larger than for the same time in 1926-27, since the lighter flour output earlier in the season may be offset by increased grindings in the latter part. In addition, nearly 0.3 pound more wheat per bushel has been going into offal this season than last.

Statistics indicate that only slightly over half as much cottonseed meal is available as at this time last year. Crushers' holdings of cottonseed meal and cake on January 1 were slightly larger than a year ago, but it appears that only a little over half as much cottonseed remains to be crushed during the rest of the season as at this date a year ago. In addition, stocks of cake and meal in other hands are probably considerably smaller than at this time in 1927, since, this year, dealers were not encouraged to buy by low prices as they were last year.

The early movement of cottonseed was heavier than last season, and receipts at crushers, up to the end of November, were 90 per cent as large as those at the same time in 1926-27, although the crop this year is only about 70 per cent of last year's harvest. The smaller remaining supply was reflected by the reduced deliveries of seed to crushers in December this season, which amounted to only 438,000 tons, against 855,000 tons for that month in 1926.

Indications are that slightly more linseed meal may be crushed during the remainder of this season than for the same months last year, depending upon the demand for linseed oil. The quantity of this feed which will be available for domestic consumption will continue to be affected by export demand. A little less than half of the total amount crushed is commonly exported.

The production of gluten feed and meal so far this season has exceeded the corresponding figures for a year ago, and trade reports indicate that the output continues large.

The supply of hominy feed for the rest of the season is likely to be hardly so large as for the same period last year. The production resulting from domestic cornmeal, hominy, and grits manufacture is expected to be about the same as for the same time last year, but export demand for cornmeal and corn flour is less active than it was a year ago.

POTATOES

Present indications are that unless farmers change their plans there will be a substantial increase in the acreage planted to potatoes this year. Preliminary reports indicate that farmers in the North Atlantic and North Central States are planning an increase of about 14 per cent. Scattering reports from the South indicate an upward tendency but probably no material increases in acreage except possibly in North Carolina and Virginia. In some of the western States, where low prices are now being received, substantial decreases in acreage are to be expected, but the limited number of reports so far received do not indicate that growers are as yet planning to make decreases sufficiently radical to offset the increases that are reported as intended in every State from Maine to Nebraska. If these January intentions are carried out, as they were last year, there would seem to be no section of the country where the chances will be in favor of returns from potatoes comparable to those secured during the last three years.

The acreage of potatoes in the United States is becoming steadily more concentrated in the best producing sections and on the farms of those growers who have learned modern methods and who raise an acreage large enough to permit the use of labor-saving machinery for planting, spraying, digging, and grading the crop. The quality of potatoes used for seed is also improving at a remarkable rate. This year sufficient certified seed is available to plant nearly a fifth of the entire acreage of potatoes in the United States, and an even larger proportion of the total acreage will be planted with potatoes grown from carefully selected seed stock. Average yields in the United States have been increasing quite rapidly during recent years. Prior to 1920 yields were mostly below 100 bushels per acre, but with average weather conditions a yield of about 114 bushels per acre must now be expected. As the increased use of improved seed is also increasing the percentage of the crop

that is of marketable quality it is evident that fewer acres per capita are now required to supply consumptive needs.

In 1927 the yield of potatoes was 114.7 bushels per acre and 402 million bushels were harvested. As potatoes are being extensively utilized this season as feed for livestock in some of the western States it appears that the 1927 production was more than was really needed for human food. If production is further increased this year the quantity actually marketed may be expected to show little further increase but a greater proportion of the crop will be used for stock feeding, starch, and other low-value purposes.

Reducing the 1928 potato acreage below that harvested in 1927 would probably improve returns to growers, but in a majority of the States growers were apparently encouraged by the prices received for the 1927 crop and are planning to increase their acreages. To determine the extent of the increase to be expected, some representative growers were asked to report the acreages which they intended to plant. The growers, who have reported to date, expect to plant 7 per cent more acres to potatoes than they planted last year. If these reports represent the present intentions of all growers, as they did last year, it appears that the acreage of potatoes will be increased from the 3,505,000 acres in 1927 to somewhere around 3,750,000 acres in 1928, unless growers change their plans or the planting of the intended acreage is prevented by weather conditions.

With an average yield of 114 bushels per acre, 3,750,000 acres would give a total crop of about 428,000,000 bushels and probably bring a repetition of the low prices which prevailed when the crops of 1922 and 1924 were being marketed. Production will of course depend largely on weather conditions, but if 3,750,000 acres of potatoes are planted there would seem to be nearly three chances out of four that the crop would exceed that of 1927.

Growers of late potatoes would do well to keep the foregoing facts in mind and to consider the bearish effect upon prices which the greatly increased 1927 crop had as compared with 1926. The increase of some 30,000,000 bushels of late potatoes in 1927 was due largely to heavier plantings in the West. Acreage and production in that section have been gaining more rapidly than is profitable for growers there. Plantings in the Mountain States in 1927 were 50 per cent greater than in 1924, and the Pacific Coast States show an increase of one-third during the same period. Combined production of 80,000,000 bushels in these nine States compares with 49,000,000 bushels in 1924. The 10 North Central and Eastern States, which produce a surplus of late potatoes, show more moderate acreage gains during recent years, and in 1927 yields in various important areas were reduced by drought, frost, or blight. In each of these 10 States, the number of farmers planning to increase their potato acreages appears to outnumber those planning decreases by at least two to one. Unless there is a more general realization of what this means there is likely to be a difficult marketing situation in these States next fall.

In the South, there are as yet no indications of a general increase of acreage, though a few States seem to be planning larger plantings. However, the price of late potatoes is lower, the quantity still in storage probably is greater, particularly in the West, and the chances of profit seem hardly as good as they were a year ago.

Some of the Intermediate States, especially along the Atlantic seaboard, had exceptionally heavy yields last season, which prolonged their marketing period and slowed down the early market for northern or main-crop potatoes. The chances for a repetition of such exceptional yields are not great, but even with average yields, if this group materially increases its plantings, there is danger of heavy supply and low prices during the late summer period.

Considering the probability of an increased supply of potatoes, growers of late potatoes will do well to reconsider their plans for the coming season. Growers who plant heavily should make every effort to hold down their costs per bushel. Those who are planning to expand their potato acreage because of the profits secured during the last three years should bear in mind the unfavorable returns during the previous three years, 1922 to 1924.

SWEET POTATOES

Reduction of acreage of sweet potatoes in 1928 in both the commercial eastern coastal section and in the South would seem necessary in order to bring prices up to a more favorable level.

Shipments from the eastern coastal producing region, from Virginia to New Jersey, where the dry-fleshed type of sweet potato is grown, dominate the

marketing situation, at least during the fall months. During the past year sales were very draggy and prices were low in that territory. It was a particularly discouraging season on the eastern shore of Virginia and Maryland. Probably part of the remedy for growers, particularly in Maryland and Delaware, lies in better grading and packing. A more even flow to market from Virginia would seem to offer good opportunity for increased returns. There seems little excuse for shipping 70 per cent of the Virginia crop during two months—September and October—as has been done in recent years.

For this eastern region, it would seem that plantings might well be reduced about 10 per cent. This would provide an acreage which would, in a normal season, produce around 8,000,000 bushels. At least in those years when the eastern territory has had a crop of about 8,000,000 bushels, prices have been fairly high and some profit has been made. When the crop has exceeded that figure, returns have been discouragingly low. Virginia had the huge total of 5,800,000 bushels in 1927, and the four States in the eastern region had a combined total of 10,000,000 bushels.

Present indications are that in other States throughout the South, where sweet potatoes are grown mostly for local consumption, the acreage will be reduced in 1928. As pointed out in the Outlook Report issued a year ago, a very low price for cotton frequently results in the planting of an excessive acreage of sweet potatoes. A year ago cotton was selling at a low price and the acreage of sweet potatoes was increased 15.5 per cent in these States. As the 1927 crop of sweet potatoes brought much lower prices and cotton sold for a much better price, a fairly substantial reduction from the large 1927 acreage of sweet potatoes in the Cotton Belt is to be expected. Although there is as yet no reason to expect supplies to be unusually light, there is an opportunity, in nearly all parts of the South, for those individual growers who will secure improved seed and supply their usual markets with well-graded and well-cured sweet potatoes.

CABBAGE

Lower prices received for the 1927 crop tend to emphasize the truth of the statement made in the Outlook Report for 1927 that 1,000,000 tons of cabbage "seem to represent approximately present market requirements, and during recent years any production materially in excess of that figure has resulted in prices so low that planting has been reduced the following season." Thus the 1927 crop, which was 163,000 tons over the 1,000,000 ton mark, has suffered a reduction in price, as compared with 1926, of \$1.98 per ton. It seems apparent that a moderate reduction in acreage (not over 10 per cent) is necessary, assuming average weather conditions, to restore the price to a better level and there is no justification for continuing the present upward trend in acreage.

Production of Danish cabbage in the late States appears to be particularly closely adjusted to demand. Thus, in 1926, an increase in production of only 10 per cent over 1925 resulted in lower returns to growers and, in 1927, a further increase in production of about 8 per cent over 1926 caused a decrease of \$3.17 per ton—a drop of about 30 per cent. A cut of 8 per cent would restore acreage to about the level maintained in 1924, 1925, and 1926. With average weather conditions this would result in a crop which could be expected to sell at higher prices.

The production of Domestic cabbage in the late or northern States is influenced to a considerable extent by the quantity contracted by kraut factories. An acreage equal to that planted in 1927 (24,900 acres) should not be excessive in 1928, in view of the fact that yield was the highest for the last five years and the acreage was the lowest—1925 excepted. This seems true even when it is considered that, owing to the very low price of both Danish and Domestic cabbage in November and December, 1927, kraut factories have cut to capacity and their takings in the fall of 1928 may be light. If any reduction in acreage of Domestic cabbage is justified it should not be more than 5 per cent.

In the early shipping States, where slightly over one-fourth of the tonnage has been produced during the last three years, there is a tendency to sharper fluctuations in acreage, with a doubtful benefit to growers. Relatively high prices received by growers in these States the previous year, or relatively high prices received for cabbage grown in Northern States in the fall, frequently have led to too great confidence and to overplanting. This season, with supplies of late cabbage reported in commercial storage and in growers' hands on January 1 very much heavier than a year ago and with relatively low prices for northern cabbage, the indicated decrease of about 21 per cent for early cabbage in Florida and Texas is a move in the right direction.

Yearly adjustments of the early acreage, to offset either heavy or light production and the quantities entering storage in the late States, are desirable. Growers in the early and midseason sections should obtain information from competing sections before deciding on the acreage to plant.

ONIONS

A general reduction of 10 per cent below the 1927 acreage of onions in the late or main-crop States would, with average yields, produce a crop about the same size as that produced in 1925 and would probably restore the more favorable price level of that season. Nearly 50,000 acres of onions were grown in the late-shipping States last year. This was an increase of only 6 per cent over 1926, but with yields averaging 342 bushels per acre, compared with an average of 328 bushels for the preceding three years, production was increased by 12 per cent and reached the high total of 17,063,000 bushels. With the exception of a few States, average prices to growers for the season to December 1 were considerably below those of 1926 and were 39 per cent below the level of 1925. Price movements since December 1 have been such as to increase this spread between returns for the 1926 and 1927 crops, being less favorable for the latter. During the five seasons prior to the present season, imports, principally from Spain, during the period September to March, inclusive, have not varied greatly, although trending slightly upward during the four seasons 1922-23 to 1925-26 and downward since then. They have averaged for the five seasons about 9 per cent of the United States shipments during the same period.

The acreage of Bermuda-type onions in three early States (Texas, Louisiana, and southern California) has been increased about 10 per cent and is the largest in the past five years. Whether the crop likely to be produced on this acreage can be marketed at profitable prices depends largely upon the quantity of northern-grown onions remaining in storage in the spring and upon total imports from Egypt and other sources during the crop movement. Information is not yet available as to the plantings or the probable crop in Egypt for 1928 export shipment, but the trend of United States imports from Egypt is upward. Last spring, imports were unusually heavy, being nearly twice as great as in 1926 and amounting to about one-third of the domestic movement of the Bermuda-type onions during the period March to June, inclusive. There is danger that continued increases of acreage in the early States, especially with heavy production in late States, will greatly lower the price level for Bermuda-type onions in the spring. Plantings in these States should be made with due regard to the size of the northern crop.

Growers in the intermediate States (Virginia, New Jersey, Kentucky, Iowa, northern Texas, and Washington) would hardly be justified in increasing their acreage or production over the rather normal level of last year. It is too early to have authentic information about competition from imports in July and August, 1928. However, during these months in 1926 and 1927, imports were equal to about 10 per cent of domestic shipments. For the last five years they have averaged 14 per cent of domestic shipments.

BEANS

The 1927 crop of about 16,872,000 bushels of dry, edible beans is apparently fully equal to domestic demands. The total production in 1926 was larger than in 1927, but the pick of damaged beans in 1926 was heavy. If the same acreage is planted in 1928 as in 1927 an average yield would give about 17,800,000 bushels. An increase over that figure would probably result in a further reduction in prices, even allowing for average pick and for normal increase in consumption.

The quality this season in most States is exceptionally high and the supply of merchantable beans appears to be greater than last year. Hence, the 1927 crop is being marketed at price levels slightly lower as a whole than were paid for the 1926 and 1925 crops.

Since 1923 imports and exports have been comparatively small. Foreign price levels range too low to justify the production of beans for export except for limited quantities of some special types. Either the surplus of any crop which is larger than our domestic requirements must be carried over, with a depressing effect on prices of the following crop, or the entire crop must be marketed at prices influenced by the price paid for export beans.

The total production of pea beans in 1927 was about 4,800,000 bushels, which is 20 per cent less than in 1926 and 37 per cent less than in 1925. However, losses from weather damage were light this season, compared with unusually

heavy damage the two previous years, and on a hand-picked basis the production is about the same as in 1926 and 16 per cent less than in 1925. Prices showed a steady upward trend during the summer of 1927. They have declined slightly since September, but have averaged higher than in any similar period since 1923. Growers' returns were enhanced by the low pickage and by the high quality of the crop. The demand for pea beans for canning has been rapidly increasing during recent years, but its established position as the standard dry bean in grocery trade is being vigorously contested by the newer western types. The present supply of pea beans, which appears ample for normal demands, was produced with acre yields materially below the average. A slightly smaller acreage, with an average season, would produce a supply equal to probable needs.

There was a heavy decrease in the excessive production of red and dark-kidney beans following the rapid decline in prices at the beginning of 1927. The present supply is considerably below the average of the last five years and present prices are higher than the low levels of 1927. The market demand for these beans is relatively limited and plantings of this type may easily be overdone.

The production of great northern in 1927 was the largest on record—2,523,000 bushels compared with 1,335,000 in 1926 and 1,530,000 in 1925. Owing to depleted stocks in distributors' hands, the 1927 crop moved rapidly at prices to growers only slightly below those of last year. The rapid increase in the production of this class of beans and the readiness with which it has been marketed has made it a strong factor in the white-bean markets in competition with some of the older types; however, a further heavy increase in production in 1928 would be likely to result in considerably lower prices.

The Pinto, grown mainly in the nonirrigated farming sections of Colorado and New Mexico, has increased from a production of less than a million bushels in 1920 to over 2½ million bushels in 1927. Although yields have averaged relatively low, and large acreages are frequently lost by drouth, plantings have greatly increased, with prices ranging usually from 4 to 6 cents per pound. The consideration that an excessive acreage might easily depress the price to much lower levels should suggest to growers that any expansion of the acreage of these beans this year should be held within moderate limits.

The high prices paid for both Lima and Baby Lima beans for three years in succession led to heavy overproduction and low prices in 1926—about 6 cents per pound for the Limas and 5 cents for the Baby Limas. Although the production of Limas was reduced about 13 per cent in 1927, the heavy carry-over held prices at about 6 cents. Baby Lima production fell from 950,000 bushels in 1926 to 540,000 bushels in 1927, and although the carry-over was heavy the price rose about 1 cent.

FRUITS

Production of most fruits and melons has reached a point where it is difficult to market these crops at satisfactory prices in years when weather conditions are favorable for good yields. Because of adverse weather conditions the 1927 fruit crop was the smallest since the light crop of 1921. Production of the leading fruits and melons combined in 1927 was about 15 per cent less than the average of the preceding five years and 27 per cent less than the very heavy crop of 1926. In quantity this production in 1927 totaled about 11 million tons compared with some 15 million tons in 1926 and an average of 13 million tons during the five-year period 1922-1926.

Imported fruits, especially bananas, are an important factor in market supplies. The quantity of bananas brought into this country annually has increased steadily during the last 10 years and in 1927 was 89 per cent greater than the quantity imported in 1918. The importance of bananas in our markets is indicated by the fact that for the five-year period ending with 1927 imports of this fruit in terms of carloads have approximately equaled the carload apple shipments of the same period.

Fruit production has been increasing rather rapidly during recent years and has now reached a point where large quantities of fruits (particularly apples, peaches, grapes, and grapefruit) go to waste in years of heavy production. The increased production during recent years is the result of large plantings induced by periods of high prices, and was further artificially stimulated in some areas by those who had land for sale or who were otherwise financially interested. The apple industry, for example, is still suffering from the excessive plantings during the boom period which followed the short crops from 1907 to 1910 and which practically ended when the crop of 1912 was harvested.

In the Southeast peaches were overplanted during the years 1921 to 1924 following several years of high prices; and the present grape situation is the result of the excessive plantings in California which have just come into production. During the last year or two, fruit planting has proceeded on a moderate scale except that the good prices resulting from the recent short crops of citrus fruits have unduly stimulated real-estate promotion and grove planting in certain areas. In view of the very heavy losses experienced when an excessive acreage of fruit trees is planted it is hoped that future plantings can be based more on the long-time prospects for the fruits in question and less on the area of land that is for sale.

It should be recognized that the area of potential fruit land is so great that continued pressure of heavy supplies of fruit on the markets and keen competition among the various fruits may be expected. Consumers are demanding higher quality than formerly in their fruit purchases and substantial premiums in price are being paid for the better grades. This fact is tending to raise the average quality of market supplies and is worthy of careful consideration by growers in planning their production programs.

CITRUS FRUITS

The 1928 outlook indicates, as did those of 1926 and 1927, a marked increase in the bearing acreage of grapefruit and oranges, and a very large increase in their production in years when favorable growing weather prevails. The lemon acreage will doubtless remain about stationary during the next few years. In general, the outlook is unfavorable for additional plantings.

The estimated bearing acreage in California oranges has increased steadily from 107,000 in 1914 to 185,500 in 1927 but is expected to remain stationary during the next three years. Both Florida and Texas have large acreages in nonbearing trees. In the former more than one-fourth of the total trees are still nonproductive, while in the latter very little of the acreage has attained commercial bearing age. Any further increase in California orange production will probably be in the Valencia rather than in the Navel crop. A development of interest, particularly to Valencia orange growers, is the increase during recent years in exports to the United Kingdom. The shipments to that market in 1927 were 588,000 boxes, compared with 234,000 boxes in 1926 and 31,000 boxes in 1925. The bulk of these exports to England moved during the summer months when the competition of oranges from other sources was not as keen as during the winter.

Grapefruit trees of bearing age have about doubled in number in Florida since 1919; in Texas, with an acreage variously estimated between one-third and one-half of the Florida plantings, only a third of the trees are estimated to be of bearing age and very few have yet reached full production. An outstanding development in the grapefruit situation is the marked increase in shipments to the United Kingdom. In 1927 about 400,000 boxes were shipped, as compared with 150,000 in 1926, 140,000 in 1925, and 50,000 in 1924. This increase would indicate that the English consumer is rapidly developing a taste for grapefruit. This demand will doubtless grow especially if small fruit of good quality is provided.

The indications for the years just ahead are that whenever a good crop of either oranges or grapefruit is produced it will be marketed at prices considerably below those which have prevailed in 1927.

Lemon production in the United States has been so great for several years that the growers have not been able to market the total supply as fresh fruit at satisfactory prices. Imports of lemons have been rapidly decreasing during the last few years. In Sicily, the leading competitor of California, there has been a marked downward trend in production since before the World War, although some new plantings have been made recently because of increased returns to growers due very largely to the importance of the lemon by-products. If the price level for fresh lemons and by-products remains the same as has prevailed during recent years, a gradual growth in Italian lemon production may be expected.

APPLES

In the 1927 Outlook Report it was stated that the apple industry as a whole was gradually approaching a more stabilized condition, but that commercial plantings would hardly be justified except under unusually favorable conditions. This statement is applicable to the situation in 1928, in spite of the light yield in 1927 and the higher prices. It is probable that commercial apple

production for the country as a whole will continue to increase gradually during the next 5 or 10 years. The rate of increase, however, is likely to be less than during the last decade, for production in the Northwest appears to have about reached its peak and only moderate increases are expected in most other sections.

There is nothing in the apple outlook to discourage unduly the commercial growers who are favorably located and who produce high-quality fruit of desired varieties at a low cost. This applies particularly to growers who can count upon a local demand for a particular quality or variety, or who are so located that they can often produce a good crop in years when the total crop is below average. On the other hand, there is little reason to expect profitable production in orchards where returns have been disappointing because of poor location with respect either to markets or to growing conditions.

Excepting seasons of adverse weather conditions, heavy market supplies of apples have been produced in recent years and the commercial crop of 1926 was the largest on record. This is true in spite of the fact that the number of apple trees in the United States has been decreasing. In 1920 the number of trees in the country was 70 per cent of the number in 1910, and in 1925 it was 64 per cent of the number in 1910, according to the United States Bureau of the Census. In other words, from 1910 to 1925 there was a decrease of 79,000,000 trees out of a total of 217,000,000 reported in 1910. This decrease in the number of trees has been mainly in the less-favored producing areas and in the family orchards which are well scattered over many of the States. Concentration of orchards in the more-favored districts, and improved cultural methods, have increased commercial production.

In the boxed-apple region, the apple industry has developed rapidly during the last 15 years but has now reached a position of more stabilized production. From 1910 to 1920 the number of trees of bearing age in this region increased 75 per cent, but from 1920 to 1925 there was a decrease of 14 per cent. The prospect of more stabilized conditions of production in the boxed-apple region is further indicated by the fact that in 1925 only 13 per cent of the trees in this area were not of bearing age, compared with 55 per cent in 1910.

In the barreled-apple region the number of bearing trees decreased 39 per cent from 1910 to 1925. In this area the proportion of trees which were not of bearing age has remained practically constant at about 27 per cent of the total number of trees for all three census years 1910, 1920, and 1925. In certain commercial areas, notably in some sections of the Middle Atlantic States and in New England, the proportion of young trees indicates rather large increases in production during the next few years, especially in early varieties and in some of the higher-quality fall and winter varieties.

Heavy production of other fruits will continue to furnish keen competition for all apple districts. A favorable factor is the tendency toward an increase in the quantity of apples exported. The exports of the last five crop years averaged approximately 12 per cent of the commercial crop and were about two and one-half times the exports of the five seasons preceding the World War. It seems probable that the foreign demand for United States apples, especially of the better grades, will increase somewhat. The foreign demand is mostly for the medium and small sizes. Consumers both at home and abroad are demanding higher quality than formerly in market supplies of apples, and successful growers generally will find it necessary to give more attention to supplying their markets with high-grade fruit of desired varieties.

For the remainder of the 1927 crop season it seems likely that the generally satisfactory marketing conditions which have prevailed up to this time will continue. The 1927 commercial crop of apples in the United States was 34 per cent smaller than that of 1926 and 23 per cent smaller than the average of the previous five years. The crop has been moving into consumption at a satisfactory rate. The smaller crops of oranges and grapefruit will offer less competition than last season. Cold-storage holdings on January 1, 1928, equivalent to more than 20,000,000 bushels, were about 27 per cent less than those on January 1, 1927, and 16 per cent less than the five-year average for that date.

Competition from the large European apple crop of 1927, the lighter crop and higher price level of American apples, and heavy supplies of Spanish oranges in European markets have resulted in reduced exports of American apples this season. Exports from the United States and Canada, equivalent to more than 8,400,000 bushels by January 14, were only a little more than half the quantity exported by the same date last year. Well-graded and good-quality stock of certain varieties may, however, meet with a fair demand in some European markets

during the remainder of the season. The large Australian apple crop will offer strong competition toward the end of the marketing period for American apples.

PEACHES

The peach situation is still much the same as stated in the Outlook Report for 1927. Under normal weather conditions, heavy production and difficult marketing conditions may be expected during the next few seasons. This is true, notwithstanding the fact that the 1927 crop was 35 per cent smaller than the crop of 1926, mainly because of unfavorable weather. Because of neglect, disease, and age of trees some decrease in the pressure of heavy supplies on the market is likely to occur within five years. Young orchards in good locations, if given proper care, may later produce crops under somewhat more favorable market conditions.

In certain districts in the South, some of the poorer orchards have been pulled out during the last year. Plantings in recent years have been light. However, a large percentage of the trees which were set out during the period of heavy planting from 1921 to 1924 in the South and in certain Middle Western States, have scarcely reached full bearing age. The potential bearing capacity of orchards in the southern area is so great that a considerable reduction in number of trees would result in a higher farm value for the crop under average weather conditions and would offer relief to many growers from the generally unsatisfactory returns of recent years. The rapid expansion in the commercial peach industry since 1920 is shown by the fact that carload shipments during the last four years were about 42 per cent greater than during the preceding four years.

Trees which have been unprofitable during the last few years because of poor location or inferior varieties, or because of their low bearing capacity owing to old age or disease, will continue to be unprofitable during the remainder of their life. For the present, it would seem that growers in the important commercial areas of the South and Middle West should concentrate on taking care of the trees of varieties which have shown the best returns and which are well located and have a goodly proportion of their bearing life ahead of them.

In the Middle Atlantic and Mountain States, a smaller percentage of the trees are young than is the case in the South, and in those areas, limited plantings, sufficient to maintain the present volume of production, seem justified. Such orchards as are set out should be on the most favorable sites and should be of standard commercial varieties, particularly in cases where the crop is to be shipped to distant markets. In California, where a large part of the crop is used for canning and drying, production has been very heavy. In 1927 about 13 per cent of the crop was not harvested because of marketing conditions.

In years of exceptionally heavy production, poorly-packed peaches of inferior quality and condition, or peaches of small size, often do not bring enough to pay packing and marketing charges and, when put on the market, they tend to lower the price of the better grades. A united effort on the part of growers and shippers to maintain high standards and to secure the best distribution of the crop will be to the advantage of all. With production now at a point where profits to growers in some areas are very uncertain, more care than usual is necessary along these lines.

GRAPES

Basic conditions in the grape industry are about the same as a year ago. The national outlook is for continued heavy production for several years. The apparent slightly upward trend in the new high level of consumption may continue but it is likely to be too slow to remedy the present situation without other aids. In fact, an immediate appreciable reduction in acreage, particularly in California, would seem to be the best means of quickly relieving recent unsatisfactory marketing conditions.

The situation in California continues to overshadow that in all other sections. Increased production in that State in 1927 more than offset relatively light crops in the Eastern and Middle Western States and resulted in a record-breaking production for the United States. Carload shipments from California approximated the record movement of 1925 and the estimated tonnage dried for raisins was 42 per cent larger than for that year and only slightly below the record production in 1923. In addition, over 10,000 carloads, mostly

table varieties, remained unharvested because of unsatisfactory market conditions.

During 1927 practically no new plantings were made in California and some vineyards are being destroyed this winter. The acreage of bearing vines probably will be the same in 1928 as in 1927. Some new plantings are likely to be made, regardless of market conditions. On the other hand, rather concerted efforts are being made to eliminate those vineyards which show little chance of profit. Any grower who may be contemplating the planting of new vineyards should not overlook the fact that future crops could be 6 per cent smaller than that of 1927 without changing the quantity entering market channels, as approximately that percentage of the 1927 crop remained unharvested. Further, if growing conditions are as good in 1928 as they have been in 5 of the past 20 years, production can easily be increased 10 per cent. There also is the likelihood of larger production in Eastern and Middle Western States in 1928 than in 1927.

From a marketing viewpoint, it is likely that the new, relatively high level of consumption will be maintained and probably slightly increased. Further, special efforts are being made by interested factors to improve production and marketing methods. However, any aid which may be secured as a result of such efforts or through increased consumption is not likely to be sufficient to overcome marketing difficulties at an early date, and an immediate appreciable reduction of bearing acreage seems the best method whereby this can be accomplished.

In the Eastern and Middle Western States very little new planting was reported during 1927. Crops generally were light, due to unfavorable weather conditions. This was practically true in the Ozark region, where bearing acreage has increased more rapidly than in other sections of this area in recent years. In the Ozark region the light crop of 1927, following a heavy one in 1926 which sold at low prices, has resulted in discouragement, and it seems probable that returns received for the 1928 crop will have a large influence in determining whether the industry in that particular section is to continue to expand or whether it will shrink rather rapidly.

The 1927 crop in eastern and mid-western areas was 17 per cent smaller than the average of the previous five years. It is likely, therefore, that production in these areas during the next few years will be greater than in 1927 and that strong competition from California will continue. These conditions, with their probable effect upon price, must be carefully weighed by any grower who contemplates the planting of new vineyards.

STRAWBERRIES

The immediate market outlook for strawberries is slightly less favorable than that of a year ago. The chief element of weakness in the situation is the unusually large acreage in some commercial sections. With average yields, the crop this year will be one of the largest on record. If growers reduce acreage in response to low prices, as they have in the past, the outlook for 1928 and 1930 will be more favorable.

The situation continues favorable in the five early States—Florida, Alabama, Mississippi, Louisiana, and Texas. The gradual increase in recent years to 31,000 acres in 1927 and to an indicated acreage of 33,450 in 1928 does not seem excessive, in view of the small degree of competition during the early berry season. However, heavy production in Louisiana tends to slow down the market for berries from the second-early States, which ship largely during May. Shipments from Louisiana usually are heaviest during April and May.

The outlook is fair in the six second-early States—southern California, Arkansas, Tennessee, South Carolina, North Carolina, and Virginia. The indicated acreage of 54,200 in 1928, although larger than in 1925, 1926, or 1927, does not seem excessive, unless an unusual season causes abnormal competition from Louisiana. The lower prices in some States in 1927 may be explained partly by the unusually large yield per acre.

The market outlook in the intermediate States is decidedly unfavorable. This group includes Maryland, Delaware, New Jersey, Kentucky, Illinois, Indiana, Iowa, Missouri, and Kansas. California belongs in this group, but the situation there is favorable. Plantings in this general group have been gaining steadily, and last year 69,000 acres were harvested. Prospects are for 72,000 acres in 1928. The favorable prices in some of these States last season may be explained in part by the reduced yield per acre, due to flood damage and to the spring freeze in the Ozark region. Notwithstanding the lower yields per

acre in certain of these States, their combined production in 1927 was the highest on record. If yields in 1928 are average, production will exceed that of last year. Reduced plantings in these States seem advisable.

The situation is good in five of the late States (New York, Pennsylvania, Ohio, Michigan, and Wisconsin), which grow berries chiefly for local markets. The indicated acreage of 19,600 for 1928 does not appear to be excessive. A considerable portion of the berry crop in Washington, Oregon, and Utah is canned or packed in barrels for manufacturing purposes and does not compete in the open market with other fruits. The indicated 1928 acreage in these western States is greater than in 1927, when the crop was marketed at considerably lower prices than those of 1926. On the other hand, the demand, especially for the packed product, appears to be increasing.

CANTALOUPE

There is need for a sharp revision downward in the acreage planted to cantaloupes in the early areas, which means principally in the Imperial Valley of California, if last year's disastrously low prices are to be avoided. Prices received by producers in the intermediate States indicate the advisability of a continuance of their acreage at about the same level at which it has been held during the past three years. In the late States a slight decrease in acreage seems advisable.

In 1927, acreage in the Imperial Valley increased about 13 per cent and production increased 20 per cent over 1926, with a resultant decrease in the total value of the crop of approximately a million dollars. The fact that a crop valued at \$10,269,000 was produced on 27,560 acres planted in the Imperial Valley in 1925, compared with last year's \$5,560,000 crop produced on 39,760 acres, should be sufficient argument for reduction. Corresponding differences existed between the 1925 and 1927 acreages and farm values in the other early areas (Florida, Georgia, and Texas, lower valley) indicate the advisability of uniform action in this respect. Complaints regarding quality of last year's crop also point to the necessity of better growing and grading methods and to more care in picking at proper maturity.

Total acreage and production in the intermediate shipping States (Arizona, Arkansas, California other than Imperial Valley, Delaware, Illinois, Indiana, Maryland, Nevada, North Carolina, Oklahoma, South Carolina, and other Texas) have not changed greatly during the last three years and no general change seems desirable, although the relation between production and price varies considerably between the States in this group. Where prices have been most favorable, acreage is likely to be increased somewhat, and, conversely, where prices have been less favorable, decreases are probable. The real danger is that the generally more favorable returns in the intermediate group last year—acreage and production considered—will lead to more increases than decreases in this group. The unusually light crop of all tree fruits, especially peaches, had a very favorable effect upon cantaloupe marketing conditions in 1927. Average returns for the last three years, therefore, rather than the more favorable prices in 1927, should be used as a basis for consideration in planting in 1928. These indicate that a maintenance of present acreage in this group of States is likely to produce best results.

In the late States (Colorado, Iowa, Kansas, Michigan, Nevada, New Jersey, New Mexico, Tennessee, and Washington) increased production brought lower farm prices, without exception. In a few States, notably in Colorado, price reductions occurred even with decreased tonnage, but, for the most part, decreased production brought increased returns. As acreage did not change greatly in the various States, the principal price increases can be traced directly to lower-than-average yields. Under these conditions no general increase in acreage in this group of States seems justified, and a comparison of prices received during the last four years would indicate the advisability of a decrease. The highest total farm value in this group of States in recent years occurred in 1924, when the cantaloupe crop, which was grown upon an acreage about 12 per cent smaller than that planted in 1927, was valued at \$4,022,000.

WATERMELONS

Prices received for watermelons during the last few years indicate that the acreage planted last year will, with average growing conditions, produce a crop about as large as can be expected to sell at prices that are not discouragingly low. Any appreciable increase in production in 1928 is likely to result in low

prices. In 1927 the generally light crop of all tree fruits, with which the watermelon competes to a greater or less extent, affected prices favorably.

In the early-producing States the 1927 acreage was practically the same as in 1926. However, a 10 per cent lower production, due largely to less-than-average yields in the heavy-producing States of Florida and Georgia, together with a small crop of tree fruits, resulted in higher prices. A slight decrease in acreage seems to be needed, if average yields are assumed, to secure prices comparable to those received in 1927. Any increase above, or even a maintenance of, the 1927 acreage is likely to result in a return to or toward the relatively low prices of 1926.

The reason for an increase in the 1927 farm price in the late States, over 1926, is found in a 35 per cent reduction in acreage and a 43 per cent reduction in total crop. Increased prices in 1927 resulting from this reduction are likely to stimulate too heavy planting. Over half of this reduction occurred in Missouri, largely because of damage by floods, therefore planting plans should be based not alone upon last year's prices but upon a study of prices and conditions during the last three or four years. These show that the relation between production and price in this group of States is rather delicately balanced. In 1927, with one minor exception, the farm price increased in every State where production was reduced, as well as in a number of the smaller-producing States, where there was a slight increase in production. Only slight increases, if any, appear to be justified in these late-producing States.

PEANUTS

Peanut growers in the Virginia-North Carolina section should not allow present satisfactory prices to cause them to overplant Virginia-type nuts, as these prices were due chiefly to disappointing yields, to lack of carry-over last fall, and to the small proportion of large kernels in the pods. A maintenance this year of the 1927 acreage of Spanish and Runner types of peanuts in the South can be expected to result in prices reasonably satisfactory to the grower, but much increase in acreage of peanuts for market is likely to mean relatively low prices. Consumption is increasing, but the 1927 acreage in the Virginia-North Carolina area was much the largest in 10 years, and the acreage elsewhere was well above the average.

In Virginia and North Carolina prices of Jumbo farmers' grade peanuts advanced 30 per cent in early December, in the face of increasing receipts and at a time when prices usually sag. This unprecedented situation was due to a combination of circumstances. There was a complete lack of carry-over at the beginning of the season, the crop came on late, imports had been extremely light for many months, the crop was shelling out hardly half as many of the extra-large size as the year before, and there was a general feeling on the part of cleaners and warehousemen that total production in the two States was much less than early beliefs indicated. Although the 1927 acreage in the two States was about 15 per cent above that of 1926, the yield proved disappointing. A special investigation at the middle of January shows a crop for the two States of only about 274,000,000 pounds, compared with the December estimate of 333,000,000 pounds. A yield equal to the average of the past five years from the 1927 acreage would have given a crop of 340,000,000 pounds. Although consumption is steadily increasing, a repetition in 1928 of last year's large acreage of Virginia-type nuts, with average yields, would probably mean lower prices to the grower, and further increase in acreage might cause selling prices to react toward the low levels of a year ago.

Imports of large-podded nuts from China have been equal to about 20 per cent of the domestic crop of Virginia-type nuts during each of the last two years and to a much larger proportion in previous years. The 1927 crop in China is said to be below normal in volume, but the proportion of large-sized kernels in the crop is reported greater than usual and the moisture content much lower than that of the 1926 crop. Unless the disorders in China seriously involve the important producing territory in the Shantung Peninsula and keep the peanuts away from the ports of export, prevailing high prices will tend to bring in fairly heavy imports during the coming six months and will provide serious competition to domestic Virginia-type peanuts later in the season. However, it should be pointed out that present stocks of domestic Virginia-type peanuts of the large sizes are said to be insufficient to satisfy the normal demand in the United States until new crop peanuts come on the market next November.

The prices of the small stocks of Spanish and Runner type peanuts remaining unsold are now much above those prevailing earlier in the season. Following two years of very short crops, there was practically no carry-over at the

beginning of the 1927 season, but the expectation of a large crop from the increased acreage caused opening prices to be low, and the bulk of the crop moved out of growers' hands at relatively low prices.

Demand was accelerated by the lower prices and shipments of shelled Spanish and Runner peanuts to date this season have been over twice those of last season to the same date. It is expected that little of the 1927 crop will be carried over. The 1927 acreage planted to these varieties was materially greater than the five-year average, and the yield was one of the highest on record. Although the crop is the largest since 1921, it came on an empty market and came much earlier than usual, so that the consuming year will be lengthened.

In making their plans for the coming season, growers of Spanish and Runner type peanuts can reasonably assume that the yield per acre in 1928 will not be as great as during 1927, when growing conditions were highly favorable. If yields are only average in 1928, the 1927 acreage can be maintained with a fair assurance of profitable prices. No increase in acreage of peanuts for market is recommended, as with average yields an acreage equal to that of 1927 should furnish sufficient supplies for domestic needs. The acreage intended for consumption by livestock will probably be considerably increased in view of the reported increase of from 20 to 30 per cent in number of sows to be bred for spring farrowing in the areas that grow peanuts for feed.

CLOVER AND ALFALFA SEED

The 1927 crop of red clover seed was the largest since 1922, but followed four consecutive small crops, which in 1926 culminated in the smallest crop ever recorded, with the lowest available supply in 25 years. In the spring of 1927 consumption was curtailed because of high prices which were next to the record peaks of 1919 and 1920. The production of red clover seed should be maintained because of the lack of supplies from previous years; the preference of farmers for domestic seed; the expected increase in consumption this year; and as protection against a recurrence of a shortage like that of a year ago.

The situation for alsike clover seed is not so favorable for the producer as is the situation for red clover seed, in view of ample domestic supplies, lack of a good demand in Europe, and a larger Canadian crop.

Sweet clover and alfalfa have replaced red clover and alsike clover to some extent, where soil and climatic conditions were favorable, but may not be used so extensively with the return of somewhat lower red and alsike clover seed prices. The production of alfalfa and sweet clover seed for the past few years has been more than enough to satisfy this increased consumption. The present demand is greatest for alfalfa seed that is adaptable for sowing in the Central and Northern States. Owing to shortage of the alfalfa seed crop in the Northwest (and Canada), production there may well be increased. Present wholesale prices are about equal to the average for the last five years. There is a large supply of sweet clover seed, and wholesale prices are 35 per cent lower than last year, and are about two-thirds the average price for the last five years.

The unusually large red clover seed crop in 1927 resulted from a greatly increased acreage, as the yield per acre was only a little larger than that of the preceding year. Available supplies in Europe are slightly smaller than last year, with demand there greater, owing to short seed crops in parts of France, England, and Italy. Exports to the United States are expected to be considerably smaller because of the larger American crop and the preference of American farmers for domestic seed.

Prices paid to producers for the 1927 crop have averaged only 13 per cent below 1926. Wholesale prices of red clover are 10 per cent lower than last year, but 10 per cent more than the five-year average, indicating the probability of increased consumption this year. Imports for the fiscal year ending June 30, 1927, amounting to 10,816,000 pounds, were slightly more than half those of 1926 and slightly below the average annual imports for the past 17 years of 11,407,400 pounds. Imports from July to January 15, amounting to 326,600 pounds, were smaller than usual for that period. The 1927 crop of red clover seed, plus the quantity already imported, plus liberal estimates of that still to be imported, and plus carry-over of old seed, would total approximately only 10 per cent to 15 per cent more than the average annual consumption during the past 10 years.

Alsike clover seed production in the United States has been increasing during the last four years, culminating in 1927 in the largest crop since 1922. Owing to a decrease in production in Canada in 1926, and a short world supply, prices advanced in the spring of 1927 to the highest point since 1920. Prices to growers

for the 1927 crop have declined in view of the larger production in this country and in Canada. Although prevailing wholesale prices of alsike clover seed are lower than the high prices of last year, they are still nearly 20 per cent above the five-year average for corresponding dates. Spring sales were less than those of the year before, but the carry-over is regarded as smaller than usual. Imports for July 1 to December 31, 1927, amounting to 2,795,700 pounds, were three times those of the same period a year ago but considerably below the average for the last five years for that period. It is estimated that available supplies from the domestic crop, plus the quantity already imported, are more than enough to satisfy the average annual requirements of 24,000,000 pounds.

Seedings of sweet clover have increased continuously for years, but production of seed has increased at a faster rate. Growers received for the 1927 crop the lowest prices in five years, and stocks have become burdensome. A reduction in sweet clover seed production is warranted.

The 1927 crop of alfalfa seed was about 15 per cent smaller than the 1926 crop, which was next to the largest on record. The diminished production this year was due, in the main, to unfavorable weather conditions in most Northern and Central States. The decrease in production of northern-grown seed was much larger than the decrease for the entire United States. Imports during the past year were about as usual, but have fallen since July 1 to about one-tenth the average for the last five years, which reflects the smaller available supply in Canada. Carry-over of old seed is probably larger than normal, but is less than that of a year ago.

Although smaller than last year, supplies of alfalfa seed are ample to take care of consumption. Wholesale prices now show little change from corresponding dates during the last five years. Production of seed should be maintained in the northern and central producing districts as insurance against losses in seed production similar to those experienced in a number of States this year, and because prices in these districts are expected to remain at a level that will make alfalfa seed production profitable unless it exceeds materially that of 1927.

TOBACCO

In general, the outlook for the tobacco growers is better than it has been for several years. The reduced acreage and low yields of 1927 eliminated many of the weak spots to which attention was called in the Outlook Report a year ago, and increases in the acreage of some types are justified.

A year ago the Burley market was in a dangerously topheavy condition because of excessive stocks, and low prices resulted; but stocks have been materially reduced, and will be much further reduced before another crop is ready for sale. One Sucker and the four dark fired types were in a precarious market position a year ago because of large stocks and slackening demand. Stocks of these types have been reduced somewhat, largely because of the short crop of 1927, and further reduction in stocks seems certain by October, 1928. The Green River type is selling at higher prices than for two years past, because of its improved market position, and further improvement in the outlook may be expected. Foreign demand for Maryland tobacco improved in 1927, although domestic stocks are increasing.

The market position of cigar types has been radically improved because consumption has exceeded production. Stocks of old leaf suitable for cigar manufacturing purposes have been reduced to a point where shortages may occur before another crop becomes available, and for the first time in several years the outlook is such as to justify an increase in the production in the important types of cigar leaf.

Flue cured is the only important class of tobacco that is in a less favorable position than it was a year ago. It has found ready and satisfactory sale notwithstanding the enormous production of 1927, but danger signals are appearing, and further expansion of production now will not be without risk.

Foreign demand for most of the important types improved in 1927 as compared with the previous year. Shipments of flue-cured tobacco (the principal cigarette types) were considerably larger and at sustained prices. Great Britain continued to take increased quantities, but exports of these types to China fell off materially. Exports of cigarettes showed a marked decline because of reduced takings by China. Foreign production of types similar to flue cured is increasing but has not become important. Although exports of Burley are not large, foreign markets absorbed three times as much Burley in 1927 as in 1926, but at lower prices. The return of Spain as a market for

dark fired Kentucky and Tennessee tobacco maintained shipments in 1927 at about the same level as in former years but at much reduced prices. Exports of Kentucky and Tennessee types to other important markets decreased.

CIGARETTE TYPES

Flue cured.—The outlook for flue-cured tobacco is less favorable than a year ago, notwithstanding the continued upward trend in the consumption of cigarettes at home and abroad. This upward trend of consumption is an element of strength and soundness in the long-time outlook for this class of tobacco, but in the outlook for the coming season there are elements of weakness.

The crop of 1926 was closely in line with manufacturing and export requirement and brought to the growers an average of 25.6 cents per pound. Stimulated by this price, coincident with which the price received for cotton was very low, production was increased approximately 22 per cent, a part of the increase being due to unusually high yields per acre. The total production is estimated at 692,013,000 pounds, by far the largest crop of flue-cured tobacco on record. The prices per pound paid for the 1927 crop, which are almost equal to those for the smaller 1926 crop, may be explained in part by unusual conditions. First, several new companies have entered the cigarette manufacturing field and have found it necessary to purchase in excess of normal needs in order to establish adequate initial stocks. Second, the production of Burley in 1927 was about 30 per cent less than that of 1926, and the shortage of cigarette tobacco from this source increased the demand for flue cured. The Burley situation now is such as to indicate a larger crop in 1928, and flue-cured tobacco may, therefore, expect increased competition. It is highly probable that, even allowing for increased consumption during the ensuing year, the stocks on July 1, 1928, will be larger than those of recent years.

With respect to foreign competition, it may be noted that the production of tobacco similar to flue cured is increasing in British African colonies, although the effect on the British demand for American tobacco is not as yet important.

Summarizing present conditions, the indications are that stocks of leaf in the hands of dealers and manufacturers on July 1, 1928, will be unusually large, that competition among buyers for the next crop will be less active, and that any increase in acreage in the flue-cured district this year will be at the risk of lower prices.

Burley.—The outlook for Burley has improved greatly as a result of the sharp cut in acreage in 1927, the effect of which was accentuated by unusually low yields per acre. Because of this, and the increase in consumption, the stocks of old leaf have been materially reduced. By October 1, 1928, a further reduction in stocks is expected. Although conditions in the trade justify a moderate increase in acreage for 1928, growers are warned against excessive plantings. There is a prospect of an unusually large carry-over of flue-cured tobacco. If, in addition to this, Burley is increased excessively, the market for cigarette tobacco will be oversupplied and prices will be correspondingly depressed.

In view of the fact that demand is increasing for cigarette grades and decreasing for the darker-colored and heavier-bodied tobacco used for chewing and pipe smoking, growers should direct their efforts toward the production of thin-bodied tobacco of light color.

Maryland tobacco.—The position of Maryland tobacco continues good. Export demand has improved during the past year. Stocks of old leaf have increased during recent years, but in view of the increasing rate of consumption, the situation may be considered satisfactory, and production could be expanded somewhat, with safety. The 1926 Outlook Report pointed to the need for greater care in packing Maryland tobacco. Recent reports from foreign markets acknowledge the improvement that has taken place, which has no doubt been a factor in the increasing exports. Complaints are still heard, however, that many hogsheads contain mixed grades and quantities of green tobacco and this fact has had an adverse effect on prices.

MANUFACTURING TYPES

Virginia fire cured.—The situation of Virginia fire cured is not as serious as it was a year ago, and the outlook is for further improvement if production is not increased. Exports have increased somewhat, but stocks are still too high. The price outlook is good for upper grades. Best demand is for grades of light color and good body. Medium and low grades are in less favorable position.

Kentucky and Tennessee fire cured.—Some improvement has occurred in the market position of the two fire-cured types produced in Kentucky and Tennessee,

namely, United States types 22 and 23. Prices, especially for the better grades, have made a substantial recovery. The outlook is that wrapper and good leaf grades will continue to bring good prices; but for the common leaf and lugs that make up the bulk of production, the outlook is poor.

The production of these two closely related types was 84,193,000 pounds in 1927, as compared with 129,225,000 in 1926. Because of increasing competition of foreign-grown tobacco on markets abroad and an increasing preference for lighter types of tobacco, the trend of consumption has been downward. Present prices may be explained partly by the better quality of the 1927 crop and partly by the unusually short crop. There is nothing in view at the present time to indicate that a change in the downward trend of consumption has occurred. Exports to December 1 were about the same as for the first 11 months in 1926, but at such reduced prices as to indicate a weak foreign market. Export prospects are not bright for the higher priced 1927 crop, with European production of competing types showing a slight increase. Stocks are still large. Some reduction has been made, but further reduction is essential to permanent improvement in the general situation. A return to the higher acreage basis of 1926 would jeopardize the gain in position that has been made.

Henderson stemming.—No change in the acreage of Henderson stemming tobacco appears desirable at this time. Consumption, although declining, is in excess of production, and this should have the effect of reducing the large stocks now on hand. A crop of the same size as that of 1927 should sell at more favorable prices than are now being paid.

One sucker.—The one-sucker situation shows marked improvement largely because production in 1927 was only one-half that of the preceding year, and because the low prices paid for the 1926 crop stimulated consumption. The production in 1927 amounted to less than 40 per cent of the quantity consumed during the year ending October 1, and if consumption continues at a normal rate, stocks will be considerably reduced by October 1, 1928. The outlook is for remunerative prices provided no excessive increase in acreage occurs.

Green River.—The outlook for Green River tobacco in 1928 is for a somewhat higher price for a crop of about the same proportions as that produced in 1927. The acreage and production of this type have been reduced during the last two years, but consumption also has been on a declining scale. Stocks have been reduced slightly and will probably be reduced further by October 1, 1928.

Virginia sun cured.—If present prices for Virginia sun-cured tobacco are to be maintained, the 1928 acreage should be no larger than that of last year. Virginia sun cured is used chiefly for chewing, and since the chewing habit is decreasing, the trend of consumption for this type has been downward for the last 12 years. Stocks increased slightly during the past year. Production in 1927 was lower than in 1926 and prices somewhat better, but production is still slightly in excess of consumption, partly because of the unusually large yields in both 1926 and 1927.

CIGAR TYPES

The outlook for cigar leaf tobacco is greatly improved. During the past year consumption has exceeded production in practically all types. The stocks on October 1, 1928, will be the lowest in many years. Obviously a moderate increase in production is warranted. It has been pointed out before, and should be reemphasized, that the question of quality is of paramount importance, and every effort should be made by the growers to increase the proportion of tobacco that is serviceable in the manufacture of cigars.

Cigar-filler types.—In regard to cigar-filler types, in Pennsylvania production remained practically the same in 1927 as in 1926. In both years production was considerably less than consumption, thus reducing stocks and resulting in a material improvement in prices.

In the Miami Valley, because of the very poor returns to growers during recent years, acreage was cut sharply in 1927. The shortage of production and the improved quality of the tobacco have made the crop a reasonably profitable one.

Consumption of Pennsylvania and Miami Valley tobacco in the year ending October 1, 1927, amounted to nearly 103,000,000 pounds, whereas production amounted to 60,827,000 pounds. With the reduction in stocks of these types, production could be increased without exceeding manufacturing requirements.

The Georgia and Florida sun-grown tobacco enjoys a steady market at reasonable prices. There is good reason to believe that a gradual expansion in this type could be successfully accomplished.

Cigar-binder types.—The outlook is for a ready sale for serviceable grades of binder tobacco. Production of these types declined 5,000,000 pounds from 1926 to 1927, because of unusually low yields. Declines were registered in the Broadleaf district of the Connecticut Valley and in the Habana-seed districts of Pennsylvania and New York. Production in 1927 was below consumption. Present prices, however, indicate that the 1927 crop is running rather heavily to stemming tobacco.

The market outlook for Wisconsin tobacco for the coming year is good, and a moderately increased quantity of good leaf will probably find ready sale. Tobacco production in Wisconsin has been less than consumption during the last three years, as a result of which the stocks that have burdened the market in the past have been greatly reduced. The crop of 1927 was characterized by low yields and good quality, and the growers are receiving materially better prices this season than have been paid in recent years.

Cigar-wrapper types.—Wrapper types, grown under shade in the Connecticut Valley, in Georgia, and in Florida, have increased in production and prices. No burdensome stocks of these types have been reported and a gradual expansion of the market for shade tobacco is to be expected.

SUGAR

Present prospects point to a continuation of large world sugar production, with sugar prices at approximately the present level through another year. Wherever present prices are profitable there is justification for the continuance of present acreages in the United States or even for increasing them in certain sections where the prospect for larger per-acre yields of good quality is favorable. This is particularly true in the Louisiana sugar-cane section where the planting of the newly imported disease-tolerating varieties has resulted in great increases in tons per acre.

Should Cuba produce in the present season 4,500,000 short tons, which would be about 500,000 tons less than last year, the world sugar crop for 1927-28 would be about 5 per cent above that of last year. The carry-over and stocks in 14 leading sugar countries at the beginning of the present season were slightly above those at the same time last year. It does not appear likely that consumption will increase sufficiently to compensate for the larger supply this year. The consumption of sugar last year apparently failed to continue the rate of increase experienced in previous post-war years. The trend of sugar prices during 1927 was downward in spite of the reduced production of 1926-27. Prices during the present year, and stocks at end of year, however, will be influenced to a considerable extent by the size of the Cuban crop and by the arrangements made by Cuba for the disposition of its sugar.

The Cuban crop has been officially limited to 4,500,000 short tons (4,000,000 long tons), a reduction of about 500,000 short tons from last year's crop. On this basis the world sugar crop for 1927-28 would total about 27,600,000 short tons, compared with 26,326,000 tons in 1926-27. This increase, in the face of the reduction in Cuba, is largely accounted for by an increase of about 1,300,000 short tons in beet sugar production and an increase of about 400,000 short tons in the production in Java. The European beet sugar crop, which amounted to about 8,500,000 short tons, was the largest since the World War and was the third largest on record. The increased production in Russia and Czechoslovakia was particularly noteworthy.

The stocks of old-crop sugar carried over into the present season in the leading producing countries were larger than those carried over last year. The principal increases in carry-over were in Cuba and Germany. The largest decrease occurred in the United Kingdom. Stocks of sugar at ports of the United States in September, 1927, were slightly lower than at the same time in 1926.

European beet sugar acreage in 1927 reached a figure considerably higher than the pre-war average. Practically all countries, except France, had as large acreages planted to sugar beets as before the war, and in several cases the acreage was larger. There has been an important increase in beet sugar acreage in England, where the industry is heavily subsidized. The tendency in Europe since the war has been in the direction of a steadily increasing sugar beet acreage. It remains to be seen how much the low sugar prices and international agreements may affect the planting of beets this spring. The 1927 figures indicate that cane sugar producing countries, other than Cuba, are continuing to expand production.

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THE AGRICULTURAL OUTLOOK FOR 1929

Prepared by the Staff of the Bureau of Agricultural Economics

Assisted by Representatives of the Agricultural Colleges and Extension Services

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PURPOSE OF THE OUTLOOK REPORT

President Calvin Coolidge in his message to Congress on December 4, 1928, said:

"The Government should provide reliable information as a guide to private effort; and in this connection fundamental research on prospective supply and demand, as a guide to production and marketing, should be encouraged."

In this report an attempt has been made to bring together facts relating to prospective world-wide and nation-wide supply and demand conditions which are not readily available to farmers. These are the conditions which will probably be encountered when products of the coming season's operations are ready for market. These statements represent the national viewpoint and, in many instances, must be modified to meet local conditions. All available information regarding each farm product has been carefully studied and all suggestions are based on logical conclusions drawn from these facts.

All statements are designed to aid farmers to make sound plans for the farming year before the time for planting and breeding. They are also designed for the use of those workers in agricultural colleges, experiment stations and extension services who prepare outlook reports for their States or regions.

By using this outlook information farmers can avoid the losses which come from extreme variations in acreage, either in the form of increases or decreases. They can also plan their operations with a view to foreign competition and demand.

In the preparation of this, the seventh annual agricultural outlook report, the facilities and the entire staff of the Bureau of Agricultural Economics have been drawn upon. Assistance has been rendered by representatives of other bureaus of the department and by representatives of the agricultural colleges, experiment stations, or extension forces of 45 States who participated in the conference in Washington at the time the report was prepared.

State and regional outlook reports are being prepared by 30 or more States to interpret the facts of this Federal report in terms of the needs of the farmers of these respective States. Any farmer who receives a copy of this report is urged to secure a copy of the report distributed by his State extension service and consider its recommendations in connection with those made herein.

GENERAL AGRICULTURAL OUTLOOK

The agricultural outlook for 1929 is for some improvement in the Midwest and East, offset by conditions in other regions possibly not quite so good as in 1928. For agriculture as a whole, total gross income will probably be maintained near its present level of around \$12,000,000,000 to \$12,500,000,000.

The agricultural situation for the past five years has been marked by a rising volume of production and by a relative stability in prices paid by farmers for goods and services, such as labor, machinery, building materials, and taxes. The chief contributing factors to the upward trend of production have been dairy and poultry products, small grains, truck crops, and fruits and vegetables. In 1928 these trends continued, with prices to producers of the principal crops generally lower than in 1927, with an upward tendency in prices of most classes of livestock and livestock products, and with land values becoming more stabilized. Continued heavy production of feed crops in the face of reduced numbers of meat and work animals resulted in an unbalanced situation which threatens to prevent a continuation of the present level of return for livestock and livestock products.

Prices in recent years have fluctuated largely in response to production changes, and except for changes that may result from national policies designed to increase the price level of farm products, the prices of the principal products may be expected to show their usual response to changes in production and in domestic and foreign demand. If the gradual reduction in the number of farms continues, the average individual income will continue to gain somewhat by reason of the fairly stable total being divided among a steadily decreasing number.

EAST

For the Eastern States the outlook for 1929-30 is for somewhat better returns than in 1928-29. Fluid milk continues to profit from increasing demand, with no grain feed shortages anticipated; the potato situation is expected to show a recovery from the overexpanded national acreage of 1928. Demand for market hay, except alfalfa, continues poor. Fruit growers face continued heavy production, with the long-time outlook for northern peaches slightly improved. Producers of such specialized crops as cabbage, beans, and sweet corn, which in general did well last year, should guard against overexpansion.

MIDWEST

In the Midwestern States agricultural income is likely to show some improvement in 1929-30. Increased returns may be expected for hogs, wheat, and potatoes, whereas returns from the production of beef cattle, dairy products, and poultry are likely to continue near the 1928 basis, providing there are no material increases in production.

Meat animal production is in a strong position, and farmers are cautioned against too great an expansion of livestock production in the effort to realize higher returns on their surplus feeds than direct sale will yield. Unless corn acreage is reduced in 1929, lower corn prices may be expected. If oat acreage is increased to compensate for reduced plantings of fall wheat, oat prices are likely to be further weakened.

Low world prices for wheat may discourage producers all over the world and result in higher prices for the 1929 crop. Flax continues to be an attractive alternative for spring grain crops in suitable areas. Low prices for the 1928 potato crop will probably result in smaller acreage and improved prices.

With the possibility of increased production of clover and timothy hay in 1929 and with a shrinking demand for hay in the Southern States, the outlook for hay prices, with the exception of alfalfa, is not encouraging.

From a long-time standpoint, wheat producers may expect increased competition from other wheat-growing countries. Dairy products will continue to find expanding markets in cities and in sweet-cream shipments eastward. Present attractive cattle prices can not be maintained with any marked increase in production such as has followed similar periods of high cattle prices in the past. The increased use of mechanical power in the Middle West is reducing the demand for feed-grain crops, but is making possible the more efficient use of man power and the operation of larger units of land, and so tends to increase the gross income of the individual farmer. Farmers who expect to produce horses or mules when prices become more attractive should consider the replacement of older work animals by young mares at present prices.

FAR WEST

In the Western States, dry land and grazing sections can look forward to a somewhat improved wheat price situation in 1929, continued high beef prices, and lamb prices at a profitable level, even if not up to the peaks of recent years. Irrigated sections that depend on alfalfa hay and dairy products can anticipate continued good demand for those products. Sections depending on specialized fruit and vegetable products face continued keen competition, with overexpansion and low prices in many cases. Developments in these sections and in other competing areas, and the probabilities as to overproduction, should be most carefully considered before new commitments are made in specialized products.

In making long-time plans, western producers should consider the possible future down-turns in the beef and sheep price cycles, and continued heavy foreign competition in wheat, general stability in and growing demands for dairy products, and the tendency for demand for fruits and vegetables to increase somewhat faster than population.

SOUTHEAST

The outlook for producers throughout the southeast region warrants confidence in a production program in which improvements in quality and in distribution of products, are emphasized rather than material increases in total quantities produced. In the Appalachian region and rougher sections of the Piedmont, and in certain other localities where conditions are definitely favorable, development of the dairy enterprise offers good prospects for increased income. Increasing competition from other States in those special fruit and vegetable crops generally grown throughout the country, in which the advantage of the South is largely that of early season, suggests caution in expanding production of those commodities and varieties which do not have virtually clear fields in consuming centers. Available resources left over after providing for acreage not in excess of last year for the major staple products may well be applied to production of home-grown food and feed and to better pastures and legume hays.

DOMESTIC DEMAND

Judging from recent trends in general business activity, commodity prices, and the financial situation, observers feel that business activity is likely to be maintained near the present level through most of 1929, but there may be some recession in the latter part of 1929 or early part of 1930 similar to the recessions of 1924 and 1927. If the anticipated slackening does appear, the domestic demand for the farm products of 1929-30 will be reduced somewhat below that of the current season.

Following the moderate recession in business activity at the end of 1927, there was a gradual recovery during 1928, and the year ended with somewhat better than normal business conditions, which helped sustain the markets for butter, fluid milk, wool, mohair, lambs, beef, and other farm products which are sensitive to business conditions. This general recovery was due largely to improvements in the major industries, iron and steel, automobiles, textiles, and building, which were reflected in an improvement in employment and the buying power of urban consumers.

In previous years advances in business activity such as took place during 1928, have continued well into the following year. This suggests that the second half of 1929 will still find the domestic market at the active phase of the business cycle, with possibly a declining phase toward the end of the 1929-30 season. Several factors indicate this as a possibility. Commodity prices in general, which usually reflect the upward and downward movements of business activity, and prices of nonagricultural products particularly advanced steadily from the summer of 1927 to the end of 1928. The year ended with weaker agricultural prices after September, but with continued firmness in nonagricultural prices. Another factor suggesting that industrial activity is likely to continue good through the first half of 1929 is the continued rise in the price level of industrial stocks, which, after recessions in June and December, 1928, continued to make record peaks early in 1929. In the past such peaks have been reached during, or somewhat prior to, the peaks in general business activity.

The present credit situation has raised the question in the minds of many whether the peak in the present upward trend in business may not come in 1929 rather than in 1930. There has been a marked rise in interest rates during the past year. Such large advances in interest rates in the past have usually not occurred until the later stages of a period of prosperity, when they appear to have had a subsequent retarding effect, particularly on construction work. To date the only noticeable effect of interest rates higher during the last half of 1928 than during the first half, appears to be some decline in building activity during November and December. From the standpoint of general business activity this has so far been offset by present high rates of production in the automobile and metal industries.

Farmers should interpret the present business situation as holding in store one of two possibilities, either a continuation of the recent fairly active demand for farm products during most of 1929, but weaker during the first half of 1930; or that during the last half of 1929 and the first half of 1930 demand for farm products which are sensitive to business conditions may not be quite so good as during the 1928-29 season. On the whole, the latter appears somewhat the more probable of the two possibilities.

The fact that industrial conditions are now at a high level, with some increase in prices of building materials, wages, and interest rates, suggests that farmers who are planning new construction may profit by postponing it until peak prices are passed and costs are lower. Similarly, producers of dairy products, cotton, and flax, and the higher quality meats and vegetables should make their plans with due regard to the possible effect of decreased domestic demand on the markets for their products.

FOREIGN COMPETITION AND DEMAND

Foreign demand for our agricultural products of 1929 probably will be about the same as for the products of 1928. From present indications the purchasing power of foreign consumers generally should be as good as in the present season. The purchasing power of the consumers of a few countries, particularly Germany, Poland, and Denmark, may be better than during the present season. The purchasing power of consumers in the remainder of continental Europe, in the United Kingdom, and the Orient now seems likely to be at least as good during the present season. Competition of foreign producers in foreign markets and in the markets of the United States will probably be at least equal to that of the past season, being greater for some commodities and less for others. Somewhat less competition is to be expected in the production of pork, wheat, and rye, but more competition may be expected in corn, apples, tobacco, flaxseed, dairy products, and wool.

In general economic conditions in Europe are now better than they were a year ago. Completion of currency stabilization in all of the principal European markets for our products has rendered improbable a return to the extreme fluctuations in economic conditions that have characterized previous years. In Great Britain the industrial situation shows little or no improvement over that of a year ago and unemployment shows some increase. No significant change is anticipated, however, in the British purchasing power for agricultural products. Prospects for the sale of American products in Japan and China are better than last year.

It is difficult to forecast industrial activity and the purchasing power of foreign consumers generally, so far in advance as to cover the 1929-30

marketing season, but, barring a general industrial or financial depression, foreign market conditions will continue to improve.

Foreign competition in general continues to increase. In 1929, however, there is likely to be some slackening in competition in the production of wheat, rye, and pork. An upward trend in wheat acreage in foreign countries continues and, from the long time point of view, we may expect increasing competition from foreign wheat producers. The tendency toward expansion in wheat production is particularly noticeable in Canada and Argentina. It seems probable, however, that the low prices prevailing during the present season may cause some curtailment in wheat acreage for 1929-30. Wheat production in Russia has been reported as increasing during recent years, but there are no indications that significant quantities of Russian wheat will reach foreign markets in 1929-30. Foreign rye production is likely to be under that of 1928. Post-war rye acreage in foreign countries, excluding Russia, has been considerably below the pre-war average, and the large production of 1928 was a result of unusually favorable weather conditions rather than of increased acreage.

Our pork products are likely to meet less competition in European markets during the next 18 months than they have encountered since the middle of 1927. Indications point to a reduction in hog numbers in the principal European producing countries.

Producers of feed grains, on the other hand, may meet greater competition in 1929-30. It seems likely that the European production of feed grains will be larger in 1929 than in 1928. Two successive years of abnormally small European corn crops have kept prices of feed grains in Europe at fairly high levels. With little or no change in the production of barley or oats in prospect, average, or better than average, corn yields in Europe would result in a considerably larger European feed grain supply.

The trend of corn production in Argentina continues definitely upward.

Wool production in foreign countries has shown an upward trend during recent years. With favorable weather conditions, it seems probable that foreign wool production during the 1929-30 season will be no less than this season.

Cotton production in some of the newer cotton-growing areas in Africa and South America was stimulated by the high cotton prices during the period of severe boll-weevil damage in the United States, but the large 1926 United States crop and the subsequent low prices tended to check this expansion. In the older cotton-producing areas of India and China, there have been no recent developments indicating a significant increase in competition, although the expanding cotton textile industries in the Orient furnish an incentive for larger cotton production. The total Egyptian cotton acreage shows but slight trend but there has been an upward trend in the acreage of Egyptian "Uppers," the staple which competes most directly with American long-staple upland cotton and a downward trend in the acreage of Sakellarides which competes with American-Egyptian cotton.

There are indications that the competition of foreign flaxseed may be keener when the 1929 American crop is marketed than it was for the 1928 crop. The flaxseed acreage of Argentina, the most important single factor in the world market for flaxseed, continues to expand. The acreage sown for the current crop was the largest on record and, since favorable growing conditions have been reported, it is possible that the increase in Argentine production may more than offset the decreased production in the northern hemisphere.

Rice production in foreign countries is on a considerably higher level than before the war and rice prices in the Orient have tended downward in recent years. Although present low prices for rice may tend to discourage rice production in a few countries next year, there appears to be no reason to expect, over a long period, any material reduction in foreign countries.

High prices in the United States have stimulated imports of beef and cattle during the past two years, but those imports represented a very small fraction of our total beef consumption. An upward trend is noticeable in foreign beef cattle production, but figures for 1927 in the important exporting countries were below the average of the years 1921-1925. No serious competition in our domestic market from those sources is anticipated within the next few years.

The trend in dairy production in Europe and the Southern Hemisphere continues upward. Strong European markets favored the movement of a larger supply of dairy products in 1928 and resulted in some reduction in imports

into the United States. Indications are that foreign producers, encouraged by prices in 1928, will endeavor to maintain their output and that the pressure of foreign supplies on the American market may be somewhat greater in the winter of 1929-30 than it has been so far during the winter of 1928-29.

Substantially larger exports of both frozen and dried egg yolks were made from China to the United States in 1928 than in 1927, but exports of albumen decreased. Heavy shipments in the middle of 1928 in anticipation of an increase in the United States tariff accounted largely for the increased Chinese exports. Improved railway transportation is expected to increase the volume of eggs available in Chinese packing plants in 1929, but little increase in the importation of Chinese egg products into the United States is anticipated.

In the following review by countries of economic conditions and purchasing power, European markets, which take about three-fourths of our exports of agricultural products, are given in general in the order of their importance. China and Japan, which take about 10 per cent of our agricultural exports, are together more important as markets for our agricultural products than any single country except Great Britain or Germany.

In Great Britain there is no evidence of a material improvement in purchasing power of the consumers of our agricultural products during 1929. Registered unemployment on December 31 totaled 1,521,000 against about 1,200,000 a year earlier. Activity in the basic industries of coal, iron, and steel has made no progress over a year ago, and the future of those industries remains quite uncertain. Activity in the manufacture of chemicals, automobiles, rubber goods, electrical equipment, and other specialties is increasing, and these industries may continue to expand. A factor making for sustained purchasing power in spite of unfavorable industrial conditions has been a more general distribution of national income.

In the cotton textile industry, the competitive position of the American section shows no apparent improvement. This industry continues to be concerned with reorganization plans to reduce production costs. Expansion of the textile industry in the Orient has probably resulted in a permanent curtailment in markets for British cotton goods in that region. It does not appear likely that Great Britain will ever again be as large a market for American cotton as before the war.

American cigarette tobacco continues to occupy a predominant position in the British market. A tendency toward a smaller percentage of American tobacco in the total British import is apparent. In 1928, tobacco from the United States represented only about 76 per cent of the total against 90 per cent in 1922, while takings of Empire tobacco increased from 7 per cent in 1922 to about 23 per cent for 1928. The larger part of the Empire tobacco, however, appears to be dark types used otherwise than in the manufacture of cigarettes, and competes with our dark fire-cured and air-cured tobacco. British imports of American flue-cured tobacco are not likely to decrease. Efforts to stimulate the use of Empire-grown cigarette tobacco in Great Britain have not been very successful and some decrease in Empire production seems probable.

Pork products will probably be in a better competitive position than last year. The outlook for lard is at least as good as in 1928.

Reported short apple crops in New Zealand and Australia point to a good market for the American product in Great Britain during the last two or three months of the 1928-29 season and no reduction in demand is anticipated for the beginning of the 1929-30 season in September as against the opening of the current year. The British fruit market has a tendency to absorb increasing quantities of grapefruit and, this year, indications point to a total import larger than last year.

In Germany, the beginning of 1929 found industrial activity at a point considerably below that of the same time a year ago, but the opinion is wide-spread that a sound basis has been attained for future advanced activity. The decline has resulted in unemployment figures for December 31, 1928, standing at 1,830,000 against 1,400,000 a year ago. Fundamentally, however, the readjustment in industry is felt to be sound, and the textile industry is reported as anticipating a recovery in production, supported by a somewhat improved domestic demand.

The outlook for marketing pork products in Germany is somewhat better on account of the anticipated decline in the marketing of hogs in Germany and neighboring countries. The marketing of German hogs has been below 1927 since August, 1928, and will continue small into 1930. Hog prices have

exceeded last year's level for several months, and the supply situation indicates a maintenance of the higher price level for another season.

German imports of American apples to date have been considerably larger than last year and at advanced prices, but competition from larger European apple crops in 1929 is likely to reduce takings of American apples next season. German demand for American dried fruit, notably prunes, continues to expand.

There has been great improvement in the industrial activity in France and the present high rate may continue through another season. Much of the improvement is attributed to the favorable effects of currency stabilization. The progress made in 1928 over the preceding year has resulted in a virtual elimination of unemployment, with some industries reporting a shortage of skilled labor. The textile mill activity is reported to be at full capacity. Domestic demand for cotton goods appears to be stronger than last year, and exports may be increased.

Industrial progress in Italy gives reason to expect a higher rate of activity in 1929 than in the preceding year, but the rate of advance has not been as rapid as in France. But better sales and increasing activity are noted for many leading industries, including cotton textiles, and there appears to be some improvement over last year in domestic buying power. In textiles, the higher rate of production reached in 1928 is expected to improve. Spinning activity was reported at 95 per cent capacity in January, with a heavy increase over last year in unfilled orders. The industry expects some increase in its export business.

Exports of American cotton to Russia so far this season are somewhat larger than a year ago, but production in that country for 1928-29 is estimated to be about 22 per cent above 1927-28. Russian textile mills contemplate consuming more cotton this year than last, depending more upon domestic production. It is probable, therefore, that Russian demand for American cotton in 1929 will be below that of 1928. For the second successive year Russia appears to have no grain for export, which can not fail to influence adversely the general importing plan, including cotton.

The improved industrial conditions existing in most of the remaining countries of western and northern Europe as against last year justify the expectation of a 1929 demand for American agricultural products somewhat greater than that of last year. The Polish situation is reported as unusually favorable for increased industrial activity, with the output of cotton textiles indicating larger raw cotton requirements. In most Belgian industries good conditions prevail. Occupation in the glass and textile works is not entirely satisfactory, but the situation in textiles is improving and it seems probable that the improvement can be maintained. In the Netherlands employment is high and industrial production in several important lines shows an increasing tendency. In all of the Scandinavian countries there are good indications of an improved demand for most of the American agricultural products that usually seek those markets.

Our exports of agricultural products to the Orient continue to expand. Exports of cotton, tobacco and wheat to China and Japan this season have been well above those of 1927-28. Cessation of civil war in China has laid the foundation for a continued growth in this trade. In both Japan and China the demand for American cotton is stronger than in 1928 with cotton mills considerably more active than a year ago. The improved Chinese demand for cotton goods affects the Japanese textile industry as well as that of China. In China a considerable quantity of native cotton is available, but there appears to be a greater demand for higher count yarn which requires American cotton.

Exports of American flue-cured tobacco to China in 1928 exceeded all previous years. This suggests the possibility that stocks are being replenished to an extent that will reduce Chinese takings in 1929, but over a longer period there are good prospects of an increasing demand from China for our flue-cured tobacco.

There is evidence of increasing consumption of wheat in Japan and in some parts of China where rice has always been the major item in the diet. This shift is resulting in an increasing Oriental demand for wheat and wheat flour. Our Pacific coast wheat producers should be in a position to share in any increase in demand, but Canada will continue to offer strong competition for the Oriental wheat and flour markets. At present activity in wheat flour mills is high in both Japan and China and a strong demand for flour is reported.

AGRICULTURAL CREDIT

The credit outlook is less encouraging than 12 months ago. More strict scrutiny of farmers' applications for loans, increased rates, or both, may result from the high rates of interest prevailing in the central money markets, especially if the latter rates should continue well into the year. The generally less favorable credit situation will not affect farmers equally in all sections of the country. The effect of sectional differences in returns from farm operations exerts an important influence upon local supply of funds and upon liquidation of old loans, demand for new advances, and credit standing of borrowers.

Among the factors that have contributed to a rise of interest rates in the central markets are a decrease in the nation's supply of monetary gold, an extraordinary activity in the securities market with an increased demand for loans by brokers and their customers, and a moderately increased demand for commercial loans.

The monetary supply of gold in the United States declined $5\frac{1}{2}$ per cent in the past year. The discount rate of the 12 Federal Reserve Banks was $3\frac{1}{2}$ per cent at the beginning of the year, and is now 5 per cent in eight of these banks and $4\frac{1}{2}$ per cent in the other four, namely, Kansas City, Minneapolis, Dallas, and San Francisco. Rates on four to six months commercial paper advanced from about 4 to about $5\frac{1}{2}$ per cent. The yield rate on Treasury $4\frac{1}{2}$ per cent certificates (1947-52) advanced from 2.95 to 3.44 per cent. Call money on the New York market, quoted at about $3\frac{1}{2}$ per cent in January, 1928, reached 12 per cent in recent months, the more recent quotations being about 7 to 9 per cent.

The relatively low rates quoted a year ago by the Federal land banks, namely, 5 per cent for 10 of the banks and $5\frac{1}{4}$ per cent for the other 2, have not been altered. But the bonds, by means of which these banks provide the funds for their loans to farmers, recently have carried an interest rate of $4\frac{1}{4}$ per cent instead of the 4 per cent in the previous year. It is by no means certain, therefore, that the current rate on land-bank loans could be long maintained if the present situation in the money market should be prolonged. Some of the joint stock land banks already have raised the rates slightly on their loans.

A year ago the 12 Federal intermediate credit banks quoted a rate of $4\frac{1}{2}$ per cent on rediscounts as well as on direct loans to farmers' cooperatives. On January 1, 1929, the Springfield bank alone maintained this rate, while in the other 11 banks rediscount rates and rates on direct loans ranged from 5 to $5\frac{1}{2}$ per cent. The cost of credit from this source to individual farmers through the intermediary of banks or agricultural credit corporations is, as a rule, 2 to $2\frac{1}{2}$ per cent higher than the discount rate. The rates charged by commercial banks in principal cities on loans secured by warehouse receipts have risen during the year from $4\frac{1}{2}$ -6 to $5\frac{1}{2}$ -7 per cent, the range in each case varying to a large degree according to the commodity and to the credit rating of the warehouse receipts.

As usual, changes in interest rates on loans for agricultural purposes have lagged behind changes in rates for the various classes of loans in financial centers. Arrangements for agricultural production credit for 1928 were made in most cases before any material stiffening of interest rates had taken place. As a rule, farm mortgage rates have hitherto held close to the levels established in 1927.

Although the present credit outlook is less promising than a year ago, there are reasons to believe that the upward trend in cost of credit is temporary. The recent demand for credit on the securities market at the rates of interest that have prevailed in recent months is not likely to continue indefinitely. Moreover, the country as a whole is adding to its surplus, or loanable capital, at a relatively rapid rate; in the long run, this should effect a downward trend in interest rates.

It may also be expected that the improved economic position of farmers in a number of agricultural districts, resulting in a reduced need of credit for their 1929 production program, may in such districts more than offset the influence of the higher rates in the money markets. In districts less fortunate in 1928, the adverse change in the general credit situation will probably make itself felt in less liberal policies as to amount of credit extended rather than in the actual rate charged. The local bank rates on short-time production loans, in areas which must borrow from outside, have seldom been lowered in responses to easy money in the central markets, and are likely to show little if

any response to temporarily tighter credit in these markets. In any case, as in former years, bank credit is certain to be reasonable in cost compared with the cost represented by the difference between cash prices and time prices on farmers' credit purchases.

FARM LABOR, EQUIPMENT, AND FERTILIZER

Indications are that the available supply of labor for farm work will be somewhat smaller during the late spring and early summer and somewhat larger during the late fall of 1929 than it was during the corresponding periods of 1928. Farm wages will probably change little from those of 1928 during the first half of the year but may be somewhat lower during the last quarter.

In general, industrial labor is likely to be less fully employed during the fourth quarter of 1929 than during the same quarter of 1928. Because of the close relationship between the volume of industrial employment and the supply of farm labor, the available supply of farm labor probably will be larger during the last quarter of 1929 than it was during the last quarter of 1928.

Any increase in the farm labor supply will probably be near those industrial centers where there is a decline in industrial employment, and in the agricultural sections where the use of larger units of power and labor-saving machines is increasing or where there is a marked reduction in the production of any important crop.

Present indications are that, as during the last 3 years, there will be little change, if any, in the prices of farm machinery. Continuation of the heavy demand for the combined harvester-thresher, for other motorized farm machinery, and for tractor-drawn implements is indicated.

Increased building activity during 1928 was reflected in a moderately rising level of prices of building materials. No material change in prices of building materials to farmers is indicated for most of 1929 but prices may turn downward during the latter part of 1929 or during the first part of 1930.

Wholesale prices of mixed fertilizers and fertilizer materials were somewhat higher in November, 1928, than in November, 1927. Decreased use of fertilizer in leading fertilizer-buying States is indicated for 1929, according to reported sales of fertilizer tags. During the period August to December, 1928, tag sales were approximately 87 per cent as large as those of the corresponding period in 1927, and December sales were about 72 per cent of the preceding December sales.

COTTON

Since a provision of the appropriation act for the United States Department of Agriculture prohibits the making of any statement regarding the future prices of cotton or the trend of same, no report on the outlook for cotton has been prepared. A brief review of the cotton situation prevailing during the past few years, with a summary of the present situation, may aid cotton growers in deciding upon their 1929 production program.

In 1928, growers planted 48,700,000 acres of cotton, the largest acreage on record, and obtained a yield of 182.6 pounds per acre, the highest since 1914. Production that year was about 17,900,000 bales. The carry-over, according to the Commercial and Financial Chronicle, was nearly 5,600,000 bales, making a world supply of American cotton of about 23,500,000 bales. The Middling price, averaging 14.4 cents per pound in the 10 designated markets, and the reduced income to cotton growers are well remembered. Low prices, and the favorable economic conditions which stimulated demand, resulted in a world consumption of nearly 15,800,000 bales of American cotton, according to the International Federation of Cotton Spinners.

In 1927, growers planted only 41,900,000 acres and the yield fell to 154.5 pounds per acre. This reduced production to 12,800,000 running bales or 13,000,000 bales of 500 pounds gross weight. The carry-over, according to the Commercial and Financial Chronicle, amounted to 7,800,000 bales, making a supply of 20,600,000 bales of American cotton. Large stocks in foreign countries, together with increased prices, resulted in very low exports. Domestic consumption had reached a peak in the second half of the previous season, and although still high at the beginning of the season, declined steadily until July, 1928. Nevertheless, because of high rates of consumption in the early months, the total domestic consumption of American cotton for the year de-

clined only 345,000 bales. Consumption in Germany and some of the other central European countries declined in the second half of the season, but this was offset by increased consumption in France and Italy. World consumption of American cotton for the 1927-28 season, reported by the International Federation of cotton spinners, was 15,400,000 bales. The price of Middling spot cotton at the 10 designated markets averaged 19.7 cents per pound.

By August 1, 1928, the world carry-over of American cotton had been reduced to 5,100,000 running bales according to the Bureau of the Census. This was a reduction of 2,700,000 bales under the carry-over of the previous year and was below the average carry-over of 5,500,000 bales for the previous eight years.

The area planted to cotton in 1928 amounted to 46,900,000 acres; the yield was 151.8 pounds per acre, resulting in a production of approximately 14,400,000 bales of 500 pounds gross weight. The decrease in carry-over this season has more than offset the increase in production. The total composite supply of 19,500,000 bales is therefore 1,300,000 bales less than that for the previous season. Domestic consumption remained low during August and September, but during October, November, and December was approximately the same as that for corresponding months last year. Total domestic consumption of American cotton for the season to date remains about 240,000 bales below that for the similar period last year.

With decreased stocks abroad, and somewhat lower cotton prices, exports have been far in advance of those a year ago. Exports to the United Kingdom for the season to date are more than double those for corresponding months in 1927. The cotton textile industries of Germany and other central European countries show a recovery from the decline which took place in the second half of last season. Their recovery appears to be based on sound agricultural and business conditions, and stocks of finished goods have apparently been reduced. In France and Italy the condition of the cotton textile industries improved materially during the past season; at present they are operating at a high rate, and current business conditions in both countries are reported as satisfactory. The situation in the Orient is characterized by the increasing political stability of China, which is making it a better market for cotton goods, and a recent material improvement in the Japanese cotton textile industry.

From August 1 to December 31, 1928, the price of Middling spot cotton at the 10 designated markets averaged 18.5 cents per pound. There has been a firm demand for cotton of $\frac{1}{8}$ -inch to $1\frac{1}{2}$ -inch staple, which has been reflected in higher prices received by growers in localities that regularly produce cotton of these lengths.

From the production standpoint, the labor situation appears to be about the same in the Cotton Belt as it was a year ago, but credit is more restricted, or available only at higher rates. In the past the quantities of fertilizers purchased have been significantly affected by the price of fertilizers and the previous year's income from cotton. Fertilizers were used liberally in 1928. At present fertilizer prices are somewhat higher than they were a year ago. The income per acre of cotton in 1928, on the basis of prices prevailing to date, has been lower, especially in some of the southeastern cotton States where fertilizers are most necessary.

In 1928 there was considerable crop damage from boll weevil. Weevil emergence is influenced significantly by winter weather conditions and the extent of damage depends largely upon the weather during the spring and summer. During the past fall boll weevils were as numerous as, and even more widely distributed than, in the fall of 1927. So far this winter the weather in the Cotton Belt has been relatively mild. During the past six years the yield of cotton has averaged 157.3 pounds per acre. In 1923, weevil damage was severe and the yield per acre was 130.6 pounds. In 1926, weevil damage was slight and weather conditions during the fall were exceptionally favorable for maturing the crop. The yield that year was 182.6 pounds per acre. The yield of 151.8 pounds per acre obtained in 1928 was about 3 per cent below the average of the six years.

WHEAT

It is probable that the world supply and demand for wheat in the 1929-30 season will be somewhat more favorable for marketing the wheat crop of the United States than they were in the 1928-29 season. Although there probably will be a considerable increase in the carry-over in all surplus-producing coun-

tries, this is likely to be offset by a continued increase in consumption and by some curtailment in the world wheat production in 1929 as a reaction from the low prices prevailing in the 1928-29 season and possibly also by lower average yields per acre.

In view of the probability of another good crop of hard red winter wheat, spring-wheat farmers should hesitate to increase their acreage of hard red spring wheat, as the present acreage with average yields is sufficient to keep this class on an export basis. Prospects are favorable for somewhat higher relative returns from flax than from spring wheat, and farmers may find flax a profitable substitute for a part of their spring wheat this year in areas suitable for growing flax, if flax production is not unduly increased. Growers of soft red winter wheat are likely to continue in a more favorable position than growers of other classes. Unless the acreage of durum wheat is materially curtailed in the United States, or production in other countries is short, prices will probably continue relatively low during the 1929-30 season.

World demand for wheat appears to be increasing steadily. The growth of population naturally increases the demand for wheat. Further, there appears to be a definite tendency, both in Continental Europe and the Orient, to shift from the consumption of other breadstuffs to wheat.

The wheat production of 44 countries, which last year produced 96 per cent of the world's crop outside of Russia and China, is now estimated to be about 3,654,000,000 bushels, as compared with 3,428,000,000 bushels, officially estimated for 1927.

Some increase in the world carry-over of wheat at the beginning of the 1929-30 season is to be expected, although the low prices of wheat for the present season are undoubtedly causing considerable increase in consumption, particularly for feed, in this country and in Europe. The present season also began with some increase in carry-over. Taking this increase and the increased crop together, it appears that the world's supply of wheat for the 1928-29 season is about 5 per cent greater than for the 1927-28 season.

The world's crop is being absorbed at a good rate. Notwithstanding some increase in the European production, exports from surplus-producing countries have been large. It is estimated that world exports since July 1 have amounted to about 514,000,000 bushels, as compared with 433,000,000 bushels for the corresponding period last year.

Although current low prices may check temporarily world expansion of wheat acreage, American producers are faced with a long-time tendency to continue to expand wheat production in many countries. Low prices in 1923 reduced the wheat area of 44 countries from 220,000,000 acres in 1923 to 215,000,000 acres in 1924, followed by a gradual increase to 233,000,000 acres by 1928. Reductions in fall-sown areas in the United States, Canada, and Bulgaria are in line with what happened in 1924 in response to the low prices for the 1923 crop. Not much if any expansion of wheat area is to be expected this year in Europe, outside of Russia. Reports received to date indicate slight increases in Czechoslovakia and Prussia, which are offset by a reported decrease in Bulgaria. The wheat area of most European countries has recovered from the effects of the war and any expansion beyond present area is likely to be small even under favorable conditions.

Russia continues to be an uncertain factor. It is reported that the Russian wheat harvest of 1928 was greater than that of 1927, but a shortage in the rye crop and other conditions have prevented any exports, and it is reported that Russia is likely to import before the end of the present marketing season and this will be a factor in determining the quantity of the carry-over at the end of the year. Fall seedings in the Ukraine are reported to be only 92 per cent of what was planned. Russia will endeavor to make up for this in spring plantings. Whether the spring wheat area is expanded will depend to some extent upon weather conditions as well as upon the ability of the Government to carry through its program.

WINTER WHEAT

The area seeded to winter wheat in the United States in the fall of 1928 is estimated to be 43,228,000 acres. This represents a decrease in acreage of 8.6 per cent under seedings in the fall of 1927, but still over 3 per cent larger than the 5-year average acreage (1923-1927). The decrease was most pronounced in the eastern Corn Belt States where it was 20 per cent, and in the winter wheat sections of Minnesota, South Dakota, and Montana where it

was 40 per cent. In other sections the decreases were much lower, ranging from 4 per cent in the hard winter and Pacific Coast States to 6 per cent in the Appalachian States.

Because of unprecedented abandonment, particularly in the Ohio Valley, the production of soft red winter wheat in 1928 was the lowest in recent years. This low production is reflected in the market price premiums now prevailing for this class of wheat. With the rather marked decrease in fall seedings in 1928, prospects are good for a continuation of premiums on this class. Despite rather heavy abandonment, the production of hard red winter wheat in 1928 was close to 75,000,000 bushels larger than the previous year's production which was above the last 5-year average production. This large production has kept this class on an export basis and selling at the lowest prices since 1924. The 1928 production of white wheat was slightly below the large production in 1927. The indicated decrease of 4 per cent in the acreage seeded in the Pacific Coast States probably is not significant, as reduced seedings in the fall have usually been followed by increased seedings the next spring. The present acreage with average yields is sufficient to keep this class of wheat on an export basis.

Notwithstanding the lower acreage seeded to winter wheat this year it is still large enough, with average yields and abandonment, to produce a crop of around 570,000,000 bushels in 1929. This would be only slightly smaller than the production in 1928, and still some 15,000,000 to 20,000,000 bushels above the average for the preceding 5 years.

HARD RED SPRING WHEAT

Another large crop of hard red spring wheat was harvested in 1928. This, added to a large production in 1927, has kept this class definitely on an export basis and selling at the lowest prices since the 1923-24 crop year. In view of the probability of another large crop of hard winter wheat in 1929, spring wheat farmers should hesitate to increase their present acreage of hard spring wheat. They may find it advantageous to decrease it somewhat, particularly if the hard winter wheat crop comes through the winter in good condition. Should excessive abandonment occur again in the hard winter wheat States this year the situation will become more favorable for the spring wheat grower, but probably not to the extent of warranting further expansion in acreage as the present acreage with average yields is sufficient to keep the price of this class of wheat at the world level. The low prices and low quality of much of the 1928 Canadian crop may tend to check, temporarily at least, an expansion of the spring wheat area in western Canada, which will be to the advantage of spring wheat growers in the United States.

DURUM WHEAT

Durum wheat prices will probably continue relatively low, unless the acreage in the United States is materially curtailed or production in other competing countries reduced. However, in areas where materially higher yields of durum are secured it may be as profitable a crop as hard spring wheat.

Little is known yet about the prospects for the 1929 crops in Italy and North Africa. Conditions have been favorable for seeding the crop in Tunis and Algeria. As long as the United States produces a surplus of durum wheat, in the face of increasing Canadian competition, durum producers can hardly expect any material improvement in prices over those of the past two seasons unless the crops of North Africa and southern Italy are extremely short.

Durum production has been rapidly expanding in Canada as well as in the United States. Production in the United States in 1928 was estimated at 93,000,000 bushels, compared with 79,000,000 bushels in 1927. Canadian inspections to December 31, 1928, were about 22,000,000 bushels of durum compared with 12,000,000 bushels inspected to that date last year.

The domestic consumption of durum is increasing. Formerly large quantities of macaroni products were imported from Italy. Now domestic mills supply 99 per cent of the domestic requirements and are competing with the Italian products in foreign markets. Mill grindings of durum during the 1927-28 crop year totaled 14,600,000 bushels, or the largest quantity of any year for which statistics are available. A somewhat larger quantity, roughly estimated by the trade at 20,000,000 bushels, is used annually in the manufacture of mixed feeds.

Relatively low wheat prices this year, particularly for red durum, have stimulated increased consumption of this class as a substitute for other feedstuffs and for use in mixed feeds. In some instances the proportion of red durum in mixed feeds has been doubled. On the other hand, the scarcity of offerings of high-quality milling durum has resulted in unusually high premiums for this type over ordinary grades. At the low prices now prevailing, about 50,000,000 bushels of durum will be used in the United States for seed, feed, and food.

RYE

Domestic production of rye continued to decline in 1928. It was 41,766,000 bushels, compared with 58,164,000 in 1927, and an average of 63,831,000 for the previous five years. The area seeded for harvest in 1929 is estimated at 15.5 per cent less than that sown the previous year, or a total of 3,293,000 acres. North Dakota, the principal rye State, showed a reduction of 30 per cent. Even with fair to good yields, domestic production of rye in 1929 will not be large. As rye prices depend upon wheat prices, the reduced production of rye can not be expected to improve prices unless there is an improvement in wheat prices.

World rye production is decreasing. The area harvested in 1928 was less than the pre-war (1909-1913) average, and less than the area of 1925. The peak of world production, outside of Russia, was reached in 1925. The increase in production in 1928 over 1927 was due to higher yields on a reduced area, and the production is still considerably below that of 1925.

FLAX

Present indications are that flax will be a relatively more profitable crop in 1929 than other spring grains grown for market in the areas suitable for flax production. A 30 per cent increase in acreage would still probably leave our production well below domestic requirements, but the relatively high prices received for the 1928 short crop are not likely to be maintained if production is materially increased.

Nearly 45,000,000 bushels of flaxseed were used in the United States during the year ended September 30, 1928. This is about 14,000,000 bushels over the record production of 1924 when yields of slightly over 9 bushels were obtained on a record acreage of 3,649,000 acres.

Because of a shorter crop in the Northern Hemisphere and a somewhat smaller carry-over of seed the world supply of flaxseed for the current year, 1928-29, probably will not be quite so large as last year. Most of the reduction in the world crop occurred in the United States and Canada where the combined production was only about three-fourths of that of the previous year. There was a decrease of 6,500,000 bushels in the domestic crop alone which has resulted, with the aid of the tariff, in keeping Minneapolis prices of flaxseed at substantial premiums over prices at Winnipeg and at Buenos Aires. Just what the final outturn of the Argentine crop will be is not definitely known as no official estimate of the crop is as yet available. A record area of 7,297,000 acres was seeded and the prospects are favorable for another large crop, but it probably will not be large enough to offset the decrease in other parts of the world. Early estimates indicate an Indian crop of about the same size as last year.

Record quantities of linseed oil passed into consumption in the United States in 1928 but there are still large stocks on hand which may restrict crushings somewhat during the 1928-29 crop year. Consumption of oil during 1928 was nearly 5 per cent higher than for the corresponding period in 1927 and present relatively low prices favor continued heavy consumption. Strong demand for linseed meal and cake will probably continue to be a strengthening factor in flaxseed prices.

European demand will be an important factor in the world's flax markets again this spring. Present conditions are favorable for continued heavy importations of flaxseed into western European countries because of relatively low prices of flaxseed in Argentina and a strong demand for linseed meal and cake both in the United Kingdom and on the Continent as a result of limited feed supplies in important consuming areas. The short crops of flax in the United States and Canada will probably cause larger importations of Argentine flax into the United States.

Present relatively high prices of flaxseed in the United States compared with prices of other grains may influence farmers to expand their flax acreage

in 1929 as they did in 1924, following the favorable prices of 1923. This probably will be to their advantage, particularly in the case of farmers who have land on which good yields of flax can be reasonably expected, as with average yields flax promises to be a more profitable crop than wheat or other spring grains.

RICE

The outlook for rice is better than it was last year. Prospects are that the carry-over of rice both in the Southern States and in California will be lower at the beginning of the 1929-30 season than at the beginning of the 1928-29 season. An average yield on the same acreage as last season would produce smaller quantities, and with normal market conditions the price for the 1929 crop should be somewhat better than for the 1928 crop. The prospective improvement in the price of rice, however, is not sufficient to justify an expansion in acreage. Although the present low prices of rice in the world markets may discourage production next year in some foreign countries, apparently over a longer period American rice producers can expect no material decline in foreign competition.

The total quantity of rice from Louisiana, Arkansas, and Texas available for distribution during 1928-29 was less than in the preceding season. A slight reduction in acreage and somewhat lower average yields per acre resulted in a decrease of about 6.5 per cent in the 1928 production as compared with 1927. Larger exports of southern rice during 1927-28, notably to Cuba and to other Latin American markets, contributed to a reduction in the carry-over of rice into the present season. Exports during the first five months of this season have exceeded those of the same period last year with practically all of the leading markets taking more than last year. The low prices now prevailing put southern rice in a good competitive position in foreign markets, and the outlook is good for an increase over last year's relatively large exports. Some increase is indicated in 1928-29 exportable surplus of Burma, Indo-China, and Siam, the principal Asiatic rice exporters. The Chinese rice crop is reported to be poor, however, which may tend to reduce shipments to Europe and to Latin America where American rice is sold. The 1928 production of rice in Spain and Italy was the smallest in three years, which fact should prove favorable to the disposition of American rice in Great Britain and certain Latin-American markets. Shipments of rice to the protected market of Porto Rico have been on a considerably higher level than in 1927-28. These factors point to a still further reduction in the quantity of rice carried over into the 1929-30 season.

Prospects are for larger exports of California rice this season and a consequent reduction in the carry-over into 1929-30. The supply of California rice available for distribution in 1928-29 was somewhat larger than in 1927-28. The 1928 production was almost 10 per cent smaller than in 1927 but the very small exports of California rice to Japan during the 1927-28 season resulted in a considerable increase in the carry-over. Rice production in Japan and its territories in 1928 was about 7 per cent smaller than the record crop of 1927. Further, the general economic situation in Japan appears to be better than last year. Decrease in production of rice in Spain lessens the threat of competition from that source in British Columbia. The fact that the quality of the California crop is good this year should facilitate the marketing in foreign countries. Shipments of rice to Hawaii, the principal market for California rice, have been on a considerably higher level than last year.

OATS

The low farm price of oats again this season emphasizes the limited market for this grain and the desirability of restricting production for sale to localities where conditions are particularly favorable for good yields. Last year's acreage with average yields should not be expected to yield more profitable returns to farmers in the principal producing States than were obtained from the 1928 crop, particularly if barley production in these areas is maintained near the high levels of the past two years and the supply of corn is materially increased.

As pointed out last year, the decline in the horse population has materially reduced the yearly requirements of oats. Use of oats for dairy cattle and in mixed feeds has shown some tendency to increase, but abundant supplies of barley during the past two years have competed actively with oats as a dairy feed, and for other feed purposes.

The 1928 acreage was slightly below that of 1927, but yields were above average, producing a crop of 1,450,000,000 bushels, or about 267,000,000 bushels more than the small 1927 harvest. As carry-over was small, the supply for the current season was only about 238,000,000 bushels over that of the previous crop year. The 1928 crop was of better quality than that of the year before, and premiums which prevailed last season for the heavier weight grain were not obtained this season. Prices of oats at the principal markets January 1, 1929, averaged about 45 cents per bushel, compared with 54 cents January 1, 1928.

Slow demand and low prices restricted marketing, and receipts at the principal markets from August 1 through December were only about 6,000,000 bushels larger than for the corresponding period during 1927, when the surplus was much smaller. Farm stocks of oats January 1 were about 25 per cent larger than a year ago and indications are that stocks at the close of this season will be larger than the carry-over of either of the past two seasons, and will be a weakening factor in the market next year.

BARLEY

Little improvement in the market for cash barley may be expected for the 1929 crop, even should acreage be somewhat reduced and average yields secured. Exports to Europe as large as from the past two crops are not probable for the 1929 harvest, and there are no prospects of increased domestic requirements for feed grains. The 1928 crop was well above domestic needs because of a record acreage and yields much above average, and prices declined to the lowest point since 1923, notwithstanding record exports. Relatively large stocks have accumulated in the markets, and indications are that larger quantities than usual will remain on farms and in commercial channels at the close of the season to compete with the 1929 crop.

Barley acreage in the United States in 1928 increased to 12,539,000, or nearly 2,800,000 acres above any previous year. With good yields, a crop estimated at nearly 357,000,000 bushels, or about 90,000,000 bushels more than the previous record crop of 1927, was produced. Stocks of corn and of other feed grains from the 1927 harvest were practically exhausted when the 1928 crop of barley became available, and large marketings passed rapidly into consuming channels. Shortage of feed supplies in Europe and relatively low prices of barley, brought an active export movement, and exports from August 1 through December amounted to more than the total exports for any previous year. Farm consumption of barley appears to have been larger than usual this season. The short supply of corn last fall and high prices of millfeeds and concentrates caused farmers, particularly in the North Central States, to use more barley and oats.

California barley may meet slightly less competition in the world market in 1929 than was encountered by the 1928 crop. Record shipments to European markets from the record crop in the eastern United States and Canada tended to restrict the demand for California barley of other than choice malting quality, and Pacific coast exports for the season to date have been but little larger than last season, although the crop was about 4,500,000 bushels larger. Stocks on farms and in trade channels in California at the first of December were materially greater than a year ago, and suggest a carry-over at the beginning of the new crop year, June 1, above that on the same date a year ago.

In the three most important producing States, North Dakota, South Dakota, and Minnesota, the 1928 barley acreage was 2,100,000 acres greater, and oats acreage, 1,700,000 acres less, than in 1925. This tendency to substitute barley for oats may be largely ascribed to the unusually greater net return per acre from barley than from oats in that section. With prices existing on December 1, 1928, and assuming average yields, the gross return is about \$1.50 per acre in favor of barley. Production costs are probably nearly the same for these crops. Therefore, it seems likely that the preference for barley as compared with oats will continue.

CORN

With no material change in corn acreage in the different sections of the country anticipated, and with average yields, a 1929 crop slightly smaller than the 1928 crop may be expected. With lower feeding requirements and probably a lower European demand for American corn, prices may be lower than for the crops of 1927 and 1928. Corn price changes the next few months will be materially influenced by corn crop prospects in Argentina. Corn prices

during the summer, although largely determined by new crop prospects, will probably not be supported this year by unusually short farm supplies.

Total supply at the beginning of this season was about the same as in each of the two preceding years but slightly less than in 1925. The 1928 crop was nearly 3 per cent larger than in 1927, but the carryover on farms and in the channels of trade was very small. The 1928 harvest was characterized by a shortage in the Southern States and a generally good crop elsewhere, while in 1927 there was a marked shortage in the East North Central States. With about 75 per cent of the crop in the North Central States, the distribution of the 1928 harvest resembled the 1925 crop when 77 per cent was in this region. The South also had a short crop in 1925. Changes in the location of this season's supplies are reflected in farm prices which were from 1 to 9 cents lower in Illinois, Wisconsin, Minnesota, Iowa, Missouri, and North Dakota, on December 15 than a year ago, but from 1 to 4 cents higher in Kansas, Nebraska, South Dakota, Indiana, and Ohio, and from 2 to 25 cents higher in Southern and Eastern States.

Supply of other feed grains at the beginning of the crop season was considerably larger than for any year since 1925. The 1928 production of feed grains along the Atlantic seaboard, and in the Cotton Belt, was much smaller than a year ago. Total supply of oats this season is about 18 per cent larger than in 1927, but nearly 8 per cent lower than in 1925. Barley supplies are the largest on record, and the production of grain sorghums appears to be about 3.5 per cent greater than the 1927 harvest. The supply of by-product feeds will probably be larger than last year.

Supplies of corn on farms January 1 were slightly less than a year ago for the country as a whole. Supplies were slightly smaller in the West North Central States, fully 30 per cent larger in the East North Central States, but nearly 20 per cent smaller in the South.

Last winter corn prices made a marked seasonal advance from December to May, and were maintained at about the high May level until August, 1928. Market prices made some declines from August to October and dropped abruptly to a new crop basis of about 80 cents per bushel during the latter part of October.

In spite of larger total supplies of feed grains in 1928, central market prices of corn to date for the 1928 crop have been about the same as last season. Small stocks at the beginning of the season, combined with delayed marketing of the 1927 fall pig crop, and increased numbers of cattle on feed, resulted in earlier and heavier feeding of new corn than usual. Smaller feed grain supplies in the South and East and stronger export demand have also supported corn prices.

Demand for feeding this spring and summer is likely to be less than last year, as there are apparently fewer hogs to feed and there is a continued downward trend in the number of horses and mules.

European demand for American corn will undoubtedly slacken as Argentine supplies become available; but this may be offset as the season advances by demand from Southern States where the crop is unusually short. The earlier marketing of the winter run of hogs this year will deprive the corn market of considerable support that it had during the late winter months last year. If corn crop prospects in Argentina improve, it is possible that the usual seasonal advance in prices from February to May will be delayed. Corn prices during the late spring and summer will be determined largely by new crop prospects, but they will probably not be supported by unusually short supplies of old corn as in 1928.

There will probably be fewer livestock to be fed from the 1929 crop than are being fed from the 1928 crop. If corn crops in Europe and Argentina are average, the foreign situation will not be as strong as at present. It is probable that both domestic and foreign demand will be lower next winter than at present. If average corn yields are secured on acreages not materially different from 1928, it is not likely that prices will equal those of the present season.

BEEF CATTLE

The outlook for the cattle industry continues favorable, with prices about at the peak of the cycle. In the past, price situations like that now prevailing have been followed by increased production and reduced prices. This, therefore, does not appear to be a favorable time for new producers to enter the industry.

Those already in may profit by moderate expansion during the next two or three years even though prices go somewhat lower.

Market supplies in 1928 were less than in 1927 and further reduction in 1929 is indicated. The decrease probably will not be as great as in 1928. Supplies of grain-finished cattle during the first half of 1929 will probably equal or exceed those in the first half of 1928. Any increase in such cattle is likely to be offset by decreased supplies of other kinds of slaughter cattle. Demand for beef, consequently for slaughter cattle, is not expected to differ greatly from that of 1928. Although top prices of slaughter cattle may be higher than last year, average prices are not expected to be greatly different. Feeder cattle prices probably will not average as high as during 1928.

The number of all cattle on farms January 1, 1929, was about the same as on January 1, 1928. The department estimates the number of all cattle on January 1, 1929, at 55,751,000 head, which is 70,000 head, or 0.1 per cent more than on January 1, 1928. This small change during 1928 indicates that births and imports during the year were about equivalent to total slaughter and death losses. The composition of the total cattle herd on January 1, 1929, differed slightly from that of 1928. There was some increase this year in the proportion of yearling heifers and heifer calves and steers, but a decrease in the proportion of cows.

Total inspected cattle and calf slaughter in 1928 decreased about 1,250,000 head from that of 1927 and 2,185,000 head from the record slaughter of 1926. Apparently the present breeding herd of the country can produce enough calves to maintain cattle numbers at about the present level, and permit an inspected slaughter of domestic cattle and calves of about 13,000,000 head—the slaughter in 1928. If cattle numbers are to increase, a further reduction in slaughter will be necessary for several years to permit the building up of breeding herds. Such reduction may come in the slaughter of either cows or heifer calves, or both.

According to department estimates there was an increase of about 3 per cent in the number of cattle on feed in the Corn Belt on January 1, compared with January 1, 1928, partly offset by a decrease in the Western States. This increase in feeding will be reflected in increased supplies of grain-finished cattle during the first half of 1929. It seems highly probable that this increase will be at least offset by decreased supplies of other kinds of slaughter cattle, and that total slaughter will be no larger than during the first half of 1928. The average grade of cattle slaughtered will be higher because of an increased proportion of grain-finished kinds.

Supplies of grain-finished cattle during the last half of 1929 are likely to be smaller than for the corresponding period of 1928, unless there is an unexpected advance in prices for fat cattle during the next few months. Supplies of grass cattle and stockers and feeders may show some decrease compared with 1928 if, during the next six months, the level of cattle prices shows no more than the usual seasonal decline, and cattle growers become more confident that the present level is fairly established for some years.

So long as there are no changes in present regulations governing importations of meat animals and meat products into the United States, there seems to be no reason to anticipate serious competition from foreign sources in our domestic market. Although imports of cattle, calves, beef, and veal showed a considerable percentage increase during 1928 over the preceding year, they were equivalent to only about 5.6 per cent of our total supply of beef and veal.

Imports of cattle and calves during the 11 months ended November, 1928, totaled 493,656, compared with 385,670 during the corresponding period in 1927. Practically all of these came from Mexico and from Canada.

Imports of beef and veal during the same period amounted to 56,755,000 pounds, compared with 38,690,000 pounds in 1927. In previous years, practically all of New Zealand's surplus beef went to Great Britain, but in 1928 prices in the United States were sufficiently favorable to attract 30,167,000 pounds of beef and veal from that distant country during the first 11 months of the year. However, the total number of cattle in New Zealand has ranged from 3,600,000 head in 1924 to about 3,000,000 in 1928.

Although imports of beef and veal from Argentina are still confined to canned products, there is an indirect competition from Argentine beef because low prices of this beef in Great Britain exclude the Canadian surplus from that market and practically force it on the American market.

Demand for slaughter cattle in 1929 is likely to about equal that of 1928. Demand for beef probably will show little or no change. Any decrease which might result from less favorable business conditions may be offset by smaller supplies and higher prices of other meats.

Feeder cattle are expected to be in good demand throughout the year, but speculative activity similar to that which characterized the market during the summer and early fall of 1928 is not expected.

In general the seasonal movement of prices of all kinds of cattle in 1929 will be more nearly normal than was the case in either 1927 or 1928 when seasonal price movements were greatly confused and at times obliterated by a progressive reduction in market supplies. The general level of cattle prices in 1929 probably will not continue the rise which has been under way since 1924.

In 1927 a decrease of 8.4 per cent in beef derived from inspected slaughter was accompanied by a rise of 17.9 per cent in average cost of cattle to packers. In 1928 supplies decreased 10.9 per cent compared with 1927 and the average cost of cattle advanced 22.7 per cent. In both years a decrease of 1 per cent in supply was accompanied by an increase of 2.1 per cent in average cost. This is considerably above the usual increase in price for such a decrease in supply. In view of the present relatively high level of beef and cattle prices it is not to be expected that a further reduction in supplies will be accompanied by a commensurate advance in prices.

Slaughter-cattle prices in the first half of the year are expected to show seasonal movements similar to those which occurred in 1928. The decline on the better grades, now in progress, began about the middle of last September which was nearly four months earlier than the tardy decline of the year previous. The low point in prices of such cattle this spring is expected to be slightly below that reached in May, 1928. The relative scarcity of lower grade cattle probably will result in higher average prices for such kinds than prevailed during the first half of 1928. The general average of all slaughter cattle prices will not be much different than during the first half of last year.

During the second half of the year, slaughter-cattle prices may reach a peak higher than in 1928, but average prices will probably be little if any higher. During the greater part of the year lightweight cattle will be in better demand and will command some premium over comparable grades of medium and heavyweights, but during the last few months choice heavyweight cattle may sell at a premium.

Feeder-cattle prices in 1929 probably will not average as high as in 1928, since it is not likely that the exceptionally strong demand which prevailed during the first nine months of 1928 will be in evidence in 1929.

When prices are at the peak of a cycle it is usually not a good time for newcomers to enter any business. The present level of cattle prices can be expected to encourage increased cattle production, if producers generally become convinced that it will be maintained for some years. The rapid advance in prices during the past two years, however, tended to increase the risks of increased production, especially on the part of new operators, and thus acted as a brake on the tendency toward expansion. In view of the probable steady increase in milk stock, which gives only a low beef outturn, some increase in beef cattle numbers, on the part of men now in the business, seems desirable to keep pace with increased population and to provide a per capita supply of beef at least as large as in 1928. Maintenance of the present production policy of quick turn-overs by marketing at younger ages with a gradual building up of breeding herds, which makes possible more rapid readjustment to price changes, seems preferable to the more speculative one of keeping steers to an older age and heavier weight—which means holding out of the normal supply of one year, stock to be added to that of the following.

HOGS

The hog outlook for 1929 is favorable. Slaughter is expected to be considerably smaller than in 1928, with some improvement in foreign demand and no material change in domestic demand. The seasonal levels of hog prices in 1929 and 1930 are expected to average higher than in 1928. If higher hog prices this year stimulate increased hog breeding in late 1929, increased marketings in the winter of 1930-31 will again start the hog-price cycle downward. Stabilization of hog production at a level represented by the pig crop of 1928 appears to be the most suitable program for securing a profitable balance between corn and hog production in the Corn Belt.

The combined spring and fall pig crop of 1928, as indicated by the pig surveys, was about 5 per cent smaller for the Corn Belt and 6.5 per cent smaller for the United States than the crop of 1927. Distribution of the 1928 crop over the Corn Belt States was in better relation to corn supplies than that of the 1927 crop, since a larger-than-usual proportion of the latter crop was produced in the Corn Belt States east of the Mississippi River where corn production was much below normal in 1927.

Estimated number of hogs on farms on January 1, 1929 was 54,956,000 head compared with the revised estimate of 60,420,000 on January 1, 1928.

Information as to hog supplies for the marketing-year, November, 1928, to October, 1929, indicates an inspected slaughter of 44,000,000 to 46,000,000 head, which compares with a slaughter of 48,100,000 for the crop-year 1927-28, 43,100,000 for 1926-27 and 40,800,000 for 1925-26. The decrease for this crop-year from that of 1927-28 is thus indicated as from 2,000,000 to 4,000,000 head. Slaughter in November and December of the present crop-year was about 1,680,000 head larger than for these two months a year ago. The supply of hogs for the remaining 10 months of this crop-year, January to October, inclusive, is thus indicated as from 3,500,000 to 5,500,000 head smaller than for the same months in 1928. The greater part of this decrease is expected to occur during the period February to June. The indicated decrease in prospective slaughter supplies is partially offset by an increase in storage supplies of pork and lard on January 1 over a year ago of 176,000,000 pounds which is equivalent to about 1,100,000 hogs.

These estimates of slaughter supplies are based upon (1) the 1928 pig surveys, which indicated a decrease in the total pig crop of the Corn Belt in 1928 at about 3,200,000 head and of the United States at about 5,400,000 head as compared with 1927; (2) the relationship of the slaughter in November-December, 1928, to total winter slaughter; (3) the probable proportion of winter slaughter to slaughter for the crop year; and (4) the estimated number of hogs on farms January 1, 1929, compared with the numbers on January 1, 1928 and 1927.

The indicated reduction in the 1928 fall pig crop in the Corn Belt as compared with the fall crop of 1927, together with an indicated reduction in the number of sows to farrow next spring, points to slaughter supplies next summer and fall slightly smaller than in the corresponding seasons of 1928. Distribution of marketings during this period is expected to be more even than in 1928. Last summer the scarcity and high price of corn apparently caused many producers to carry on grass, hogs which ordinarily would have been marketed earlier. When new crop corn became available these hogs were finished out as quickly as possible, resulting in a larger-than-usual proportion of old crop hogs in late September, October, and early November marketings.

December reports on the number of sows bred, or to be bred, for spring farrow in 1929, point to a decrease in the spring pig crop, assuming a relationship between breeding intentions and actual farrowings similar to that of other years. For the Corn Belt this reduction is indicated as from 4 to 9 per cent. If such a reduction takes place the supply of hogs for the winter of 1929-30 will be less than for this winter.

Present supplies of corn in the Corn Belt are normally distributed and no unusual movement of corn from surplus to deficit areas, such as occurred last year, is to be expected. The corn-hog ratio of 12 in Iowa on December 15 was somewhat more favorable to hog feeding than a year ago, when it was 10.5. Since no material change in corn acreage in 1929 can be foreseen at present, an average yield per acre would insure a supply of corn for feeding next fall and winter larger in proportion to feeding requirements than this winter, if hog production is curtailed to the extent now indicated.

Domestic demand for pork products this winter, as measured by the relationship between wholesale prices and the volume of products moving into consumptive channels, appears to be somewhat stronger than the relatively low demand which prevailed in late 1927 and the first half of 1928. No material change in the present level of demand seems likely during the next six months. If some slackening in demand in the winter of 1929-30 should occur as the result of decreased business activity, this will be more than offset by the probable reduction in hog supplies.

Factors affecting the foreign demand for American pork products have a more favorable aspect for the 1928-29 season than a year ago. The outstanding points are: (1) Fewer hogs in Europe, as indicated by reduced numbers

of breeding sows and smaller current marketings; (2) a feed supply in Europe no larger than the relatively small supply of last year, and higher prices for some imported feeds, all of which tends to discourage increased breeding; (3) a European price level for hogs and hog products other than lard, substantially above last year, these increases over last year to date being relatively larger than the increases in the United States; and (4) somewhat improved buying power on the Continent, and no decrease probable in Great Britain. The European feed situation can not show any material improvement before the harvest of the 1929 crop. The outturn at that time will be a factor in determining breeding operations next fall, but if increased hog numbers are the result, they could not become a depressing factor before the fall of 1930.

These favorable factors may be expected to result in an increase in export demand for American pork and lard during 1928-29 as against 1927-28. In Great Britain, the leading foreign market for American pork products, the indicated reduced supplies of cured pork from the Continent should place the American products in a better competitive position. The British demand for lard during recent years has fluctuated within relatively narrow limits, and the total quantities of lard taken in 1929 should be no smaller than the imports in 1928 unless American lard prices advance markedly above last year.

In Germany, the outlook is for a season of higher pork prices as compared with last year. With conditions in neighboring countries substantially the same as those prevailing in Germany, that country should offer a better outlet this year than last for American hog products, especially for lard. Since livestock production plans in Europe, especially on the Continent, are designed to meet domestic requirements so far as possible, production plans in America should take into consideration that the European outlet for American hog products can not be expected to equal average exports since the war.

Hog prices apparently reached the low point of the winter season the week ending December 15, when the average at Chicago was \$8.50. Prices subsequently moved gradually upward until the fourth week in January when a sharp advance carried the average to approximately \$9.25 or about \$1.15 higher than a year ago.

On the basis of indicated supply and demand conditions hog prices are expected to continue the seasonal advance now in progress until the peak of the spring rise is reached sometime in March or early in April. This probably will be followed by a normal seasonal decline which usually comes in May and June, when the bulk of the fall pig crop of the previous year is marketed.

Supplies of hog products in storage on July 1, 1929, are expected to be considerably less than those on July 1, 1928, and hog supplies next summer are expected to be less than last summer; demand for pork both at home and abroad is likely to show a slight improvement over the demand in the summer of 1928; and hog prices will probably average higher than last summer. The level of hog prices during the winter of 1929-30 is expected to average higher than that prevailing this winter.

Inspected slaughter of hogs in the crop year 1927-28 totaled 48,100,000 head and was the third largest on record, being 7,000,000 head or 18 per cent larger than that of 1925-26 and 5,000,000 larger than that of 1926-27. Market value of the 1927-28 inspected slaughter was 15 per cent less than the \$1,195,000,000 paid for hogs slaughtered in 1925-26. Slaughter in 1925-26 was the smallest in 7 years and total market value was the largest. Average price per 100 pounds was \$9.20 in 1927-28 and \$12.37 in 1925-26.

Market supplies of hogs equal to those of the past year can only be expected to result in a comparatively low level of hog prices. If Corn Belt production policy is to be a continuation of the present high corn and feed crop acreage, with varying yearly production from that acreage the determining factor in hog production, then wide fluctuations in both hog supplies and hog prices are to be expected. Hog supplies for 1929, as indicated, seem to be near the maximum for which a fairly high level of prices can be secured and near the minimum to be expected from present corn production. Stabilization of supplies at about that level seems to offer the best present prospects for joint corn-hog returns in the Corn Belt.

DAIRY PRODUCTS

The gradually increasing demand for milk and milk products will probably maintain about the present spread between the prices of feed and the prices of dairy products until there is such a material change in the beef situation

that farmers will increase milk production by milking a larger number of beef-type cows. As combined domestic production of all dairy products during recent years has averaged about 99 per cent of domestic consumption and as prospective foreign supplies limit the level to which domestic prices can rise, the situation does not justify more than a gradual expansion of dairy herds, possibly not more than 1 per cent per year.

Farmers now have an opportunity to dispose of old cows for beef purposes at good prices. This opportunity will probably be open for two or three years. The spread between price of dairy cows and value of the cows for beef purposes can not long remain as great as at present if farmers continue to raise increasing numbers of dairy heifers.

The number of milk cows on farms is about the same as at this time last year. In nearly all States the number of yearling heifers and heifer calves being kept for milk cows is larger than the number on hand a year ago; in the Northeast the increases are substantial, but, for the country as a whole, the present number is less than 1 per cent above the number ordinarily required to maintain the present number of milk cows. Changes in number of cows milked during the next two years will depend largely on the relation between price of beef and price of dairy products, for this affects both the age at which milk cows are sold for slaughter and the number of beef-type cows milked. Indications are that for the next few years the price of beef will be an important factor in restricting the expansion of dairying in the Corn Belt and in much of the South and West, and the number of cows milked in the country as a whole is expected to show little increase for several years. Returns from dairying will continue to vary rather sharply from season to season according to pastures, feed conditions, and urban demand. Profits in individual years will depend on the promptness with which changes in production costs are reflected in changes in production and in changes in the prices of dairy products. With the number of milk cows increasing only slowly, if at all, the gradual increase in the per capita requirements of the increasing population seems likely to result in prices averaging sufficiently above feed costs to permit a gradual further increase in the production of milk per cow.

The number of milk cows on farms in the United States has changed but little during recent years. The number increased from 21,408,000 in 1921 to 22,523,000 in 1925 and then decreased to 21,824,000 last year and to 21,820,000 on January 1, 1929. Compared with eight years ago, present numbers are lower in the North Atlantic States and higher chiefly in the West North Central and Western States. Present numbers are slightly above those on hand a year ago in most of the Western States and in the southern Appalachian region, but these increases are about offset by slight decreases in important North Central dairy States and by what appears to be the beginning of a shift from dairy cattle back toward beef cattle in the western half of the Corn Belt. Increases in yearling heifers being saved for milk cows averaged 4.2 per cent. The figures show, however, continued increase in heifers in the North Atlantic States where farmers have been maintaining their herds by buying cows from farther west. In this area, farmers have increased the number of heifer calves saved from 5 to 10 per cent a year for three years in succession. Present numbers are close to those required for normal replacement of aged cows. Obviously, if the number of heifers raised is increased above the number locally needed for replacement and for increasing herds it will materially affect dairy cow prices in that area. Since present numbers of young stock in this area are the highest since 1920 there seems no justification for further increases there this spring in the number of heifer calves saved.

Loss of dairy cows from tuberculosis eradication is decreasing and now amounts to only about 1 per cent of the total milk-cow population.

With little change in milk cow numbers for several years anticipated, and little or no shift from beef-type to dairy-type cows expected, changes in milk production will depend largely on the intensity of feeding. During recent years the relationship of prices of dairy products to both beef prices and feed prices has been relatively favorable for dairying, and production per cow has increased, because of more intensive feeding and shift toward dairy-type cows. Between 1924 and 1927 production per cow appears to have increased about 10 per cent, the increase being shared by all sections of the country.

Pastures in 1928 averaged poorer than usual until midsummer and then were correspondingly better than usual. Combining the seasonal averages in the various States in proportion to the State's importance in milk production,

the condition of dairy pastures averaged 81 in 1928 to 86 in 1927, and 76 in both 1926 and 1925.

Hay supplies are lower than the record supplies of last year, and feed prices are somewhat higher. The most marked changes are in the lower supplies of legume hays and in the higher prices of high protein concentrates. It does not seem likely, however, that feed prices will advance as much as they did last spring.

Production of manufactured dairy products the past two years has not kept pace with the upward trend of previous years on account of increased consumption of fluid milk and cream, and no increases in numbers of dairy cows. Butter production has made no material change since 1926, and except for favorable conditions during the past fall, it is probable that 1928 production would have shown a noticeable decrease under 1927. Cheese production seems to have been slightly heavier in 1928 than the previous year, but was actually less than in 1926. Condensed and evaporated milk production in 1928 was slightly less than in 1927. On a total milk equivalent basis, 1928 production of manufactured dairy products was about equal to that of 1927.

Stocks of dairy products at the close of the year indicated no burdensome surpluses, except cheese, which accumulated throughout the summer and fall months, and which partially explains the low cheese prices now prevailing.

Consumption of dairy products was maintained throughout 1928 despite the slightly higher prices which prevailed. Demand seems likely to remain high through the first half of 1929 with a possible downturn in demand toward the end of the year or in 1930.

The quantities of foreign dairy produce absorbed by our markets were somewhat lessened in 1928, while our sales of concentrated milk abroad increased. The net importation of dairy products into the United States on the basis of total milk equivalent was about 1 per cent of domestic production. It can not be expected that this year will bring less pressure from foreign competition. Practically throughout the year foreign dairy production was retarded by unfavorable pasture conditions and European markets were strengthened by unusual demand. Together, Great Britain and Germany took some 10 per cent more butter in 1928 than in 1927, with higher average prices prevailing in their markets. The season of flush production in New Zealand and Australia begins in August, and during the first three months of the current season New Zealand butter production is officially estimated to have been 15 per cent greater than for the same period for the previous season and Australian butter production during the first four months is estimated to have been a third heavier. Most of the influence of increased supplies from the Southern Hemisphere during the current season which began in August is still to be felt in our markets.

While the Northeastern States may be helped somewhat by the shift from dairy production to beef production in the western Corn Belt, they face the probability of a steady increase in the shipments of fluid cream into their territory from the mid-west, and they are likely to suffer if they expand production faster than is necessary to supply their growing local demand for fluid milk. In fact, holding herds at present levels for several years, while shifting freshening dates enough to prevent fall deficits, would decrease milk sold as surplus and possibly improve the dairy farmers' returns. Either a general increase in cow numbers in this section, or failure to provide for the fall shortage which would force dealers to draw upon new territory, would continue a surplus production and depress dairy returns to farmers in this section.

During the past five years the eastern section of the Middle West has shown continued moderate expansion in butter and cheese, but material decreases in condensed and evaporated milk. The northwestern section comprising Minnesota, Wisconsin, Iowa, and the Dakotas, has shown steady but moderate increases in all important products with the first three States continuing to lead the Nation in the quantities of dairy products manufactured. Production of manufactured products also is being rapidly expanded in the southwestern part of the middle west section, which includes Nebraska, Kansas, Missouri, and Oklahoma. The present strong position of the beef-cattle industry has reduced the incentive for owners of beef or dual purpose herds to milk their cows or to shift into definite dairy activity, and high value of dairy cows for beef has encouraged farmers to sell a larger number of old cows. Not for at least two or three years is the beef price situation likely to change sufficiently to increase competition with dairying. All mid-western sections show increasing extension

of fluid milk areas which will continue with the growth of cities. Continued progress in long-distance shipping of milk and cream, particularly the latter, has been made and further expansion may be expected.

In the Southern States condensed and evaporated milk production has increased from about 0.8 per cent of the total domestic production in 1924 to 3.6 per cent of the total in 1927. Butter production was about 4 per cent of the United States total in 1924 and 5.6 per cent in 1927. Cheese production has also shown considerable gain. Expansion of dairying in this section seems likely to continue.

Production in the Pacific States has not been keeping pace with the increase in consumption and, therefore, the Mountain States (Montana, Wyoming, Colorado, New Mexico, Idaho, and Utah), which have shown marked increases in production during recent years will probably continue that trend.

SHEEP AND WOOL

Supplies of lambs for marketing in the first half of 1929 are slightly larger than a year earlier, and indications are that a larger proportion of western-fed lambs will be marketed after March 1 than last year. Sheep numbers continued to increase during 1928 and the lamb crop this year may show some increase above last year.

Wool production in the United States and in the important foreign producing countries during the 1928-29 season will apparently be about 6 per cent larger than for the 1927-28 season and stocks in the primary markets have been increased. Last season's slightly reduced supplies and active foreign demand this season have strengthened prices for lower grade wools. This season's larger world wool supplies and the declining tendency in foreign prices have not been reflected by a decline in prices of wool in this country.

Active business conditions will continue to help support the lamb and wool market well through 1929, with possible slackening in late 1929 or in 1930. Although increased numbers of sheep in this country have not as yet affected the markets, caution should be used in production plans since present lamb prices can not be maintained if expansion is continued too rapidly.

LAMBS

The number of sheep and lambs in this country continued to increase during 1928 and on January 1, 1929, the estimated number was 47,171,000 head, an increase of 2,627,000 head, or 5.9 per cent over the number on January 1, 1928. The number on January 1, 1929, was 10,985,000 head, or 30 per cent larger than on January 1, 1922, and was only 1,416,000 head below the number on January 1, 1909, 48,587,000, which was the maximum number in over 30 years.

The lamb crop of 1928 was about 1,800,000 head larger than that of 1927, according to estimates of the Department of Agriculture. About 600,000 head of this increase was reflected in increased inspected slaughter from May to December which was the largest slaughter for this period since 1914. The number of sheep and lambs on feed January 1, 1929, was estimated at 4,463,000 head, which was 5½ per cent more than on January 1, 1928. With the increased number of lambs on feed the total slaughter from the 1928 lamb crop is expected to be about 900,000 head larger than the slaughter from the 1927 crop.

The increased number of lambs on feed this year is due to increased numbers in the Corn Belt States, including western Nebraska. The estimated increase in this area was 389,000 head. The number on feed in Colorado and the other Western States, was about 140,000 head less than on January 1, 1928. The weight of lambs when put on feed, the location of the supplies, and reports on feeder plans for marketing indicate that the proportion of western-fed lambs to be marketed after March 1 will be larger than last year.

Conditions to the end of January for the early California lamb crop have been less favorable than they were a year ago, but any decrease in the percentage of early lambs saved this year compared with last year is likely to be more than offset by the increase of breeding ewes. Weather and feed conditions during February and March will determine the number of early slaughter lambs from California, but there is no present reason to expect the supply to be less than last year or to move later. Feed conditions in Texas are favorable for an increased movement of grass-fat yearlings and wethers in April and May over that of last year.

The supply of lambs during the last seven months of 1929 and the early part of 1930 will depend largely on the size of the lamb crop of this year. In general, weather conditions during the breeding season, condition of breeding flocks, and feed supplies in most of the Western States, were less favorable than last year. It hardly seems likely, therefore, that the number of lambs per 100 ewes will equal that of 1928 in the Western States, even with weather as favorable as last year during lambing. However, the increase in breeding ewes will probably result in a lamb crop as large as last year, unless weather conditions during lambing are very unfavorable. Feed and weather conditions in the early lambing area of the Southeast, including Kentucky, Tennessee, and Virginia, have been more favorable than last year and an increased supply from this section is indicated.

Demand for lamb improved steadily throughout 1928 and for the year as a whole averaged somewhat better than for 1927. During the last half of 1928 a 5 per cent increase in the per capita supply of lamb was accompanied by a 2 per cent increase in prices of dressed lamb, thus indicating a considerably stronger demand than in the last half of 1927. The recent improvement may be attributed largely to increased industrial income and to higher prices of poultry, veal, and other competing meats.

A strong factor in the lamb situation, especially in the last few years, has been the marked upward trend in the demand for lamb, which has resulted in an increasing per capita and total consumption of lamb at comparatively steady to higher prices.

Active business and other conditions indicate a continued strong demand for lamb during the first half of 1929. A relatively high level of prices for competing meats and population growth will help maintain the present high level of demand but it is possible that the demand in the first half of 1930 may be reduced somewhat from the present high level.

Average prices of Good and Choice, handyweight slaughter lambs at Chicago advanced from \$13 at the beginning of 1928 to more than \$17 in the spring, then gradually declined, reaching the \$13 level again in October. In December they made a sharp recovery and in early January, 1929 reached more than \$16. Prices generally maintained about the same seasonal movement as in 1927, at a level approximately \$1 higher, except during October and November when increased supplies, accompanied by a reduced demand for feeding lambs, forced prices below the corresponding period in 1927. The relatively high level of prices of lambs early in the year, as compared with carcass values, may be attributed largely to the increased wool and pelt values.

WOOL

Wool prices in this country had a general upward tendency from the middle of 1927 to the middle of 1928, followed by a decline with some recovery toward the end of the year. At the close of 1928, prices of most grades of domestic wools were well above those of the year previous. Prices of 64's-70's (fine) strictly combing wools, however, were slightly lower.

Consumption of combing and clothing wool, as reported by the Bureau of Census for the first 11 months of 1928, was 361,000,000 pounds (grease equivalent) as compared with 384,000,000 pounds for the same period in 1927 and a 5-year average of 413,000,000 pounds for January-November, 1923-1927. Consumption of 64's and above (fine) domestic wools from January to November increased considerably over the same period in 1927, the increase being largely in the clothing and French combing types rather than in a longer staple, while consumption of 64's-70's (fine) foreign wools showed a decrease. Foreign wools other than the 58's-70's (fine and half-blood) also showed a considerable decrease in consumption, but the decrease was not accompanied by an increase in the comparable grades of domestic wools, the consumption of which remained about the same.

Reduced consumption of foreign wools was reflected by the small imports of combing and clothing wool for the first 11 months of 1928. Those imports totaled 84,000,000 pounds as compared with 113,000,000 pounds for the same period in 1927 and 162,000,000 pounds for the 5-year average January-November, 1923-1927.

Wool production exclusive of pulled wool in the United States has steadily increased during the last six years, being 296,000,000 pounds in 1928, as compared with 278,000,000 pounds in 1927 and 222,000,000 pounds in 1922.

The general price situation abroad while still firm on some grades is somewhat weaker than a year ago. Demand continued strong throughout 1928. At the beginning of 1928, prices abroad were maintained by light supplies, by the economic improvement on the Continent, and by the strong demand from Japan. At the end of the year, however, prices of nearly all grades above 56's at London were several cents below those a year ago. Prices of a few low grades were slightly higher.

Wool production in 10 countries which produce a little over two-thirds of the world's wool is estimated at 2,520,000,000 pounds for 1928-29, an increase of 6 per cent over 1927-28 and 5 per cent over 1926-27. All of the important wool-producing countries of the Southern Hemisphere showed increases over 1927. Apparently sheep numbers at the beginning of 1929 will show an increase in this latter group of countries since recent lambing conditions were much better than they were in the preceding year when most of these countries were suffering from prolonged drouth.

The outlook for the sheep industry in this country during the next few years indicates the need for due caution in regard to continued expansion. The last low point in sheep numbers was reached in 1922. There has since been considerable expansion in flock numbers and this expansion is continuing. During recent years the effect of increased slaughter has been largely offset by the upward trend in the consumer demand for lamb, with the result that lamb prices have been on a comparatively high level for several years.

Holding back lambs in order to expand flock numbers has restricted slaughter during the past few years. When this tendency ceases it is to be expected that the yearly increase in flock numbers during recent years will go to increase supplies of sheep and lambs for slaughter. If this should come at a time when demand conditions are less favorable, it is hardly likely that the market can absorb the additional supply without a considerable reduction in price.

MOHAIR

The outlook for mohair producers is fairly good, but not quite so good as it was at this time last year. Domestic production appears to be increasing more rapidly than consumption; foreign consumption in 1928 was less than in 1927. The situation, however, is still much better than at the beginning of 1927 and mohair prices may be maintained near the level realized for the 1928 fall clip. As stated last year, producers should be careful not to expand production more rapidly than domestic demand requires. One million more goats, producing 4.4 pounds of mohair per head, in 1928 probably would have supplied the domestic market and reduced prices.

During the past two years prices have been encouraging to producers. The price of good combing domestic mohair at Boston averaged 69 cents in 1926, 72 in 1927, and 86 in 1928. As indicated in the last Outlook Report, the situation at the beginning of the year was very favorable. High prices were paid for the spring clip. Good combing domestic mohair reached 91 cents per pound in May and remained at this level until September, when the price level dropped to 82 cents, about the same as at the beginning of the season. Supply and demand prospects for 1929 suggest that prices may be maintained near the present level through the season.

Absence of large accumulation of stocks is a favorable factor in the present mohair situation. Domestic stocks of mohair on the market appear to be light. Imports have been larger, while quantities released for consumption have been smaller than last year. On November 30 stocks of foreign mohair in bonded customs warehouses amounted to only 4,106,000 pounds, as compared with 4,378,000 pounds on the corresponding date of 1927. It is possible that stocks of foreign mohair have increased somewhat since November 30. Stocks in bond at the end of the year in Boston amounted to 1,820,000 pounds as compared with 618,000 pounds at the end of 1927. It is reported that stocks have been fairly well cleared from South African markets, and Turkish stocks are not large.

Foreign production will probably be no larger, and may be slightly smaller, than last year. The 1929 clip in Turkey may be a little larger than the 1928 clip but not equal to that of 1927. The number of goats in the Union of South Africa has been reduced by drought and floods about 12 per cent during the past year. This will affect the 1929 clip. Conditions are now reported to be

favorable for building up the flocks, and there may be some recovery in production in 1930.

Trend of mohair production has been downward in the Union of South Africa and upward in Turkey. In the five years 1923-1927 the production in South Africa declined from nearly 16,000,000 to 11,000,000 pounds, while the production of Turkey increased from about 6,000,000 to nearly 11,000,000 pounds. It seems possible that the Union of South Africa has reached a turning point in the decline and Turkey a turning point in the expansion of production.

Foreign consumption of mohair in 1928 appears to have been less than in 1927. Mohair retained for consumption in Great Britain in the first 11 months of 1928 was 5,000,000 pounds less than for the corresponding period in 1927. This slackening in consumption in Great Britain has been reflected in some increase in the imports of the United States.

Production in the United States has been expanding at a rapid rate. During the five years 1923-1927 production increased from 9,000,000 to 13,500,000 pounds. The prices realized for mohair during 1928 will probably stimulate expansion, but in planning any expansion producers should carefully consider the danger of producing so much mohair that prices will fall to an export basis.

There has been a great expansion in the domestic consumption of mohair since the war, but the rate of expansion in the past few years may not be continued. In the three years 1920-1922 consumption averaged close to 14,000,000 pounds. In the past three years it has averaged about 18,000,000 pounds. It appears that consumption in 1928 was slightly less than in 1927, and considerably less than in 1926. It is significant, however, that prices in 1928 were materially higher than in 1927 and that these higher prices were accompanied by only a slightly lower consumption, indicating that demand for mohair was well maintained. At the same prices or at lower prices consumption in 1929 may be larger than in 1928. Since mohair is used extensively in the manufacture of linings for automobiles, the consumption of mohair will depend to some extent upon automobile production and the extent to which other fibers are used in the manufacture of automobile linings. In view of the uncertainty as to a continuation of a rapid rate of increase in demand, producers should reduce the rate of increase in production somewhat below this 10 per cent rate maintained during the past three years.

HORSES AND MULES

The horse and mule price cycle has apparently turned upward. At the present rate of breeding, and of decline in number of work animals, the present horse and mule population of about 19,000,000, compared with 25,000,000 in 1920, will be reduced to about 11,000,000 in 10 years. Breeding of work animals as a side line seems advisable in areas where relatively cheap feed and pasture are available.

Strengthening of the prices of horses and mules in late 1927 and substantial increases during 1928, indicate that the long price decline has been checked, and that the upswing of the price cycle is now underway. This upturn in farm prices of work stock was first shown by mule prices in the fall of 1927, undoubtedly precipitated by favorable cotton prices. Horse prices followed several months later. The upturn has been more pronounced and of longer duration in the deficit horse-producing areas of the East and has not yet made much headway in surplus-producing areas west of the Mississippi River.

Horse prices during 1929 may continue upward, especially in Eastern States. Mule prices during 1929 are expected to remain higher than during 1927, and may even exceed those of 1928. Any marked expansion of cotton acreage in the eastern Cotton Belt would tend to stimulate mule prices, but it is doubtful if a contraction of acreage would result in prices as low as prevailed during 1927. The fall movement of horses and mules into the South was not as large last fall as a year ago. Receipts of mules at southern markets for the three months from October to December were about half those for the same period in 1927, but nearly twice as large as in 1926.

The total number of horses and mules has decreased nearly one-fourth since January, 1920, when about 25,000,000 were on farms. Unless the number of colts is increased above the number produced during the past few years, the number of horses and mules will be reduced to about 11,000,000 within the next 10 years (based on the assumption that the average horse lives about 15 years and the average mule about 18 years).

Reduction in the number of horses and mules of working age would be even greater as the proportion of young colts would be much larger than at present. Whether this number will be sufficient to meet the needs of agriculture ten years hence will depend on the extent to which mechanical power can be economically substituted for animal power.

The number of work animals required on farms and in cities continues to decrease with the increase of automobiles, trucks, tractors, and combines. The tendency in cities seems to be to replace worn-out work animals with motor trucks rather than with young horses. Development of tractors that are better adapted for a greater diversity of farm work, and the motor cultivator, are making possible further substitution than was considered practicable a few years ago. The Census reported 506,745 tractors on farms January 1, 1925; since then domestic sales of tractors for all purposes increased from 119,000 in 1925 to 156,000 in 1927. Increased mileage of improved roads is causing an increased use of motor trucks in marketing farm products. The combined harvester-thresher has been encouraging the displacement of work animals in harvesting wheat and grain sorghums. The use of mechanical power has delayed the upturn in horse and mule prices and may be expected to retard the rate of the upswing of the cycle.

With increasing mechanical power for road and heavy farm work, future demand is likely to be for medium-weight (1,400-1,600) active horses to perform the lighter tasks and routine farm work. Demand for good cotton mules will probably be maintained and may increase within a few years.

Farmers can not expect to replace their work stock a few years from now at present low horse and mule prices. Farmers who expect to continue to use horses on their farms should consider the advisability of replacing the older work animals with young mares at present prices. This would enable them to raise colts when horse and mule prices have reached higher levels. Increased breeding of work animals on farms as a side line seems advisable in many areas, especially where relatively cheap feed and pasture are available.

POULTRY AND EGGS

Prospective supply and demand situation indicates higher prices for poultry during the first half of the current year than prevailed a year ago and prices for eggs during the first six months lower than those in 1928 but higher than those in 1927. Demand for poultry and poultry products during the later months of the year will be less if industrial activity slackens.

The situation is favorable to producers of poultry because of the relatively smaller stocks of chickens on farms, smaller cold-storage holdings, and larger supplies of feed. Egg prices will be affected favorably by the smaller number of layers on farms and adversely by the unprofitableness of the past season's storage operations and by the unusually large stocks of both shell and frozen eggs in storage January 1.

Numbers of hens and pullets of laying age on farms January 1, 1929, were somewhat less than a year earlier but apparently close to the numbers at the beginning of 1927 according to reports for 20,000 farm flocks of less than 400 layers. Sufficient data are not available to indicate definitely the change in numbers for flocks of over 400 birds but it is believed that the hen population for this increasingly important group was not increased in 1928. The number of chickens raised in 1928 was reported to be about 10 per cent less than in 1927.

EGGS

A feature of the egg production of farm flocks in 1928 was the change in the seasonal distribution of the lay from the previous year. Layings per hen and per pullet up to May, 1928, were 5 to 10 per cent less than in 1927; from June to August they were slightly more, and from September to December 5 to 10 per cent heavier than in the previous year. The layings per bird during the latter part of the year were offset by a reduction in the numbers of hens and pullets on farms so that the total production of eggs during the fall was about the same as during the fall of 1927. The heavier fall layings are largely attributed to the favorable weather for production and to generous feeding. Total receipts of eggs at the four principal markets in 1928 were slightly less than in 1927, but about 2 per cent above the 5-year average. Receipts during the first half of 1928 were below those for the corresponding period in 1927 but in the second half they were heavier.

Exports of eggs in shell were considerably lower in 1928 than in 1927; for the first 11 months they were 27,000,000 dozen in 1927, and 19,000,000 dozen in 1928. The reduced exports for 1928 were due in part to a domestic price level during the usual export season about 5 cents per dozen higher than in 1927. Imports of eggs and egg products were heavier in 1928 than in 1927 because of increases in dried whole eggs, frozen whole eggs, and dried yolks.

The principal demand for eggs in the spring is for storage and for immediate consumption. Demand for eggs for storage was keen in 1928 and the price of eggs packed for storage reached a high level. Demand for immediate consumption was apparently sluggish throughout 1928 and was a factor in checking the usual fall advance in the price of eggs. An unprofitable season for storage operations followed; consequently demand for eggs for storage may be considerably less during the coming season particularly for the lower grades. Demand for immediate consumption apparently will be greater as the result of increasing employment during the past few months and the prospective continuation of this condition during the first half of this year at least.

Farm prices for eggs during most of 1928 were higher than during 1927. The favorable margin in 1928 gradually increased from about 1 cent per dozen in January to 6 cents in June; and then gradually decreased until, in October, prices were slightly lower than in 1927, then remained lower through the rest of the year. The fact that the farm price of eggs during the months of flush production in 1928 compared with previous years was higher and relatively higher than for the other months of the year, was significant. It enabled ordinary farm-flock producers to obtain relatively better returns for their year's production than those specialized poultrymen whose profits depend largely upon high fall egg prices, and upon high production during that season.

High egg prices in the fall and early winter months have in the past been due to the persistent demand for fresh eggs or eggs of comparable quality. Larger supplies in recent years of fresh receipts and high quality cold storage eggs during this season have resulted in a downward tendency in the prices of all grades of fresh eggs and, obviously, as such supplies become more plentiful during the months of normally low production, prices will tend to show a smaller seasonal variation.

Quality continues to be a factor of growing importance in the egg situation. Producers who make no special effort to market high-quality eggs in the fall and winter are likely to find that egg production at that season is becoming less profitable, compared with previous years. With new regulations for the sale of eggs on a quality basis, especially in retail channels, and more discrimination on the part of consumers, many dealers have begun to show a preference for the best packs of storage eggs whenever the current receipts of so-called fresh eggs have shown much irregularity in quality.

The present small reduction in the numbers of hens may affect egg production but this could be easily overcome by a favorable price situation for eggs which would encourage better care and feeding. With feed prices this spring likely to be no higher than a year ago it is probable that full feeding practices will be maintained. Information from the specialized egg-producing sections in the West indicate increased hatchings this spring.

The storage egg situation at the beginning of 1929 was unfavorable. Storage stocks of shell eggs were about 1,400,000 cases, approximately 60 per cent more than on January 1, 1928, but only 6 per cent more than the 5-year average. Stocks of frozen eggs were 56,000,000 pounds, or equivalent to approximately 1,700,000 cases of shell eggs, an increase of 19 per cent over last year and 67 per cent over the 5-year average.

Prospective supply and demand point to a price level for eggs during the season of flush production this year somewhat lower than that which prevailed during the into-storage period in 1928, but higher than during the corresponding period of 1927.

POULTRY

Dressed poultry receipts at the four markets were $3\frac{1}{2}$ per cent greater in 1928 than in 1927, running heavier in the early part of the year and lighter at the close. The 1929 receipts to January 22, were 5 per cent below those of the same period last year.

Live poultry receipts at New York, the principal live poultry market, were about 7 per cent, or 800 cars lighter in 1928 than in 1927, and this year, up to January 22, 1929, have run lighter than a year ago.

The trend in the price of poultry in 1928 as compared with 1927 was the opposite of the trend in the price of eggs. Farm prices of poultry during the first five months of 1928 were slightly lower than in the corresponding months of 1927, but during the remaining months of 1928 they were considerably more favorable than during the previous year, being about 3 cents per pound higher in September and remaining more than 2 cents higher the rest of the year.

Favorable prices for both live and dressed poultry are indicated during the first six months of the current year at least, because of the smaller stocks of poultry on farms, and the relatively low storage stocks. The supply of poultry available for market during the next six months is comparatively fixed and must come mainly from the stocks now on farms or in cold storage, since the influence of weather and of feeding is far less important with poultry than with eggs. Higher prices, however, might reduce consumption and stimulate broiler production and the sale of a larger proportion than usual of the laying stocks on farms. Moreover, if heavy production of chicks should occur this spring, and should demand decrease because of a possible slackening of business activity when this new supply becomes available for the market in the fall, poultry prices may become less favorable during the latter part of the year.

Poultry prices for the past several years have held up much better than have egg prices. If this relationship continues, some shifting toward more emphasis on the meat-producing side of poultry farming may be expected.

FEED CROPS AND LIVESTOCK

The apparent tendency of livestock producers to produce a greater proportion of the feed crops which they use on their own farms is an adjustment to secure greater net returns from their farm operation and will probably continue. A shift in farm practice, on the part of growers of feed crops for sale, to feeding an increased proportion of these crops on their own farms offers the only logical means of increasing their returns and of improving market conditions for feed grains and hay.

Production of feed grains in 1928 continued at the relatively high level of recent years in relation to livestock numbers. Production was about 4 per cent above what would have been produced on the same acreage with 10-year average yields. The average production of feed grains per animal unit (1 horse, 1 mule, 8 sheep and lambs, 5 hogs, 1.2 cattle and calves) during the 4 years, 1925-1928, was about 16 per cent above the average of the 4 years, 1921-1924. Hay production in 1928 was also slightly above what would have been produced on the same acreage with 10-year average yields. In relation to the number of hay-consuming animals, hay production has shown an upward trend for several years, although in 1928, it was 14 per cent below the record crop of 1927. The average acreage of feed grains for the last four years was the same as the average for the preceding four years, while the number of animals (expressed in animal units) on farms on January 1, 1926 to 1929 was about 9 per cent below the average number on farms from 1922-1925. The average acreage of tame hay during the last four seasons was about 2 per cent below the average of the preceding four years, while on January 1, 1926 to 1929, the number of hay-consuming animals on farms shows a reduction of about 10 per cent from the average number on farms from 1922-1925.

As a consequence of the greater production of feed-grains per animal unit, the present level of prices of feed grains is about 78 per cent of the level for livestock, when both are considered in relation to pre-war years. The present level of prices of hay is even lower. The continuation of this disparity suggests the probability that feeders of livestock are producing an increasing proportion of the feed which they use, while growers of feed crops for sale have failed to adjust their output to the reduced market demand. In the light of recent livestock-feed crop ratios, there appears little basis for expecting a readjustment to former practices on the part of livestock producers. Rather it seems that adjustment must be made by the growers of feed crops for sale. If acreages equal to those of 1928 are maintained and average yields are secured in 1929, the outlook is for a continuation of the disparity in the price level of feed crops considered in relation to the price level of livestock.

The problem of adjustments to be made in those sections where the bulk of the feed crops is produced remains. Greater net returns to livestock producers should follow from stabilizing of livestock numbers at no material increase above present levels, accompanied by slight reductions in feed-crop production

rather than from increasing livestock numbers to balance feed-crop production. For the farmers whose income has been largely from sales of feed crops and who do not have specialized markets, a further shift toward feeding on the farm appears to be the most logical means of increasing farm returns and of improving markets for feed crops.

HAY

Hay prices for the 1929 crop may not average so high as for the 1928 crop, but will probably be higher than those for 1927, if yields and quality in 1929 are average and if production is well distributed in the principal surplus-producing hay areas. Present high prices were caused principally by a shortage in the important shipping States, rather than by a reduction in the crop as a whole. Present relatively high prices for good quality hay may be expected to continue until the new crop becomes available. Alfalfa and clover hays of the best grades are now selling at the highest market price during the past five years and further price advances this spring are probable. The low quality of the crop east of the Rocky Mountains has increased the premiums paid for high quality hay.

Production of all kinds of hay in 1928 was about 108,000,000 tons, or 13 per cent less than in 1927, but only 1 per cent less than the 5-year average. There was, however, a large carry-over of nearly 18,000,000 tons from the record hay crop of 1927. In the important shipping States for timothy and clover hay—New York, Michigan, Ohio, Indiana, Illinois, and Missouri—the 1928 production was 25 per cent less than in 1927, and 15 per cent less than the 5-year average. The 1928 production of wild hay in the important shipping States of Minnesota, South Dakota, Nebraska, Kansas, Oklahoma, and Texas was 31 per cent less than in 1927 and 13 per cent less than the 5-year average.

Severe winterkilling of clover during 1927-28 resulted in a greatly reduced acreage, and the production of clover hay in the Central Corn Belt States was 30 per cent below the 5-year average. Production of alfalfa in all the important shipping States was about 9 per cent less than in 1927 but about 1 per cent above the 5-year average, although in Colorado, Kansas, Nebraska, and Michigan it was 16 per cent less than last year, and 5 per cent below the 5-year average.

The large carry-over of hay from the 1927 crop resulted in low hay prices early in the fall of 1928. The rise in hay prices during the fall and early winter of 1928 to the present relatively high level has been caused primarily by the marked decrease in the 1928 production of all kinds of hay in the important hay-shipping States, rather than by any general country-wide shortage of hay. The low quantity of the crop east of the Rocky Mountains has increased the premiums paid for high-quality hay. Current high prices for mill-feeds and concentrates tend to support the market for legume hays. Producers who have high-grade alfalfa and clover in storage, or producers in the Southwestern States who harvest alfalfa early, may expect a continuation of relatively high market prices until the 1929 crop becomes generally available.

Timothy hay, both as a market and as a farm crop, continues to decline in relative importance in the national hay crop. Receipts of timothy at 13 important markets for the 1927-28 season were 14 per cent lower than for the 1926-27 season and 29 per cent lower than the average for the 5-year period, 1923-27. An analysis of the long time outlook for timothy and other grass hays was made in the 1928 Outlook Report.

The 1928 production of all kinds of hay in the Southeastern States was only 2 per cent less than that of 1927, but 15 per cent greater than the 5-year average. The production of annual legumes for hay, especially soy beans, is steadily increasing in these States, amounting in 1928 to 2,066,000 tons, which was 15 per cent greater than the average production 1923-27. The increasing production of annual legume hay in the Southeastern States will meet, in part, the legume hay requirements of the dairy business, although a good market for limited quantities of northern and southwestern high-grade alfalfa will continue. Demand for northern hay is decreasing with the increasing production of forage in the Southeastern States, and with greater competition from the Southwestern States resulting from lowered freight rates from that area eastward.

Alfalfa acreage in Kansas, Oklahoma, and Nebraska has gradually decreased from 2,819,000 acres in 1920 to 2,174,000 acres in 1928, or a decrease of 23 per cent. No immediate recovery of productive acreage in this area is likely to occur, and a further decrease is possible, because of the probable spread of

bacterial wilt and because of other factors affecting the crop's growth. This decrease in acreage has curtailed the surpluses of alfalfa hay available in these States for marketing in the Southern States, and has thereby shifted a demand of considerable importance to the area of New Mexico, Arizona, and west Texas. The marketing of surplus alfalfa from southwestern areas in the southern markets has, in turn, diverted supplies which heretofore moved to the southern California markets, and thereby contributed to increased prices for California growers.

Specialization in dairy herd management and alfalfa hay production is apparent in the Pacific Coast States. The present human population in these States is slightly over 7,000,000, which is an increase of 26 per cent since 1920 and 68 per cent since 1910. This increase in population, chiefly in or near the cities, has created an extensive and expanding demand for fluid milk and the number of dairy cows and 2-year-old heifers in these States increased 18 per cent since 1919. Concurrently the alfalfa acreage has expanded 29 per cent since 1919 and 114 per cent since 1909. Most of this increase in acreage occurred in the interior areas of these States. Many specialized dairies have been established along the seaboard and close to the centers of population. As a result of these conditions an extensive commerce in alfalfa hay has been created between the interior hay-producing areas and the seaboard. Smaller quantities of mill feeds and concentrates, and greater quantities of alfalfa hay and meal, are used in the rations for dairy cows and poultry in these States than in the Eastern States. The demand of the feeders, therefore, is for high-grade alfalfa hay because of its relatively high protein content. The alfalfa hay supply of these States, however, includes much low-grade hay from certain areas which is not well adapted to dairy and poultry feed, and which brings low returns to many growers. Agricultural programs in these States might well give consideration to a general improvement in the quality of, and marketing practices for, the alfalfa crop.

The price of alfalfa hay in the stack in the Intermountain States is now higher than for two years, and is likely to continue at a higher level than in recent years, during the coming season, unless the 1929 production is above average in quantity and quality. The consumption of alfalfa hay for the maintenance of beef cattle and sheep has been increased the past season by poor range conditions and severe weather, and by high prices for these kinds of livestock. Increased consumption is likely to continue during 1929 because greater utilization of alfalfa hay normally takes place during periods when livestock prices are high.

An increase of approximately 13½ per cent on practically all hay freight rates from the East North Central and North Atlantic States to the Southeastern States, and between points within the Southeastern States, was authorized by the Interstate Commerce Commission in September, 1928. The Western Trunk Line Association and the Southwestern Freight Bureau have asked for substantial increases. Should such increases be made effective on the lines serving the alfalfa areas west of the Mississippi River they will materially curtail the shipment of alfalfa hay to the East North Central and Southeastern States, as well as within the States west of the Mississippi River.

Average yields and farm prices for corn, wheat, and alfalfa hay definitely indicate that the income of many farms in the North Central and Eastern States could be materially enlarged by an increased acreage of alfalfa wherever soil conditions permit. Premiums of \$5 to \$10 per ton above the prices for common-run hay are paid for high-grade alfalfa hay, so that, as a general rule, marketings of high-grade alfalfa hay yield a materially greater net income per acre than is possible from corn or wheat. In all alfalfa and clover areas there is a further opportunity to increase farm income by the adoption of practices that will improve the quality of these crops, either for local feeding or for market.

BROOMCORN

Prospective commercial requirements for broomcorn during 1929 appear to justify a small increase in acreage over that harvested in 1928. Since 1924 the trend of consumption in the United States and Canada has been consistently downward, and only about 45,500 tons were required for domestic commercial purposes and for export during the 1927-28 crop year, compared with about 61,200 tons taken for these purposes in 1924-25.

The 1928 acreage was about 15 per cent below the average of the past five years, but yields were unusually good, averaging 361 pounds per acre, and

the crop totaled about 45,500 tons. With average yields an acreage about 10 per cent larger than in 1928 would produce enough brush for prospective commercial requirements next season.

There are no indications that domestic and Canadian requirements during the coming season will be larger than in 1928 and a material increase in production over that of last year would probably bring lower prices for most types than were received for the 1928 crop.

Nearly 26,000 tons, including stocks on farms and in dealers' hands and manufacturers' stocks of raw and finished products, were carried over into the crop year beginning June 1, 1928. This, together with the 1928 production made a total supply of over 71,000 tons. If commercial requirements during the current season are no larger than last year, about the same quantity as last spring will be carried over into the next crop year.

Farmers outside of the established broomcorn districts, unless they have a local market, are at a material disadvantage in marketing their crop, since buyers usually visit only established broomcorn districts. In addition, broomcorn production requires special equipment. Unless a grower has had experience in growing and handling the crop, he is likely to produce broomcorn brush of low quality, which will not command a good price.

FEEDSTUFFS

Combined supplies of feed grains, feedstuffs, and hay are slightly larger than last year, and well above the average of the past five years. Prices of these commodities may be expected to hold generally steady until spring pasturage is available, since more cattle are on feed and prices of livestock and dairy products are generally favorable to a maintenance of relatively heavy consumption of concentrates, legume hays, and feed grains. Prices of mill feeds and concentrates are not likely to reach as high levels as in the spring of 1928, but legume hays, particularly alfalfa, will probably average materially higher.

Total tonnage of the principal feed grains for the 1928-29 season, including corn, oats, barley, and grain sorghums, was about 5.7 per cent larger than last year. Hay supplies were nearly 3 per cent more than the average of the past five years. A larger supply of by-product feeds than was produced last year is likely to become available during the season. The supply of corn on January 1 was slightly less than a year ago but the crop is of better quality than last year and is more uniformly distributed over the Corn Belt. About 25 per cent more oats were available on January 1 than a year ago, while the supply of barley at the beginning of the season was about 36 per cent greater, and grain sorghums nearly 4 per cent above last year's supply.

The total supply of by-product feeds and screenings for the 1928-29 season appears to be larger than a year ago. Production of wheat mill feeds does not vary greatly from year to year, and the offal outturn, though slightly larger to date than a year ago, is about equal to the average production. Prices of wheat feeds began their usual seasonal advance about the middle of August and on January 1 were about equal to prices a year ago. Prices for the remaining months, to the usual time when spring pasturage is available, will probably not advance to as high a point as in the spring of 1928, when they were unusually high, and indications are for a level not much lower than the present prices.

The supply of domestic linseed meal this season will be smaller than a year ago. The 1928 domestic flax crop is about 25 per cent smaller than the 1927 harvest. Crushings will probably be correspondingly smaller. Demand for linseed cake and meal during the first three months of this season has been urgent, and prices on January 1 were about \$10 per ton higher than a year ago. The seasonal advance has been similar to that of the past three years, but at a higher level. Prices for the coming six months will probably continue well above those of last year and above the average of the past three years.

The 1928 cotton crop indicated that about 625,000 more tons of cottonseed are potentially available than last season. This additional seed supply will yield about 230,000 tons of cottonseed cake and meal, but with the unusually small stocks at the beginning of the season, total supply may be only about 175,000 to 200,000 tons more than last year. Production of cottonseed cake and meal to date has been about equal to that for the corresponding period of last year, so that relatively large amounts of seed remain to be crushed.

Consumption of cottonseed cake and meal as feed will probably be slightly larger than a year ago, because of a shortage of legume hay and linseed meal and the small crop of feed grains in the Southern States. The price for the coming six months will probably not average as high as for the corresponding period a year ago, when there was an unusual advance in prices as result of depleted stocks caused by heavy exports early in the season.

A smaller total outturn of alfalfa meal seems probable this season with the supply of alfalfa hay suitable for meal materially lower than a year ago. Production of meal during July, August, September, and October was much above the output for the corresponding period last year. In November and December, however, production decreased materially and indications are that grindings for the remainder of the season may be smaller than last year. Prices have averaged higher than last season, reflecting the advancing hay prices and firm market for other feedstuffs. With alfalfa hay selling at the highest price in five years, continued firm quotations may be expected on alfalfa meal during the remainder of the season.

Utilization of corn in the process of the manufacture of starches, of which gluten feed and meal is a by-product, has been increasing in recent years. About 7.6 per cent more corn was consumed for that purpose in the past season than during the previous year. Production of gluten feed this season has been scarcely equal to trade requirements and the principal manufacturers have sold their output well ahead during most of this period. Resellers have had limited quantities to offer for immediate delivery and these have commanded unusually large premiums. From present indications, production will continue of good volume during the next few months, but prices are likely to remain relatively high.

Hominy feed is cheaper than a year ago as a result of a larger output and smaller exports this season. With the supply of corn practically the same as last year it seems probable that production of hominy feed during the remainder of the season may not be much different from last year, and prices are likely to hold steady.

POTATOES

Potato growers in nearly all parts of the United States suffered such terrific losses from overproduction in 1928 that there is little probability that an excessive acreage will be planted this season. Preliminary reports on the acreage which growers intend to plant indicate that, if the crop is given average care, production in 1929 may be expected to vary from 400,000,000 bushels about in proportion that growing conditions are more favorable or less favorable than usual. Considering the low cost of seed potatoes this season, this prospect need not discourage efficient producers of late potatoes, but it does not encourage speculative plantings. Heavy stocks now on hand will tend to hold down the price of new potatoes until the end of June, so prospects for southern growers are none too bright, even though their acreage is reduced around 25 per cent, as now seems probable.

Acreage planted to potatoes is so little dependent on weather conditions at planting time that the acreage planted has not usually differed far from what farmers report as intended. Two years ago the January reports indicated an intended increase in plantings of 13 per cent. Abandonment from flood, hail, and blight was rather heavy, and the increase in the estimated harvested acreage was 11.3 per cent. In January, 1928, an intended increase of 7 per cent in plantings was reported and the acreage available for harvest was increased about 10 per cent. Reports this year seem to indicate that growers are now planning to plant an acreage 11 per cent smaller than they planted last year, indicating the probability of a harvested acreage slightly below that of 1927. As this indicates about average prospects, there is no reason to expect farmers to make material changes in their plans between now and planting time.

In estimating the acreage of potatoes needed next season, allowance must be made for the upward trend in yields that is resulting from more intensive methods of production. If average weather conditions are experienced this season, and yield follows the trend of recent years, a yield of about 117 bushels per acre must be expected. If this yield is secured on an acreage 11 per cent below that available for harvest in 1928, production will be around 400,000,000 bushels, and supplies after July 1 will be about equal to the average during the last 10 years. In considering prospects for next year it should, however, be borne in mind that yields have often been relatively low when seed has been cheap and potato

growers discouraged. This year farmers are planning to use a little more seed per acre, but the crop may not receive the usual attention.

While the indications of intended acreage are, of course, only approximations, they are sufficiently uniform to indicate that the principal reductions in acreage are to be expected in the early States, in the commercial sections of the second-early States, that is, Virginia, Maryland, Oklahoma, and Kansas, and in the important potato area extending from Michigan to North Dakota. Substantial reductions are also to be expected in Idaho and Colorado. Maine reports a decrease of about 8 per cent and New York a decrease of 4 per cent, but there are as yet no indications of any reduction in the acreage in Indiana, Ohio, Pennsylvania, and West Virginia. Nebraska, South Dakota, and a few other scattering States are planning slight increases. On the whole, the acreages reported as intended in the late potato States seem well balanced. The Eastern States indicate only slight reductions in the intended acreage of late potatoes, for yields there have been increasing, and, because of the local markets, commercial growers seem to have succeeded in securing fair returns even in some years of rather low prices. This large acreage close to the markets justifies the decreases reported as intended in the commercial late potato areas farther west, where the depression this season is most severe.

The early potato States that market before July have a real problem this year. On January 1 merchantable stocks in hands of growers and local dealers were close to the record January holdings of six years ago, being estimated at 131,000,000 bushels compared with about 100,000,000 bushels last year. To permit early potatoes to sell to advantage in competition with these storage potatoes, production must be reduced sufficiently to keep early potatoes in a luxury class. This was accomplished in the springs of 1923 and 1925, but, in each case, a radical reduction in acreage was necessary. This year, growers in these early States apparently intend to decrease their acreage about 25 per cent. Such a reduction would relieve the situation somewhat, but would still leave prospects somewhat less favorable than usual.

SWEET POTATOES

The principal sweet potato areas are facing the probability of increased production this year. The important commercial sweet potato area which extends along the Atlantic Coast from Virginia to New Jersey secured an exceptionally heavy yield last season from a fairly large acreage, yet the sharp reduction in the southern crop helped them secure a relatively good price, considering quality. White potatoes grown in the same area were decidedly unprofitable and in reducing their white potato acreage growers in the Eastern Shore area are likely to shift too heavily to sweet potatoes this season. Some increase in the commercial sweet potato acreage of Tennessee is also probable.

The bulk of the sweet potato crop is grown for farm consumption and local markets in the Cotton Belt. Last year partly as a result of weather conditions the acreage was sharply decreased, the yield was rather low, and the price improved somewhat. This year with average weather conditions, a moderate increase in acreage and some increase in yield are to be expected, but nothing in the situation indicates the probability of such serious overplanting of sweet potatoes in southern sections as occurred in 1927.

DRY BEANS

With domestic consumption of beans apparently increasing at the rate of over a half million bushels annually, it appears that our present needs are in excess of 18,000,000 bushels and that the 1928 domestic crop of about 16,600,000 bushels is below such needs. An average yield in 1929 on an acreage 10 per cent greater than that harvested in 1928 would produce about the supply needed, provided such increased acreage is properly apportioned among the different classes, according to demand. Present price levels for beans will tempt to an excessive increase in acreage this year. An acreage increase materially above 10 per cent, especially if yield should be much above average, would incur the danger of a surplus that might put the market on an export basis with resulting drastic price reductions.

The 1927 crop of about 16,200,000 bushels was not sufficient for domestic needs, and net imports for the year ending June 30, 1928, were 1,784,000 bushels, the largest since the World War. Development of a shortage in the domestic

supply was followed by sharp advances in the prices of most of the commercial classes of beans early in 1928, which have been well maintained, with further advances in many varieties through the 1928 crop marketing season to date. A shortage abroad has contributed materially to the high price level.

Although the harvested acreage of dry beans in the United States as a whole was practically the same in 1928 as in 1927, there was considerable shifting of the total between States. In California, for example, the harvested acreage in 1928 was about 15 per cent, or 46,000 acres, less than in 1927; in Michigan and New York, the principal pea-bean producing States, there was a net reduction in combined acreage of about 4 per cent or 23,000 acres; in Idaho, Montana, and Wyoming, producing mostly the great northern, total harvested acreage was increased 21 per cent, or 26,000 acres; in the pinto producing States of Colorado and New Mexico the increase was 10 per cent, or 47,000 acres. These shifts were affected by varying percentages of abandonment of acreage.

Production of pea beans, mostly in Michigan and New York, was 5,447,000 bushels in 1928, compared with 4,558,000 bushels in 1927 and 6,320,000 bushels, the average for the five years 1923-1927. Following the heavy production in 1925 the average price to producers in Michigan declined to 3.7 cents per pound in the spring of 1926. With the commercial supply reduced by heavy losses from damage in 1926, and with the short crop of 1927, the Michigan price to producers advanced to 8½ cents per pound in the spring of 1928. Although the production of this class was increased about 20 per cent in 1923, the Michigan December price to producers was still around 8 cents per pound. With such a price level, producers will be strongly tempted to increase unduly the acreage of this variety. Thirteen per cent increase in acreage in 1929 with average yields would produce a total crop about equal to the 5-year average. Although a fairly substantial increase in production appears justifiable, a recurrence of the situation following the 1925 crop should be carefully avoided.

Great Northerns, direct competitors of pea beans in the wholesale grocery trade, are also in a fairly strong position. Prices have advanced along with those of pea beans, although production in 1927 and 1928 was higher than in any preceding year. The average farm price for Great Northerns on December 1, 1928, was about 2 cents per pound higher than that on December 1, 1927, but still about 1 cent per pound lower than that for pea beans. Yield per acre in the three principal producing States named was 16.7 bushels in 1928, compared with a 5-year average of 18.1 bushels. Any increase in the acreage in 1929 over the large acreage of last year would entail risk unless the growers consider the production of this crop justified at prices much below present levels.

The estimated production of limas in California in 1928 is 2,210,000 bushels, a decrease of 3 per cent. The estimated carry-over of limas into 1927 was about 400,000 bushels, while that into 1928 was less than 40,000. About 2,600,000 bushels of limas and baby limas disappeared into the channels of trade during the 1927-28 season. With average yields, acreage would have to be increased about 20 per cent over last year to produce that quantity. The much higher prices being received for limas will tend to stimulate larger plantings and a considerable expansion in acreage on nonirrigated land may occur if moisture conditions are favorable. The present prices result from a shortage in limas, coupled with a general bean shortage, a situation not likely to exist when this year's crop is marketed. Nevertheless, a moderate increase in the acreage, assuming average yields, is not likely to cause prices to drop to unprofitable levels, though some decline must be expected if production is increased. The chief danger lies in an extreme expansion of acreage such as occurred in 1926.

The pinto acreage harvested was 10 per cent larger in 1928 than in 1927, but yields were about 25 per cent below average. The present price levels for pintos result partly from the high general price levels for beans. Further acreage increases might easily result in price recessions such as occurred in 1925-26.

The California red bean is in excessive supply because of an extreme expansion of acreage in Idaho. The supply of red kidneys and most other colored beans seems to be adjusted to the consumptive requirements of the respective classes in this group; apparently changes in the acreage of these for 1929 should be made only if such change is considered desirable in the readjustment of the acreage of competing crops on individual farms.

CABBAGE

The immediate market outlook for old cabbage and for the early cabbage crop is favored by the light holdings in northern storage, but if intentions of heavy plantings of southern cabbage are carried out prices will be reduced.

Last season the early and second-early area, from Florida and Texas north to Virginia, had a medium yield per acre and prices generally higher than the year before. The usual tendency after such conditions, and following a light northern crop, has been to expand the southern cabbage plantings. Florida seems to be growing the largest acreage in five years and Texas the second largest in that period. It is expected that old cabbage will be cleared out promptly. If the main southern season starts early, if the yield proves moderate, and if the new crop moves to market gradually, affairs may go smoothly, even with the larger acreage in the earliest shipping States, but prospective gains appear likely to reduce returns in the sections shipping a little later.

In the second-early area, seven leading States—Alabama, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, and Virginia—have planned a total acreage exceeding that of any recent year, and doubling the area planted five years ago. Increases of 25 per cent or more as compared with last season in Alabama, South Carolina, and Virginia seem likely to result in reduced returns in late spring and early summer. A reduction of at least 1 acre in 10 as compared with intentions in the second-early region would bring the planting within safer limits.

The intermediate area, from New Jersey and Maryland westward to the central-Mississippi Valley, passed through a rather unsatisfactory season in 1928, with light to medium yield from a larger acreage and with average prices one-third lower than for the year preceding. The tendency to increase the plantings south of this area, with possibility of severe general market competition, suggests a return here to the 4 or 5 per cent lighter acreage of 1927.

Northern main-crop cabbage should be held close to last season's moderate plantings. The reduction of about 10 per cent in 1928 brought the acreage down to 57,000 acres, a little under the 5-year average. This average (about 60,000 acres) under usual growing conditions has provided as ample supplies as can be disposed of at profitable prices. The cabbage market is easily upset by sharp changes in volume of production.

No further increase of acreage for kraut seems called for this season, after four years of steady expansion. The 8 per cent gain of last season was more than offset by the light yields in New York, Michigan, Ohio, and a few other centers of the kraut industry. With average weather conditions, an average yield from the nearly 15,000 acres harvested in 1928 would have produced only about 10 per cent less than the excessive crop of 1927, which resulted in comparatively low prices and a heavy carry-over of the manufactured product.

LETTUCE

After several years of extremely rapid expansion of lettuce acreage, the point has been reached at which a substantial immediate increase seems undesirable, particularly in Western States, until the market develops greater capacity.

Lettuce has shown more rapid gain in production during recent years than any other vegetable crop. Plantings have doubled in five years, and are now more than seven times the acreage of 10 years ago. Danger of overproduction seems greatest in California and Arizona, where the industry has been expanded most rapidly. These States, with Colorado, raise about five-sixths of the lettuce crop. Shipments are now approximately 50,000 carloads a year and are exceeded only by the potato movement.

In seasons of high production or ordinary quality the returns to the growers are less favorable, as was the case in Imperial Valley of California in 1926-27. Two years ago large quantities of lettuce produced in Imperial County, California, were not shipped because of unfavorable market conditions. On the other hand, last season's cut of fully one-third in the lettuce acreage of Imperial Valley was attended by a gain of over \$1,000,000 in farm value of the crop in that section, and a 20 per cent lighter acreage in the other main shipping areas resulted in prices fully 10 per cent higher than the year before.

This season, the tendency has been toward larger acreage. Plantings in four early shipping States (Imperial Valley of California, Arizona, Texas, and Florida) show an increase of 25 per cent over last season, with a corresponding gain in the expected production.

In the late-crop area, including Colorado, Idaho, Wyoming, New Mexico, Oregon, and Washington in the West, and New York, New Jersey, and Pennsylvania, in the East, growers should resist any general tendency to exceed last season's more moderate plantings. In that area, acreage averaged one-fifth less and production one-fourth lighter last year than in 1927. Prices were correspondingly higher as a rule, except where crop injury occurred. Most of the reduction last season in the eastern lettuce area was in New York, where nearly one-third lighter production brought nearly double the average price per crate, as compared with 1927. Probably the chief danger in the late lettuce area is the possibility that the Rocky Mountain States and New York, which showed most of the acreage reduction last season, may return to the over liberal 1927 planting.

ONIONS

Any increase in acreage in the late-main or northern onion area, above the close-to-normal acreage of last year, would probably result in lower prices in 1929. Onion shortage of the past season was the result of a yield per acre nearly one-fourth lighter in this main-crop region rather than the 10 per cent cut in acreage. The area planted there was still as large as in most other seasons and near the 5-year average. Danger of overplanting the northern crop in 1929 seems greatest in such producing sections as central California, Colorado, Idaho, Minnesota, and Iowa, which had generally light acreage but fair-to-good yield, attended with rising prices. Northeastern growers, after their small, rather poor crop and unsatisfactory returns for several years, with low returns, seem unlikely to increase acreage, notwithstanding the high market prices for good quality onions in 1928.

In the midseason shipping area, including Virginia, New Jersey, Kentucky, and northeastern Texas, any increase would be still more dangerous; a reduction of at least one acre in five, in northeastern Texas, would help the market prospect for early summer. Growers in these sections planted liberally last year and sold at prices approximately the lowest in recent years. They will again face severe competition at both ends of their marketing season, with possibly heavy production North and South, offset to some extent by the restrictive tendency of the increased tariff on imports.

Early southern plantings of Bermuda-type onions approach 25,000 acres and exceed the extremely large area planted in 1928. Onion acreage is large enough in southern California, Louisiana, and especially in Texas, to suggest a prolonged marketing season and a need for careful handling of shipment and distribution. Early marketings will be favored by the unusually light supply in northern storage and by the 50 per cent higher tariff rate which may tend to limit the usual heavy spring imports from Egypt.

FRUITS

The production of leading fruits and melons in 1928, which was a year of generally favorable weather conditions, amounted to more than 14,000,000 tons. While below the record production of 1926, the crop was about 13 per cent greater than the average production during the preceding five years and 28 per cent greater than the light crop of 1927. As a result of the excessive production in 1928, large quantities of peaches and grapes were not harvested. The marketing of the combined large crops of apples, pears, citrus fruits, strawberries, and melons has presented difficult problems. Indications are that fruit production in the United States during the next few years will show a gradual increase from the average of recent years. The outlook is for continued keen competition among the various fruits, and for low prices in seasons when growing conditions are unusually favorable. Imported fruits, particularly bananas, are important in our market supplies. Banana imports have shown an upward trend during the last five years and in terms of carloads have exceeded the carload shipments of apples for the same period.

Although occasional overproduction has always been one of the problems of the fruit grower, the present situation is partially the result of the overplanting of certain fruits during periods of high prices. In some areas plant-

ing has also been artificially stimulated by those who had land for sale or were otherwise financially interested. Heavy losses are experienced when an excessive acreage is set to fruit trees and future market prospects should always be considered by those who contemplate fruit plantings.

Consumers are more discriminating than formerly in their fruit purchases. High-quality fruit of desired varieties sells at substantial premiums over fruit of inferior quality.

CITRUS FRUITS

The 1929 outlook indicates, as did those of the three previous years, a considerable increase in the bearing acreages of grapefruit and oranges. Many trees now in bearing have not reached the age of maximum yield and a large increase over production in recent years may be expected in years when favorable growing weather prevails. Under these conditions price levels below those of recent years may be anticipated. The bearing acreage of lemons has not shown any pronounced change since 1921; a slightly downward trend is now indicated, but production is on a high level and the industry has been confronted with difficult marketing problems.

The forecast of bearing acreage of oranges in California indicates only a small increase during the next three years. The 1928 bearing acreage in California is estimated at 187,000 acres, whereas the 1931 bearing acreage is forecast at 192,000. Practically all of the increase in bearing acreage in that State will be Valencias, which are shipped from May to October. Although only 11 per cent of the total orange acreage of about 210,000 acres in California is not of bearing age, both Florida and Texas have large acreages in nonbearing trees. Assuming an average of 70 trees per acre, total acreage in Florida is estimated at 195,000 acres, compared with 13,600 in the Lower Rio Grande Valley of Texas. In Florida about 20 per cent is nonbearing, whereas in Texas about 80 per cent is of nonbearing age.

Exports to Great Britain in 1928 (150,000 boxes) were less than in 1927, largely as a result of the favorable market situation in the United States. As usual, most of the shipments were made during the summer months when there is less competition from other sources. In this connection, the large increase in the British takings of Brazilian oranges is significant. Imports into Great Britain from Brazil, which compete with American oranges during the summer and fall months, amounted to about 130,000 boxes in 1928 compared with only 28,000 in 1927.

Florida, with a total grapefruit acreage estimated at 80,000 acres, has approximately 93 per cent of bearing age. The Lower Rio Grande Valley of Texas, with about 43 per cent as many acres as Florida, is estimated to have about 20 per cent of bearing age. The California bearing acreage is given as 7,800 with a forecast of 10,200 bearing acres for 1931. Of the 3,200 acres in Arizona, only 1,200 are in bearing. In Porto Rico, where the acreage is estimated at 3,760, the hurricane last fall destroyed almost the entire crop of 1928-29 and may adversely affect production for 1929-30.

Popularity of grapefruit is still on the increase in Great Britain. Total United States exports of grapefruit, which include the Porto Rican fruit, were somewhat less in 1928 than the relatively high figure reached in 1927, but this was because of a decline in shipments of Porto Rican grapefruit as a result of the hurricane. Supplies of grapefruit on the British market have been liberal during recent weeks and prices have been low, resulting in the introduction of the fruit into many homes where it had not been used before and may stimulate future consumption.

In view of the possibilities of increased orange and grapefruit production, growers should regard the lower price levels in prospect for the 1928-29 winter season as more typical of prices to be realized under favorable production conditions during the next few years than were the higher prices which prevailed for the smaller crop of 1927-28.

In California, where practically the entire lemon industry of the United States is located, recent production has been so great that difficult marketing conditions have resulted. The bearing acreage has not changed greatly since 1921 although the slightly downward trend which began in 1926 is expected to continue for the next few years. Indications are that production is now at about the peak. Imports, chiefly from Sicily, have averaged nearly 1,000,000 boxes during the last five seasons, which is about one-fifth as large as the annual domestic shipments. During pre-war years a much larger quantity was im-

ported annually. The average for the five seasons ended in 1914, more than 2,000,000 boxes, was about one-third greater than the average domestic shipments for the same seasons. No pronounced trend in lemon production in Sicily is evident. If prices of fresh lemons and by-products in Sicily continue on the same level, or on a higher level than in recent years, it is only a question of time before there will be an increase in production.

APPLES

Commercial production for the country as a whole will continue at a high level and probably will increase over a period of 5 or 10 years. The rate of increase is likely to be lower than during the last 10 years, but with the large number of trees now in commercial and small farm orchards the possibility of heavy production and low prices will continue. Over a period of years, however, commercial growers who are favorably located and who produce fruit of high quality at low cost may view the future with some optimism, if plantings in general are confined to those needed for replacement purposes. The future appears to be no brighter than the past for growers whose returns have been low because of poor varieties, or because of poor location with respect either to market or to growing conditions. Commercial plantings appear to be justified only where unusually favorable conditions exist for the economical production of good quality fruit.

Recent plantings show a decided shift toward the higher quality varieties in response to consumers' demand. The large numbers of young trees of some of the popular varieties such as the Delicious, McIntosh, Jonathan, Stayman Winesap, Winesap, and Yellow Transparent, foreshadow increasing production of these varieties for several years. Production from these six varieties constituted 43 per cent of the market supplies in the 1926 season, according to a survey in 41 cities. Recent plantings of some of the older well-known varieties, and of many of the minor varieties, have been light.

A recent tree survey made in 22 of the important apple States, which produce about 80 per cent of our apples, indicates that between 25 and 30 per cent of the trees in commercial orchards were planted during the last 8 years, and that 65 to 70 per cent were planted during the last 18 years. A relatively large number of the trees in commercial orchards are in the more favored sections, and there have been noticeable recent tendencies toward improved methods of production. These movements will probably tend to increase the bearing life of orchards during the next several years. Based on this assumption it seems likely that the present number of young trees is sufficiently large to bring about a material increase in commercial production during the next 5 to 10 years, unless apple prices are so low as to cause neglect of the trees in some areas where costs are high or quality is low.

A large part of the increase in commercial production of the last 10 or 15 years was the result of heavy plantings in the boxed-apple States. In this region, production increased from about 19,000,000 bushels per year during the period, 1909-1913, to about 54,000,000 bushels annually during the years, 1924-1928. Present indications are that apple production in the Northwest is near its peak. Production was only slightly higher during the last 5 years than during the previous 5 years; in 1925 there were only one-fifth as many trees not of bearing age as there were 15 years previously; recent plantings probably have not been sufficient to maintain the number of trees in this region.

In the barreled-apple States, as a whole, recent plantings have been fairly heavy. About two-thirds of the commercial trees were planted during the last 18 years, and nearly one-third were planted during the last 8 years. If the trees are given reasonable care, the bearing capacity of the commercial orchards will probably continue to increase over a period of years. This increase may be partially offset by the abandonment and pulling out of the older farm orchards and less popular varieties.

Outstanding examples of recent heavy plantings of specific varieties are found in the case of the McIntosh, the Delicious, the Stayman Winesap, and the Yellow Transparent. Trees of these four varieties probably constitute one-fifth of the commercial apple trees in the important apple-producing States. About half of these trees were planted during the last 8 years, and from 90 to 95 per cent were planted during the last 18 years. Winesap, Jonathan, and Rome Beauty have been extensively planted. Trees of these varieties probably constitute another fifth of the trees in commercial orchards. About one-quar-

ter of these trees are under 9 years of age, and 75 to 80 per cent were planted during the last 18 years. With reasonable care, it is likely that production of most of these varieties will increase decidedly during the next several years.

Among the older fall and winter varieties, Ben Davis is declining, only 7 per cent of the trees of this variety throughout the important apple States having been planted during the last 8 years. Only light plantings of the York Imperial have been made during this time. Baldwin, Northern Spy, and Rhode Island Greening have been planted only moderately during recent years. Many other less important varieties are giving way to the more popular varieties.

Exports of the last five crop years have averaged about 13 per cent of the United States commercial crop. Continental European markets for American apples have become increasingly important in recent years, and with the more stabilized economic conditions now prevailing, should provide increasing outlets. On the other hand, little expansion in the British market is to be expected in the near future in view of the depressed industrial conditions and the large number of unemployed in some of the major industries.

For the remainder of the 1928 crop season the outlook is for continued strong competition on domestic markets. The 1928 commercial apple crop was 36 per cent greater than that of 1927 and 9 per cent above the average of the previous five seasons. Cold-storage holdings on January 1 were 30 per cent greater than on January 1, 1928, and 8 per cent above the 5-year average for that date. This larger supply will meet greater competition on the markets than last season from larger crops of oranges, grapefruit, and pears.

The export outlook for the spring months of 1929 in European markets is favorable. Exports for this season through November totaled about 9,000,000 bushels and were about 64 per cent greater than for the same period last year, because of the larger American crop and short supplies of European apples. Indications are that the apple crop in Australia and New Zealand will be lighter than last year, which will mean less competition for American apples in European markets during the spring.

PEACHES

The outlook is for continued heavy production of peaches for the next few seasons, whenever weather conditions are favorable. In the South production for the present cycle is probably near the peak. Extremely heavy production is likely to continue for several years in California, and, until production reaches a considerably lower level in both these areas, continued difficult marketing conditions may be expected. In California the prospective increase in production during the next few years will be in the clingstone (canning) varieties whereas the production of freestone varieties is expected to decline. In other commercial fresh peach areas, on the whole, recent new plantings have been moderate, and no large increases in production under normal weather conditions are anticipated in the near future.

Peach production in the South has increased greatly in recent years. The extent is indicated by the carload shipments from seven important Southern States, which averaged 68 per cent more for the last four years than for the previous 4-year period. The peach tree survey of 1925 indicated that two-thirds of the commercial trees in these seven States were not over 5 years of age. The majority of this group is now not far from the maximum bearing age.

In some southern districts, particularly in Georgia, many of the poorer orchards have been pulled out or abandoned. Plantings in recent years have not been sufficient to replace trees eliminated. Disease, neglect, and age have reduced the productive power of many trees. Much of the tree mortality in Georgia has occurred in the southern part of the belt, from which the earliest shipments are made, whereas in the north central part of the State there may be some further increase in production.

Indications are that some reduction in bearing acreage in the Southern States will continue, and that as the large number of trees now in their prime decline in productivity, a considerable decrease from present bearing capacity will result. Looking forward four or five years, southern growers who are situated advantageously with respect to production and marketing facilities may expect more satisfactory returns than those of recent large crop years.

In other fresh peach-producing areas such as the Middle Atlantic, Middle Western, and Mountain States limited plantings sufficient to maintain the

present bearing acreage seem advisable. In some districts in these areas certain factors, such as roadside markets and motor-truck transportation, have changed methods of marketing the crop. Some shifts in producing districts and in varieties in these areas might be desirable because of local marketing conditions or local production hazards.

The 1928 California crop was about one-fourth larger than the heavy crop of 1927. As in 1927, a large quantity (estimated at about 11 per cent of the 1928 crop) was not harvested, or not utilized, in 1928 because of marketing conditions. Continued heavy production is in prospect for the next few years. Although California peaches are used principally for canning and drying, they have been shipped as fresh fruit to eastern and mid-western cities in considerable volume when prices in those markets were high enough to encourage such shipments.

During the next few years when the profit from peach growing in many districts is likely to be uncertain, growers and shippers will do well to make every effort to produce and market high-quality peaches. When market supplies are heavy, peaches of poor quality and condition, and of small size, often fail to pay transportation charges and may depress the price of the better fruit. Proper cultural and grading practices are especially important at this time.

GRAPES

Conditions in the grape industry continued unsatisfactory during the past year. Heavy production in the West is in prospect for the next several years. It appears that any probable immediate increase in consumption will be too limited to help in marketing the crop unless aided by an immediate reduction in acreage, particularly in California. The high point of consumption established in 1927 was maintained in 1928, but at much lower prices.

The California situation overshadows that in all other sections, because approximately 90 per cent of the grapes are produced in that State. Although the production in California in 1928 was 3.2 per cent less than in 1927, increased production in Eastern and Middlewestern States more than equaled the decrease in California. In the other grape States production in 1928 was 53 per cent greater than in 1927. Carload shipments from California were about 4,600 less than in 1927, when the movement reached nearly 76,000 cars, but tonnage shipped was approximately the same because of an increase in the minimum carload weight. Only unfavorable weather conditions in California prevented the crop in that State from exceeding the 1927 production. Low prices in 1928 caused 153,000 tons, or over 10,000 carloads, to remain unharvested. The tonnage of grapes used for raisin production was 12 per cent less than in 1927, but about the same tonnage of raisin varieties was shipped fresh in 1928 as in 1927.

The limited plantings in California during 1928 will probably be offset by abandonment and destruction of vineyards, but it is doubtful if any decrease in bearing acreage will be sufficient to curtail total production during the next few years. Considerable reduction in acreage would be needed to offset the 153,000 tons which were not harvested in 1928. The heavy set on the vines in 1928, coupled with heavy crops and lack of care for the last few years, may reduce the yield in 1929.

In the Eastern and Middlewestern States the fairly heavy crops in 1928 were marketed at low prices. New York, Pennsylvania, Ohio, Michigan, Missouri, and Arkansas had 62 per cent more grapes than in 1927, a year of low production. As records show that most years of heavy production in these States have been followed by years of relatively light production, it is probable that the 1929 crop in these sections may be lighter than the crop of 1928, but for some years Eastern and Middlewestern sections will continue to feel the competition of the heavy California supply.

The relatively high consumption will probably be maintained and because of special efforts to improve distribution and develop new uses, consumption may be increased slightly. However, such relief as may be secured is not likely to overcome the difficulties of marketing the entire crop at satisfactory prices. An immediate reduction of bearing acreage seems to be the surest method.

STRAWBERRIES

Acreage of strawberries in the early and the late shipping States, where there is only limited competition, does not appear to be excessive, and market prospects in those areas are fairly good. The principal trouble with the

strawberry situation seems to remain in the second-early and the intermediate States, where acreage and production are still in excess of market requirements. A general reduction of about 20 per cent in commercial acreage in these mid-season sections appears advisable, if returns to growers are to be more favorable than in recent seasons. Further immediate expansion will be particularly dangerous in the Ozark region and in eastern States from Virginia to New Jersey.

Although the 1928 acreage was slightly greater than that of 1927 in the early and the late strawberry States, average farm prices in those sections were maintained at the 1927 level. An increase of 14 per cent in acreage of the second-early States was accompanied by a decline of 14 per cent (or 2 cents per quart) in average farm price for that territory. Likewise, a 4 per cent increase of acreage in the intermediate group was accompanied by a decline of 29 per cent (or 4 cents per quart) in the average farm price there.

The 1928 strawberry crop of 325,000,000 quarts was the largest ever produced, exceeding that of 1927 by 4,500,000 quarts. The extremely low prices of 1928 were caused by a concentration of about 70 per cent of the shipments within four weeks. Fully half the movement of the crop usually occurs within four weeks at the peak of the season, when the second-early and intermediate States are most active, but the excessive market congestion which occurred last year may not be repeated in 1929.

Among the early shipping States in 1928, Louisiana had an exceptionally profitable season, although a heavy yield resulted in a crop twice as great as the light crop of 1927. This success was partly due to the lighter production in Florida, to the good quality of Louisiana berries, and to the great delay in movement from succeeding States. Alabama had more acres in strawberries and a much heavier yield than in 1927, but had a slightly higher average price. Preliminary reports indicate a 10 per cent increase over the 1928 acreage in the early States as a group, with Louisiana showing a 4 per cent increase.

The second-early group (southern California, Arkansas, Tennessee, Georgia, South Carolina, North Carolina, and Virginia) had a huge crop of 96,000,000 quarts last season from a liberal acreage. Unfavorable weather in some States affected quality, and the overlapping of the Louisiana season upon heavy movement from the second-early group resulted in generally lower prices. The proposed acreage reduction of 9 per cent, as reported by growers in this territory, should improve the 1929 market, but, with normal yields, will scarcely be a sufficient reduction to restore farm prices to a favorable basis.

The 1928 acreage in intermediate States (Maryland, Delaware, New Jersey, Kentucky, Illinois, Indiana, Iowa, Missouri, Kansas and parts of California) was also greater than that of 1927, but lower yields per acre resulted in a lighter total crop (105,000,000 quarts). In some States the quality was below normal. Missouri had a bumper crop of 28,000,000 quarts. Farm prices in this group were below those elsewhere, and ranged from an average of 7 cents in Maryland to 15 cents in Iowa and California, the average for the group being only 10 cents. Preliminary reports indicate a probable reduction of 11 per cent in acreage of the intermediate group this season, but further curtailment seems essential, if prices are to be restored to the more favorable levels which prevailed prior to 1924.

The late strawberry States (New York, Pennsylvania, Ohio, Michigan, Wisconsin, Utah, Oregon, and Washington) meet little competition. Lighter yields per acre reduced the 1928 crop in this territory to 69,000,000 quarts, about 9,000,000 less than in 1927. Prices generally were good, but there seems to be little reason for expanding the acreage in these States.

CANTALOUPE

In general about the same cantaloupe acreage for the United States as a whole as in 1928, with a few sharp local adjustments, will give satisfactory results this season, assuming average growing and marketing conditions.

The earliest cantaloupe shipping sections (those in California and Texas, together with Florida and Georgia) marketed their crops at higher average prices than in 1927. The acreage of these sections seems fairly well adjusted to market requirements for average conditions, and probably could be maintained.

The intermediate shipping area suffered from a serious depression of prices last summer, the result of heavy production, liberal supplies of fruit, and

overlapping of seasons. A reduction of acreage in central California of not over 15 per cent would probably give most favorable results. In 1928, with an acreage approximately 30 per cent larger than in 1927, and with heavy yields per acre, prices were unprofitably low throughout the season. The acreage in the other mid-season sections of Arizona, Nevada, Texas, Oklahoma, Arkansas, Illinois, Indiana, South Carolina, North Carolina, Maryland, and Delaware probably should be maintained. Much of the trouble in these sections last year came from the exceptionally heavy production in central California.

The late shipping area (New Mexico, Colorado, Nevada, Washington, Kansas, Iowa, Michigan, Tennessee, and New Jersey) seems justified in holding to last year's acreage, which was 17 per cent less than in 1927. With the possibility of reduction in cantaloupe acreage in other sections and with probably less competition from other fruits, the market outlook should be favorable in 1929, if the acreage in this area is not increased.

Increasing attention is being given in western States to Honey Dew and other miscellaneous melons, which have been bringing fairly high returns, partly because of their longer shipping season and better keeping qualities. Movement of this class of melons last year increased about 50 per cent to 9,225 cars, or nearly one-third as many as the shipments of cantaloupes will do well. Growers who contemplate any expansion in acreage of cantaloupes will do well to remember the increasing competition of these other varieties of muskmelons.

WATERMELONS

Unless watermelon acreage is reduced from 10 to 20 per cent below that of 1928, an average yield in 1929 is likely to result in unsatisfactory prices. An average cut of about 15 per cent would limit the producing area close to the more moderate acreage of 1927 and still yield an average crop in an average season.

Last year, fortunately, the largest plantings in many seasons were offset by highest yields in several years. Otherwise some shipping sections of the Southeast would have fared worse than they did, with the handicaps of a cool summer, a late overlapping market season, and a liberal supply of early fruits.

The earliest shipping sections (Florida, Texas, and Imperial Valley of California) had a fairly prosperous season, with a light yield, but with prices considerably higher than the year before. As the season moved northward, yields continued light to medium in Georgia, Alabama, Mississippi, and the Carolinas, but the total supply was liberal, demand was unsatisfactory because of cold weather, and prices were comparatively low. The farm price for South Carolina melons dropped to \$94 per carload, compared with \$168 in 1927, while decreases in the 1928 farm price of \$20 and \$13, respectively, occurred in Georgia and North Carolina. A reduction of about 10 per cent in the southeastern watermelon acreage seems advisable.

Among the late-shipping States (including parts of California outside the Imperial Valley and the shipping sections in Washington, Colorado, Oklahoma, Arkansas, Missouri, Iowa, Illinois, Indiana, Virginia, Maryland, Delaware, and New Jersey) a production heavier than in 1927 was obtained in all except Oklahoma and Maryland. Missouri showed the largest acreage increase and a 60 per cent increase in production, compared with that of 1927. The result of the generally heavy late shipments was a decline of 20 per cent in the average farm price. A reduction of acreage, averaging nearly 20 per cent, seems desirable in this region, bringing the plantings back near the 1927 figure.

PEANUTS

A 50 per cent increase in the tariff rate on shelled peanuts, and nearly that much on unshelled, was authorized on January 19, 1929, raising the duty from 3 to 4½ cents per pound on unshelled, and from 4 to 6 cents per pound on shelled peanuts. Even with this advance in effect, probably not more than 25 per cent increase in the production of large-podded, Virginia-type nuts can be absorbed without lowering the present average price of this type to the farmer. A maintenance this year of the 1928 acreage of Spanish and Runner types of peanuts in the Southeast and Southwest can be expected to result in prices reasonably satisfactory to the grower, but any material increase in the acreage of these types for market is likely to mean relatively low prices, because of the competition resulting from the increased production of No. 1 and No. 2 shelled Virginias incident to the probable larger plantings of Virginia-type nuts.

Imports of Virginia-type peanuts during the crop year beginning November 1927, were the equivalent of about one-third of the domestic production.

Virginia-type nuts. Most of the imports correspond to the Extra Large grade, while domestic peanuts of the 1927 crop were unusually small in size, and even if all grades of farmers' stock had been shelled hardly 15 per cent Extra Large would have been produced. In effect, then, the 1927-28 imports were about equivalent to our 1927 domestic production of Extra Large nuts.

At the beginning of the 1928 season probably 15,000,000 pounds of domestic Virginia-type peanuts, or about 5 per cent of the crop, were held over. Further, according to trade estimates, there were in storage in Chicago shelled Chinese peanuts of the same type equivalent to 15,000,000 to 20,000,000 pounds of farmers' stock. The 1928 production in China is reported as about average, but American importers hesitated to purchase, expecting an early decision on the tariff rate. It is probable that imports for the rest of this year will be heavily curtailed with a corresponding increased demand for large-size domestic peanuts of the Virginia type. Stocks of large-podded peanuts will probably be very light before the close of the 1928-29 season. With the tariff increase now in effect, Virginia-North Carolina farmers can probably raise up to 25 per cent more peanuts than in 1928 without oversupplying the market.

In the Southeastern States, where Spanish and Runner type peanuts are grown, carry-over from the bumper 1927 crop is estimated as about 25,000,000 pounds of farmers' stock, or over 5 per cent, part of which was shelled and in storage in Chicago and affected the market at the beginning of the 1928 season. Demand for Southeastern peanuts this season has also been lessened by the fact that this season's crop is below average in quality because of excessive rains during the growing and harvesting period. Shipments to the middle of January out of the Southeast were only 50 per cent as large as those for last season to the same date, although heavier than shipments of the 1926 season for the corresponding period. With even a fair demand during the rest of the season, however, Southeastern shellers believe that the present crop will be practically out of the way before new peanuts come on in the fall of 1928.

The Southwestern States entered the 1928 season with a carry-over of perhaps 5,000,000 pounds, or nearly 5 per cent. Production this season was about one-third greater than that of 1927, but the quality was superior to that in the Southeast and the crop has rapidly moved out of the hands of the growers.

The increased tariff will be of doubtful benefit to the grower of Spanish and Runner type peanuts, of which practically none are imported. They are to some extent interchangeable with Virginia-type peanuts, but the increased demand for shelled Virginias resulting from lessened imports will be primarily for the Extra Large size used by salters. If the output of No. 1 and No. 2 Virginias is greatly increased there may be a price reaction which will affect shelled Spanish and Runners. Prices of Runners and Spanish are slightly higher than they were a year ago, but any material increase in the acreage of these varieties would probably result in prices unsatisfactory to the grower.

CLOVER AND ALFALFA SEED

A general increase in the acreage of red and alsike clover for seed and an increase of alfalfa for seed in central and northern producing districts are recommended. Stocks of alsike clover and alfalfa seed are expected to be practically exhausted and the carry-over of domestic red clover seed will be small, after spring and early summer planting requirements have been met. Prices for these seeds have been relatively high, and are expected to continue at levels profitable to growers. Staining of imported red clover and alfalfa seed, under provisions of the Federal Seed Act, which became effective in 1928, probably will continue to stimulate the demand for these seeds grown in this country.

Notwithstanding the fact that stocks of sweet clover seed at the close of this spring will probably be the smallest in several years, curtailment of acreage seems desirable. Production this year on an acreage equal to that available for seed last year, with average yields per acre, would be more than ample to meet requirements in the spring of 1930. Had it not been for unusually bad weather at and after harvest last fall in several of the most important producing districts, enough seed would now be available to take care of this year's, and a considerable portion of next year's requirements.

Red clover seed production, although one-third smaller than the relatively large 1927 crop, was larger than the below-normal crops in the previous four years. Total production of red and alsike clover seed was about 66,400,000 pounds in 1928, compared with 103,600,000 pounds in 1927 and an average production of 67,700,000 pounds for the five years, 1922-1926. Imports of red clover seed for the fiscal year ended June 30, 1928, were less than half those

of the year before, and much below the average. Imports since July 1, 1928, have been much larger than a year ago for the same period, but are below the average. They are expected to continue larger than a year ago during the next few months, as the 1928 European crop, plus carry-over, exceeded the 1927 crop, plus carry-over, two years ago. Prevailing wholesale prices for domestic red clover seed are about 75 cents per 100 pounds higher than the average price during the past five years and about \$1 higher than last year at a corresponding time. An increase in the demand during the spring over that of last year should be noticeable particularly in the Central States, where winterkilling of red clover last spring was the greatest since 1917.

Alsike clover seed production in 1928 was the smallest in seven or more years, due to a marked reduction in acreage brought about by winterkilling, and also to smaller yields. The crop was only slightly more than one-half the size of the 1927 crop. Imports for the fiscal year ended June 30, 1928, were more than 80 per cent larger than the year before and 50 per cent larger than the average annual imports for the past 18 years. Since July 1, 1928, however, imports have been much below the average for the same period during the previous five years. Prevailing prices are about 20 per cent above those of last year and 30 per cent above the average for the past five years at a corresponding time. The higher prices may curtail demand to some extent but because of small stocks in this country and Canada, which countries produce the bulk of the world's supply, the carry-over is expected to be unusually small.

Growers of sweet clover are cautioned not to increase their acreage for seed production notwithstanding that the 1928 production fell below that of recent years. For several years a surplus has been piling up because consumption has not been keeping pace with production. Most of this surplus, and the 1928 crop, will probably be consumed this year at prevailing low prices, so that next year the surplus will not be so depressing a factor as during the recent past. Imports since July 1, 1928, from Canada, where the crop was unusually small last year, have been only about one-half the average for the past five years. Undoubtedly low prices paid to growers for two consecutive crops of sweet clover will tend to discourage many from harvesting a seed crop this year. In some sections, however, other crops can not be substituted easily, and production might well be confined to these areas.

Alfalfa seed production in 1928 was about 40 per cent smaller than in 1927. The decrease was mainly because of a marked reduction in yields, particularly in two of the largest producing States—Utah and Idaho—and shorter crops in several other States. Imports during the year ended June 30, 1928, were only about one-tenth the average for the past five years; since July 1 imports have continued in nearly the same proportion, reflecting another short crop in Canada. More seed, however, is expected to be imported from Turkestan during the next 8 or 10 weeks than during the same period in any year since 1920. Present supplies of domestic alfalfa are smaller than those for a number of years, but are expected to meet spring seeding requirements, which may, however, be affected somewhat by prevailing prices, the highest since 1920 and nearly 25 per cent above the average for the past five years.

TOBACCO

The outlook for cigar types of tobacco in 1929 appears favorable. The present outlook for flue-cured tobacco indicates the need for a reduction in acreage in 1929 compared with 1928. A moderate increase in Burley acreage might safely be made, but there is grave danger that the Burley growers will respond to present prices by overplanting in 1929. The outlook for flue-cured and dark air-cured tobacco does not justify an increase in acreage in 1929.

The tobacco-consuming habits of the world continue to develop along lines that have been apparent in recent years. Cigarette consumption is steadily expanding and has reached a point where cigarette types constitute nearly three-fourths of the total American tobacco production. Cigar consumption, on the contrary, is slightly diminishing in total quantity and is changing in character, because of the steady increase in the consumption of low-priced cigars accompanied by decreasing consumption of the medium and higher grades. Quantities consumed of plug, twist, and fine cut are steadily decreasing, but snuff consumption is slowly increasing.

Exports of flue-cured tobacco in 1928 increased markedly over those of 1927, largely because of the record takings by China. Cessation of civil war and expectation of higher taxes stimulated increased imports. The customs tariff

effective February 1, 1929, is merely a consolidation of former duties and does not appear to offer any particular encouragement to tobacco-growing in China. Replenishment of stocks in China in 1928 will result in lower takings of our flue-cured tobacco in 1929.

Although shipments of flue-cured tobacco to Great Britain declined, this type occupies a dominant position in that market. The continued tendency away from pipes to cigarettes in Great Britain supports the demand for this type. Difficulties are being experienced in disposing of cigarette leaf grown in Empire countries, notably Rhodesia, and stocks of these tobaccos have accumulated.

Exports of fire-cured and air-cured tobaccos were smaller in 1928 than in 1927, continuing the decline of recent years. Competition in our foreign markets for the dark types continues to increase although there may be some decrease in 1929 because of smaller European crops. Competition of British Empire tobaccos on the British market appears to have affected principally our dark types used in pipe tobacco. Smoking tobaccos manufactured from Empire leaf have been introduced much more successfully than have Empire cigarettes.

Flue-cured, U. S. Types, Nos. 11 to 14.—The present outlook for flue-cured tobacco indicates the need for a reduction in acreage in 1929 compared with 1928. The acreage harvested last year amounted to 1,147,200 acres, and production reached the record total of 723,436,000 pounds. Stocks on July 1, 1928, were 564,989,000 pounds, giving a total supply of 1,288,425,000 pounds. Total consumption during the year ending July 1, 1928, amounted to 617,431,000 pounds. In recent months, exports of flue-cured tobacco have been at their highest level, but the increase in exports indicates the possibility that foreign stocks will be replenished to a point that may curtail foreign requirements by the time the 1929 crop is ready for market. A further need for caution in the planting of flue-cured tobacco arises from the Burley situation. Production of this type reached a low ebb in 1927, and is still below consumption requirement, notwithstanding a considerable increase in 1928. High present prices are likely to push production beyond probable requirements in 1929.

The interests of growers will be best served by keeping 1929 production somewhat below that of last year. Normal yields on last year's acreage would result in a much larger crop because the average yield per acre in 1928 was relatively low. A reduction in acreage more than sufficient to allow for this factor appears desirable.

Burley, U. S. Type No. 31.—Notwithstanding the considerable increase in the amount of Burley last year compared with 1927, production remains lower than normal disappearance. Stocks on October 1 last were 103,000,000 pounds less than on October 1, 1927, whereas, production increased approximately 89,000,000 pounds, resulting in a total supply on October 1, 1928, of 14,000,000 pounds smaller than on October 1, 1927. If consumption continues as in the past, the stocks of Burley tobacco in the hands of dealers and manufacturers on October 1, 1929, will be several million pounds less than they were just prior to the opening of the present marketing season.

The outlook is favorable for a small increase in acreage this year. However, favorable prices now being paid to Burley growers result in part from the unusually high percentage of the crop suitable for the manufacture of cigarettes and smoking tobacco, and in part from the rather low yield per acre in 1928. Plans for 1929 should recognize the possibility of heavier yields, which probably would be accompanied by some reduction in manufacturing quality. The danger lies in the fact that present prices are likely to stimulate growers to disastrous overproduction. An increase in acreage not to exceed 6 to 8 per cent. however, would seem to be justified. Expansion into areas not suitable for the production of good quality of Burley will almost certainly prove disappointing to growers.

Maryland, U. S. Type No. 32.—The outlook is favorable for an increase in production of Maryland tobacco in 1929, but an average yield on the acreage planted in 1928 would probably result in sufficient increase. As a result of storm damage, the 1928 crop was one of the smallest and poorest in recent years. The indications are that when the 1929 crop is ready for market there will be a shortage of high-grade Maryland leaf and a surplus of lower grades. Evidently there will be more than the usual spread in price between good and common leaf and an unusual effort should be made to produce high grade tobacco.

One-Sucker, U. S. Type No. 35.—The outlook for one-sucker tobacco is favorable for a crop of about the same size as that of 1928, which is estimated 22,086,000 pounds. Total consumption during the year ended October 1, 1928, was 27,842,000 pounds. As exports are decreasing and there is a tend-

ency toward lower domestic consumption, it seems probable that requirements for the ensuing year will be less than they were to October 1, 1928. Since stocks of old leaf are ample to meet any unexpected need, no increase in acreage appears advisable.

Green River U. S. Type No. 36.—Production of Green River tobacco has decreased in the past two years. As the crop of 1928 was slightly smaller than the consumption during the year ended October 1, 1928, and there was material reduction in old stocks, better prices have resulted. Consumption has been decreasing rapidly, however, and the lower rate of exportation in recent months indicates a continued downward trend of consumption. An increase in acreage, therefore, does not appear to be justified.

Virginia sun-cured, U. S. Type No. 37.—The outlook for Virginia sun-cured type is practically unchanged. Production and consumption are about even. The prices being paid for the 1928 crop are lower than usual, probably because of the poor quality of the crop. No change in acreage appears advisable.

Virginia fire-cured, U. S. Type No. 21.—The outlook for Virginia fire-cured tobacco is somewhat more favorable than a year ago, because of decreased production in the past two years and consequent reduction of old stocks, but exports during 1928 reached only 18,693,000 pounds, compared with 24,302,000 pounds during 1927. No increase in acreage seems advisable until stocks have been further reduced.

Kentucky and Tennessee dark fire-cured, U. S. Types Nos. 22 and 23.—The situation in fire-cured tobacco of Clarksville-Hopkinsville and Mayfield-Paducah types does not indicate need for increased production. Exports for 1928 amounted to 83,668,000 pounds, compared with 112,010,000 pounds in 1927. Production in 1928 amounted to 113,000,000 pounds and will probably equal, if not exceed, the requirements from October 1, 1928, to October 1, 1929.

With the declining exports of fire-cured tobacco and the decreasing consumption of chewing tobacco in this country, the upward tendency in snuff consumption becomes a factor of increasing importance in the determination of average price to growers. Increased production of tobacco, of snuff, and wrapper quality appears desirable. The outlook does not justify an increase in acreage.

Henderson stemming, U. S. Type No. 24.—The production of Henderson stemming tobacco in 1928 amounted to 5,500,000 pounds. Consumption during the year ended October 1 was slightly less than 7,000,000 pounds, but consumption is steadily decreasing, and the present outlook does not justify any increase in acreage.

Total stocks are relatively low, and because of unfavorable weather conditions in various cigar leaf districts during the last two or three years there is a shortage of good cigar leaf tobacco of practically all classes.

Pennsylvania filler, U. S. Type No. 41.—Production of Pennsylvania filler type has increased, but consumption of low-priced cigars is increasing and no oversupply seems likely in the near future. This view is strengthened by the decreased quantity of Porto Rican filler tobacco available for blending. There appears to be justification for moderately increased production.

Miami Valley, U. S. Types Nos. 42, 43, and 44.—Production of cigar leaf in the Miami Valley in 1928 was about 28 per cent less than the quantity consumed during the year ended October 1, 1928. The effect will be a material reduction in stocks by October 1, 1929, and a favorable market for a larger crop in 1929 than was produced in 1928. Even allowing for the probability of higher yields in 1929 than in 1928, there appears to be ample justification for a moderate increase in acreage.

Wisconsin binder types, U. S. Types Nos. 54 and 55.—Production of tobacco in Wisconsin appears to be on a sufficiently high basis. Production in 1928 exceeded disappearance for the year ended October 1, 1928, by more than 5,000,000 pounds. Stocks on October 1, 1928, amounted 72,548,000 pounds, a decrease of about 10,507,000 pounds from the preceding October 1. If the present rate of consumption is maintained, an increase in stocks by next October 1 may be expected. The situation indicates a favorable market in 1929 for a crop of about the same size as that of last year, and particularly for the good packing grades.

New England, New York, and Pennsylvania binder types, U. S. Types Nos. 51, 52, and 53.—The outlook is excellent for open-field types of cigar tobacco grown in New England and in the Havana seed district of New York and Pennsylvania. Consumption for several years has exceeded production of broadleaf and Havana seed, and stocks have been materially reduced. Indi-

cations are that existing stocks contain a lower-than-usual percentage of tobacco suitable for cigar manufacture and a larger-than-usual percentage of stemming grades, since unseasonable weather conditions of the past two or more years have lowered the quality. Unfavorable prices received by growers have been due to this situation rather than to weakness in the market position of the crop. Farmers who produce good quality tobacco in 1929 may anticipate a ready market at favorable prices.

New England shade tobacco, U. S. Type No. 61.—A considerable increase in production of shade-grown tobacco took place in 1928 in response to a need for more wrapper-type tobacco, but the rainy season damaged the crop and the lower price to growers was apparently due to poor quality. In this type, as in the sun-grown types, there appears to be a deficiency of tobacco of manufacturing quality. The outlook for shade-grown cigar leaf will depend to some extent upon what changes, if any, are made in the tariff on wrapper tobacco.

Georgia-Florida cigar leaf, U. S. Types Nos. 45 and 62.—Expansion has taken place in the production and consumption of sun-grown and shade-grown cigar types in Georgia and Florida. They appear to be finding favor among manufacturers and there is no reason to anticipate any slacking of demand.

SUGAR

Prospects point to a continuation of large world sugar production, with sugar prices at a low level through another year. Prices may not go lower than in 1928 in which they have averaged the lowest in any year since the war. In recent months wholesale prices at New York have been the lowest since January, 1922. Any further decline might result in some curtailment in the grindings of sugar cane and ultimately in higher prices.

Reports to date indicate that world sugar production for the present season will be 4 per cent in excess of last season. Sugar consumption is increasing, but probably not rapidly enough to absorb the additional supply without leaving some increase in stocks at the beginning of the 1929-30 season, as compared with the stocks at the beginning of this season. There is no evidence that the world-wide tendency to expand production in both cane and beet producing areas has been checked, consequently producers in the United States may expect as much competition from foreign producers next season as they are experiencing in the present season. Under these conditions domestic sugar producers can hardly expect improvement in the demand for their product next season.

The prevailing low prices of sugar encourage some increase in consumption, but prices have been low through the past four years, and the annual consumption of raw sugar in the United States at present appears to be only about 1,122,000 short tons, or 16 per cent more than it was four years ago. Although consumption in Europe has been increasing, world consumption can hardly be expected to increase in one year enough to use an increase of 1,300,000 short tons in supplies.

Production of both cane and beet sugar in foreign countries continues to expand. The crop of Java has been increasing continuously since 1919; the present crop is estimated to be one-half million short tons in excess of last year. Cuba is also harvesting a record crop. The removal of restrictions on production will release the entire crop for market unless low prices discourage the grinding of the entire crop. The sugar beet acreage of Europe has more than recovered from the effects of the war. Low prices may check the rate of expansion, but there is no indication of curtailment in the sugar-producing area of any important country.

HONEY

Following a rather light crop in 1928, supplies of honey are not as heavy as usual at this time of the year, and little carry-over into the 1929 season is anticipated. On the whole, colony strength is satisfactory but fall stores were light in many sections and considerable spring dwindling is probable. The present outlook, based on the condition of honey plants, is for a honey flow in 1929 better than the average of recent years.

Export demand during the past two fiscal years has taken an average of over 10,000,000 pounds of honey, as compared with an average of 3,000,000 pounds for the preceding six years. Demand from Germany, which is largely responsible for this increase, has received a severe setback by the recent German law which classes as adulterated, honey in which the diastase has been destroyed or impaired by heating. Several shipments have been refused by Germany importers on the ground that diastase content has been too low.

O. J. Neal - Librarian

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THE AGRICULTURAL OUTLOOK FOR 1930

Prepared by the Staff of the Bureau of Agricultural Economics

Assisted by Representatives of the Agricultural Colleges and Extension Services
and the Federal Farm Board

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VALUE AND USE OF THE OUTLOOK REPORT

Improved farm income requires planned production and effective marketing.

* * * **Wise production planning must precede effective marketing.** * * *
The surest way to control an oppressive surplus is to prevent it. No marketing machinery can insure good prices and satisfactory income if the farmer plants and breeds unwisely. The day is past when farmers can safely plan on the basis of current or last year's prices or on guesses about the future. Planting and breeding operations should rest on the best possible size-up of the market outlook at home and abroad for a year or more to come. Such an appraisal is given in the Outlook Report. * * *

The Federal Farm Board heartily commends this service to the farmers of the country and believes that it will contribute largely to increasingly intelligent farming operations and toward larger farm incomes.

—Statement by Federal Farm Board, January 29, 1930.

In this report the world-wide and nation-wide supply, demand, and price facts, which are not readily available to farmers, have been assembled. Effort has been made to show as nearly as possible the probable trend of conditions toward the time when the products of the next season's operations will be marketed. These statements represent the national viewpoint; they may have to be modified in view of unforeseen changes and should be adapted to peculiar local conditions.

These reports are not designed to tell individual farmers what to do, but to give them the basic facts upon which to make intelligent decisions in view of their local conditions.

This is the eighth annual agricultural outlook report prepared by the staff of the Bureau of Agricultural Economics, assisted by representatives of other bureaus of the department and by representatives of the agricultural colleges, experiment stations, and extension forces of various States. This year 44 States participated in the conference in Washington at the time the report was prepared and representatives of the Federal Farm Board were present.

State and regional outlook reports are being prepared by nearly all of the States to interpret the facts of this Federal report in terms of the needs of the farmers of these respective States. Any farmer who receives a copy of this report is urged to secure also a copy of the report distributed by his State extension service and consider its recommendations in connection with those made herein. Meetings will be held by county agents in hundreds of localities to discuss spring plans for the locality in view of the conditions stated in the following report.

GENERAL AGRICULTURAL OUTLOOK

IMMEDIATE OUTLOOK

Income from the farm products of 1930 does not now appear likely to exceed that from the products of 1929. Although the volume of agricultural production in 1930 can not now be indicated with a great deal of certainty, crop yields are likely to be larger than in 1929, when they were generally below average, whereas livestock production, in the aggregate, is likely to show little change. Larger production in itself would ordinarily tend to lower the level of prices received by producers, but improvement in business conditions over the present may tend to offset in part the influence of increased output.

With the purchasing power of consumers in 1930 reduced somewhat below 1929, farmers need to follow a rather conservative production policy. This is a year when it is particularly desirable for each farmer to estimate his probable income, in view of the price outlook for each of his products, and to plan his production expenditures accordingly. Farmers who are planning necessary permanent improvements such as buildings, fences, ditches, or orchards may find 1930 an opportune time for procuring labor and supplies at somewhat reduced cost.

LONG-TIME OUTLOOK

No material change from recent levels of total farm income seems in prospect in the next few years. However, the long-time tendency for prices of agricultural products to advance in relation to prices of nonagricultural products will probably continue. During the period 1921 to 1925 prices of farm products advanced, whereas prices of nonagricultural products have tended to decline throughout the period since 1922. During the next five years, however, increased production of livestock and livestock products, and increasing foreign competition, will tend to check the long-time tendency.

Farm income recovered considerably from 1921 to 1925, and has shown no upward tendency since then. The higher level of income since 1925 has somewhat improved the financial situation of farmers. Apparently land values have nearly ceased to decline, but there is no assurance as yet that a stable level has been reached in all States. Farm-mortgage debt appears to have reached its peak in 1928 and to be starting a gradual decline. Taxes paid by farmers have continued to mount, but with a much slower rate of increase in the last five years than in the preceding decade. Technical changes are also taking place with the rapid introduction of power machinery and the trend toward less labor and larger farms. These changes are increasing capital requirements and lowering expenses per unit of product for farmers in favorable locations, and will continue to render still more difficult the situation of farmers in so-called "submarginal" areas, and to release still more land for the production of human food instead of feed for draft animals. As a consequence of continued unfavorable incomes and of the general displacement of labor by machines, farm population has continued to decrease to the lowest point since 1900. During recent years, however, the net migration from country to city seems to have been reduced.

The financial status of agriculture has become much more stabilized during the past five years. Land values, as shown by data for the year ended in March, 1929, the latest available, have continued in the downward trend of

recent years, but the declines on the whole were comparatively slight—in few States exceeding 1 per cent. Fewer foreclosures and other forced transfers appear to have occurred. Bankruptcies involving farmers declined. Although considerable progress in adjustment to the post-war conditions has been made, the readjustment can not yet be said to have reached completion. There is no assurance, for example, that values have fully reached bottom in all States. The foreclosure rate is still high, with many localities continuing to report that forced sales constitute the bulk of land transfers, and that an appreciable amount of excessive indebtedness remains to be adjusted. The farm-bankruptcy rate still is about six times the pre-war experience. The annual rate of change in the ownership of farms from willing seller to willing buyer remains comparatively low. Nevertheless, recent indications support the view that for some time to come changes in farm real estate values may be comparatively slow in movement and small in extent.

Total farm-mortgage indebtedness appears to have reached at least a temporary peak and may be expected to decline somewhat during the next few years. The total increased 118 per cent from 1910 to 1920, 19 per cent from 1920 to 1925, and 1 per cent from 1925 to 1928. Since 1928, total outstanding loans of the principal lending agencies have shown a slight net reduction.

Several factors have tended to check the upward trend and to reduce the total farm-mortgage debt: Completion of most of the funding of short-term debt into mortgage debt by 1925; reduction in the number of voluntary land transfers; decline in land values, and on mortgaged farms, a resulting rise in the average ratio of debt to value to a point approaching customary loan limits; extinguishment of debt by foreclosures and liquidation of mortgaged-land holdings; increased use of amortization and other partial-payment plans; and some retirement of loans from farm earnings. Rising interest rates in 1928 and especially in 1929 restricted the supply of funds available for farm mortgages. The lower interest rates now in prospect, together with a probable increased expenditure for machinery and equipment, voluntary transfer of farms, and other factors tending toward an increase, are not expected to have sufficient effect on mortgage borrowing to offset the influence of the factors tending toward reduction in total mortgage debt.

Taxes on farm property in the United States as a whole may be expected to increase for some time, although it appears certain that the rate of increase will be less than the average rate since 1913. Estimated average taxes per acre of farm real estate increased 134 per cent from 1913 to 1924, principally because of increased expenditures for schools and roads. By 1928 taxes per acre had advanced to 146 per cent above the 1913 level. It is most unlikely that there will be a sufficient abatement in the demand for public improvements and services to permit a general reduction in State and local expenditures. Taxes on farm property will not decline and probably will continue to increase unless the several States should (1) provide more effective control over the tendency of expenditures to increase and (2) revise further their systems of taxation so that a substantially greater share of the necessary expenditures would be met by revenues derived from sources other than general property. Past experience indicates that progress along these lines will be slow unless there should develop an unusually strong demand for practical and far-reaching improvements in State and local finance.

Rapid changes in farm production practices during the last decade have introduced new features into the agricultural situation. There seems little doubt but that the rapid development and adoption of improved farm machinery, particularly the all-purpose tractor and the variety of new cultivating and harvesting equipment associated therewith, will continue.

This will tend toward reduction of the farm-labor forces formerly required; toward enlargement of the size of farm; toward further reduction of the number of horses and mules; and toward release for other purposes of further acreages of crop and pasture land formerly required for feed for horses and mules. Further expansion of agriculture into the subhumid grazing area of the Great Plains probably will be stimulated. Milk and meat production may tend to become still further concentrated on the more fertile and level lands of the North and West. The situation of farmers in the rough or sandy areas of the country or on submarginal lands in general may be made even more difficult. In the case of cotton, improved mechanical methods now in use and others in process of development, and possible further expansion

in the western sections of the Cotton Belt formerly considered unsuited to cotton, may raise a problem for lands not well adapted to machine handling.

Both the unfavorable farm economic situation and the changes in production methods have affected farm population which at the beginning of 1929 was the smallest in 20 years—probably in 30 years. The decline has continued throughout the recent recovery in agricultural incomes from the low point of 1921 and 1922. The net annual movement from farm to cities was reduced slightly during 1927 and 1928, being 604,000 and 598,000 persons, respectively, as compared with 1,020,000 in 1926 and 834,000 during 1925. Further readjustments may be necessary before the annual movement to the city will be reduced to more stable proportions.

The outlook for the next few years may be judged from the changes that have been taking place in demand and in supply. Demand for American farm products increased about 10 per cent between 1919 and 1926, and has shown but little increase since then. The uncertain European demand situation and increasing foreign competition makes it doubtful if any upward turn in demand for our farm products can be expected in the immediate future.

Agricultural production, particularly of meat animals, is likely to show material increases in the next few years. Following the dark days of the deflation period, poultry, dairy, and meat production increased rapidly to 1924, then increased less rapidly as the upturn of the beef-price cycle set in. Meanwhile, grain crops decreased somewhat, but during the last few years apparently became stabilized on a level still high enough to hold feed crop prices at low levels compared with livestock. Commercial truck-crop production has nearly doubled during the past decade, and fruits and vegetables have increased by one-third.

Prospective increases in beef cattle and dairy production during the next five years, with little prospect of compensating increases in demand, will tend to depress rather than raise gross income to farmers. The upward trend of demand for specialty truck crops, fruits and vegetables, and flue-cured tobacco, will probably continue, but the favorable effect of these factors has been partially offset during recent years by the failure of world demand for cotton to maintain its former upward trend, and by competition from increasing foreign production, in the markets for our wheat, hogs, and wool.

During the last 10 years the price level of nonagricultural products has gradually tended downward whereas the price level of agricultural products has gradually risen. This appears to mark a reappearance of the long-time tendency in evidence during the period 1890 to 1915, during which the agricultural price level rose at a more marked rate than the prices of other products. During the last four years there has been a downward trend in the general level of commodity prices due largely to the downward tendency in nonagricultural prices. This tendency in general price level may continue during the next decade. In view of the probability that the more rapid increase in industrial production than in agricultural production is likely to continue, a continuation of the upward trend in the exchange value of farm products for nonagricultural products may be expected. However, for the next few years the downward tendency in livestock prices may prevent the immediate reappearance of these underlying trends.

In the long-time outlook the probable size of the population of the future is an important consideration as to the farm land needed to meet the demand for American farm products. Recent disclosures of a very marked decline in the birth rates in important countries of the world including the United States suggest that the total population no longer can be counted upon to continue increasing in the future as steadily as it has in past decades. Assuming no change in our immigration laws, a stationary population according to some estimates may be reached in the United States within 30 years. This prospect taken together with recent indicated improvements in agricultural efficiency and notable changes in the consumption of foods and fibers suggests that, considering the nation as a whole, there is little likelihood of needing to enlarge our total farm-land area during the next few years. Continued extension of our crop area into lands now found profitable to cultivate under the new methods, principally in the Great Plains region and the Northwest, probably will be offset by reductions of crop acreage elsewhere. Much of the 20,000,000 to 30,000,000 acres of plowland now lying idle in the Southern and Eastern States probably will not be needed for crops during the next few years.

NORTH AND EAST

In view of the pressure of supplies from all parts of the country on the consuming markets, farmers in the North and East, outside of the Corn Belt, face increased competition in virtually all lines. The natural advantages incidental to location provide a margin so slender that it may easily be offset by other factors. The long-time outlook for those farmers who develop production of the special qualities and varieties most preferred in the markets where they can sell to advantage, volume and price both considered, is by no means discouraging. General expansion in the near future, however, will probably not result in enhanced income. In areas in which returns have been consistently low, withdrawal from land in favor of forest or recreational use should not be postponed in hope of better farming conditions in the near future. Closer attention should be directed to the possibility that, for many farmers, larger volume even at a lower price may mean more net income.

THE SOUTH

Cotton production has continued to shift westward and northward and has been meeting increasing foreign competition. The shift has been due in part to the fact that the boll weevil has done less damage along the northern and western borders than in the central and southern parts of the Cotton Belt. The increasing expensiveness of labor encourages the use of more machinery and this tends to discourage cotton production in the eastern States of the Cotton Belt. Conditions in the Great Plains region and in the alluvial cotton lands along the Mississippi River are more suitable for expansion than in the eastern cotton States. Foreign competition has been increasing not only in volume of cotton production but also by improvement in quality of production in some foreign countries, particularly India.

In some areas, especially along the Atlantic coast and the Gulf border, a moderate development of specialized fruit and vegetable production may be a profitable alternative to cotton production. The growth of industrial cities in the eastern Cotton Belt and in the number of tourist spending winters in southern cities is expanding local markets for dairy and poultry products and vegetables. The growth of industrial cities in the North also furnishes an expanding market for early fruits and vegetables. Great care must be exercised, however, not to increase production more rapidly than the demand warrants. Early-vegetable producers are also meeting increasing competition with the products of Mexico and the West Indian islands. The opportunity for expanding many of the southern commercial crops, such as sugarcane, rice, peanuts, and other vegetable-oil-producing plants, is definitely limited by strong competition from foreign tropical and subtropical countries. Tobacco production however, may be expanded to some extent to meet the increasing demand for cigarettes, although undue expansion in the immediate future should be guarded against. Areas which have been unable to make satisfactory incomes from cash crops during recent years may well consider turning to more extensive uses, such as grazing lands, as there are no indications of a general improvement in the cash crop situation in the near future.

CORN BELT AREA

The mechanization of agriculture will undoubtedly make substantial progress in the Corn Belt area of this country during the next decade or two. The increased use of the general-purpose tractor, combine-harvester, and corn picker will tend to concentrate the production of corn on the more level land and in larger fields. Land less favorably situated will be devoted more and more to the use of pasture, and high-class forage crops, and may suffer in value in comparison with the more level lands. The further reduction in horses and mules during the next 10 years will release from 20,000,000 to 30,000,000 acres of crop land in this country for uses other than growing feed for work animals. Continued low prices of oats and a material decrease in oat acreage may be expected in the Corn Belt. The spread of the corn borer will tend to limit the growing of corn to such land as can be operated advantageously by mechanical power and expand the use of cornstalks for manufactured products. The increase in high-class pasture and forage will lay the foundation for expansion in cattle numbers. The immediate effect of present high prices of beef and low prices of butter will be to encourage production of beef cattle rather than

dairy. Within the next decade, however, lower prices for beef will induce many farmers to milk cows instead of raising calves and the dairy output will expand. The mechanization of agriculture and the increase in cattle raising will result in larger farming units and fewer farmers, especially in those sections which are not favorably located for the production of fluid milk or truck crops.

THE GREAT PLAINS

The Great Plains region, including all of the main spring and winter wheat belts, is now in process of major agricultural readjustment and development and will continue in this state during the years immediately ahead. It is sharing in the general westward shift of farm production which seems to have become a significant characteristic of American agriculture since the World War. Wheat production, stimulated by the tractor and combine, and by improved tillage methods, is encroaching on the cattle ranges, particularly in the winter-wheat area of the southern Plains; and this movement is likely to continue for several years. Dairying and hog raising, already well established in the eastern portion of the spring-wheat areas, are likely to grow still more important there during the next few years.

Wheat acreage expansion is going forward in the face of competition from many countries on a world market and with the possibility of a downward long-time trend of wheat prices. Against these factors are new implements, new production practices, and larger-scale operation, with consequent lower costs. The growing dairy and hog enterprises in the eastern portions of the northern Plains also face severe competition from the older producing areas to the east and south, many of which have more favorable economic conditions.

Undoubtedly these new developments mark progress. They should, however, be carried forward with caution, and farmers of this region should guard against unduly rapid and extreme developments involving heavy capital outlays, particularly in lines involving products of rather wide price variations. The danger of overcapitalization of unusual and short-time profits into unwarranted land values should be avoided.

THE WESTERN REGION

Developments in the western region within the next few years are not expected to display any extreme or widespread changes. Encroachments on the grazing area from large-scale grain production in States west of the Rocky Mountains has about reached its limit, and only minor shifts from sheep to cattle on the grazing lands may be expected. Further increase in specialized crops on the irrigated lands may be anticipated.

As to the grazing enterprise itself, only some slight further increase in the carrying capacity of the range may be realized through further improvement in grazing practice and control on the forest reserves and other public lands, and through the increased growing of supplementary feeds adjacent to the grazing grounds.

Cattle grazing is likely to suffer seriously within the next few years from expansion in the number of cattle, particularly in the Corn Belt. Range growers should guard against losses likely to result from making added capital investments in the cattle enterprise with a period of falling cattle prices not far away. Rather, a general effort at debt paying and holding the business to present proportions should be the objective.

The production of grain on the dry-farming land is changing, not only in the direction of expanded acreage but in the practices followed. The tractor is coming to replace horses as power for combines and tillage machinery. New rotations and tillage methods better adapted to local conditions are being adopted. In the extreme Northwest many of the dry-farming, as well as other farming, areas are dependent more largely on export trade for an outlet for farm products; hence farmers there should pay particular attention to foreign demand and competition.

DOMESTIC DEMAND

In view of the decline in domestic business activity from the high level attained in the summer of 1929 to the low level prevailing at present, the remainder of the 1929 production will be marketed under domestic-demand conditions materially less favorable than those of the first part of the season.

The domestic market may improve later in the year, but it is not likely that the demand for farm products in the summer and fall of 1930 will be as good as that which prevailed during the summer and fall of 1929. It is quite probable that during the first half of 1931 the demand for farm products will be materially better than it now promises to be during the first half of 1930, but it is doubtful if it will reach the high level of demand that prevailed during the first half of 1929.

The decline in industrial activity, employment, and pay rolls since last June has been of sufficient proportion to affect the demand for some farm products. The commodities which thus far have shown the effects of the decline in domestic demand most noticeably are butter, cotton, and wool; while apples, potatoes, and grains are reflecting lowered demand in their failure, so far, to make the usual seasonal price advances. Consequently the money incomes from current farm marketings are not as good as anticipated earlier in the season.

In appraising the domestic market that is likely to prevail during the 1929-30 season, it is necessary to observe the following outstanding facts in the industrial and financial developments of 1929. The summer months of 1929 marked the end of the period of business expansion which began in January, 1928, and showed itself most noticeably in expansion in the automobile, iron and steel, and allied industries. The recession in industrial activity which began last summer has consequently been most marked at first in the automobile, iron and steel, and more recently in the textile and some other industries. There has also been a further decline in building construction, the present level being the farthest below trend since the early part of 1921. After the peak in industrial activity had been passed the security markets collapsed, which accelerated the downward trend in industrial activity in the last three months of 1929. A lowering of interest rates followed the decline in the stock market.

The business decline from June to December was more rapid than during any other recent business recession, industrial production having declined about 20 per cent, from 10 per cent above to 10 per cent below normal, during the 6-month period. In previous recessions the total decline in industrial production from high to low was 32 per cent from 1919 to 1920, 21 per cent from 1923 to 1924, and 12 per cent from 1926 to 1927; these declines extended over periods of 15, 14, and 14 months, respectively. The length of time it has taken to recover from previous recessions to normal again, after business has once fallen below normal, has varied from six months to two years. At present, industrial activity has been below normal since November, 1929. Some favorable signs are already appearing, such as an easing of credit conditions, and apparent slight recovery from the drastic curtailment of output in certain industries such as iron and steel, and automobiles, and the prospect of increased Federal and State construction work. During the last two months commodity prices have moved within a relatively narrow range following a decline of approximately 5 per cent during the preceding four months.

These facts, and others available, do not as yet indicate definitely whether the turn has come. Although it is possible that there may be a temporary recovery followed by a further decline, it is also possible that the recession may continue for several months more, though with a slower rate of decline, or the bottom may already have been reached.

Some indication as to future domestic demand prospects may be obtained from the tendencies in earlier recession periods, but there are some important differences. The recession during 1927 and the present one are both related to the automobile industry, but it should be observed that the curtailed output since June, 1929, resulted partly from previous overexpansion and partly from the uncertainties created by the great decline in security prices, whereas in 1927 the curtailment was brought about largely by the temporary cessation of Ford production. Credit conditions in 1929 were characterized by relatively high interest rates as was the case in 1920 and 1923, the rates being somewhat lower than in 1919 and slightly higher than in 1923. In 1929 the credit stringency was due primarily to marked speculative inflation in security prices, whereas in the earlier periods, prices of commodities as well as stocks had been advancing rapidly. Except in the automobile-industry inventories of industrial products were not generally high in 1929, in contrast to the large inventories in 1919 and in 1923.

Taking into account the greater stability in commodity prices, lower inventories, and better credit conditions prevailing at present compared with those in other recession periods, it is not generally expected that the present decline

will develop into a business depression as serious as that of 1920-21, and although the early months of 1930 are likely to show a relatively low level of industrial activity, the latter part of the year should show an improvement continuing into 1931.

FOREIGN COMPETITION AND DEMAND

Despite the increasing foreign competition, the foreign demand for our agricultural products of 1930 is likely to be better on the whole than during the rather depressed situation encountered abroad by our products of 1929. In the first half of the 1930-31 marketing season, foreign demand may be less than it was for the first half of the 1929-30 season, but is likely to improve as the season advances and be considerably better during the last half of the 1930-31 season than in the corresponding period of the present season.

In view of the easier international money situation, prospects are for some improvement in economic conditions and purchasing power in Germany and Great Britain by the end of 1930; this should tend to offset any slackening in demand that may take place in other foreign markets. The competition to be met by American agriculture as a whole from foreign production will probably be somewhat greater during the 1930-31 season than in 1929-30. More competition may be expected from foreign production of wheat, corn, flaxseed, and pork products, and less from tobacco, sugar, and apples. Little change is to be anticipated in the competition from foreign dairy products and wool.

Economic conditions are at present somewhat depressed in most of our leading foreign markets. In the principal European countries, notably Great Britain and Germany, this depression is to be associated with the increasing tightness of money that prevailed during the first three quarters of 1929 accompanying the high interest rates in this country, which greatly reduced the outflow of American capital to Europe and caused a flow of funds to New York. These conditions have now changed. Interest rates have been reduced generally in Europe as well as in the United States, and prospects seem good for a renewal of the flow of American capital to Europe. The low point in the current business recession in Europe may not yet have been reached, but the change in the international-credit situation paves the way for improvement during the latter part of 1930. A factor unfavorable to the European situation is the current widespread depression in Latin American and other Southern Hemisphere countries, which are important markets for European industrial products. In most Latin-American countries this situation is largely the result of the prevailing low prices for coffee and sugar. The uncertain financial situation is a depressing factor in Argentina. Short wheat crops and low prices for butter and wool are reducing the purchasing power in Argentina, Australia, and New Zealand. In the Orient, economic conditions are also unfavorable, largely because of the decline in silver exchange in China and lower silk prices, with apparently less prospect of a definite improvement during this year.

In the United Kingdom, our largest market for agricultural products, the postwar readjustment in the fundamental economic situation has been disappointingly slow. Industrial activity has been generally below a satisfactory level and particularly so in textile manufacture. There has been a considerable shift in employment from older to newer industries and occupations, but this has not taken up all of the slack. Unemployment persists in large volume. Taking the year 1929 as a whole, unemployment was less than in 1928, but the high interest rates of last summer and early fall had a retarding influence on British industry, and unemployment increased toward the end of the year in spite of some improvement in the coal industry. The generally easier money conditions now prevailing, however, should have a stimulating effect, and it is possible that economic conditions in Great Britain during the 1930-31 marketing season may well be more favorable than during the present season.

In Germany, our second largest market, the adverse effect of high interest rates has been even more evident than in Great Britain. In spite of weak domestic demand, relatively high activity has been maintained in most industrial lines, with large exports. Unemployment this winter appears to be greater even than in 1928-29, when the severe winter weather was exceptionally unfavorable to employment. The easing of the international-credit situation, together with the impending adoption of the Young plan and establishment of the International Bank, should improve prospects for borrowing long-term capital and may be expected to result in an improvement in the German situation. Just how long it will take for these factors to bring about substantial

improvements is uncertain, but it seems that their influence should be felt at least by the end of 1930 and that economic conditions in Germany during most of the 1930-31 marketing season may be appreciably better than during 1929-30.

Central European countries have followed a course similar to that of Germany, and in certain instances, notably Austria, present conditions appear even more unfavorable. Significant improvement in that region seems likely to be delayed until after the German situation improves. In Poland, financial conditions continue unsatisfactory, with little prospect of improvement during the present year.

The general economic situation in France has been satisfactory for many months. Excellent harvest results in 1929 were a further favorable influence to the economic situation, but have restricted purchases of competitive agricultural products. The financial position of the country is strong. Industrial activity in France is on a high level, and the purchasing power of that market is probably better than at any time since the World War. On the other hand, it does not appear reasonable to expect significant further improvement in the near future, and certain factors point to some recession during next year. The most important is the prospect for some reduction in expenditures of tourists from both North America and South America for 1930 as compared with the preceding two or three years. Much the same general economic situation and outlook prevail in Belgium as in France. In the Netherlands, industrial activity is high and unemployment small. Purchasing power of that market for American agricultural products should be maintained.

In Italy signs of business recession have recently appeared, and the outlook for 1930 is somewhat less favorable. A great deal depends upon the ability of Italian manufacturers to maintain their position in export markets. There seems to be some question as to their ability to do so. The possible reduction in tourist expenditure is an unfavorable factor as is the prospect of some reduction in demand in certain of Italy's rather important markets in Latin America. On the other hand, the 1929 crops in Italy were exceptionally large; and although this is restricting the market in that country for such products as wheat and tobacco, it should strengthen the market for cotton by improving the domestic demand for textiles.

Economic conditions in the Scandinavian countries have been good for some time and appear likely to continue favorable in 1930-31 for the marketing of such American agricultural products as those countries take. This applies particularly to fresh and dried fruit.

The marked decline in the exchange value of Chinese currency has reduced, temporarily at least, the purchasing power of China for foreign products. The recent drastic fall in the price of silver is the outstanding feature of the Oriental economic situation. The prospect for a stabilization of the Chinese monetary situation in the near future does not appear particularly bright and this, together with the renewed uncertainty as to the political situation, makes the Chinese market outlook less favorable for the coming season. In Japan, the return to a gold currency basis seems likely to aid stability to the Japanese financial position but this is probably more than counterbalanced by the relatively low price of raw silk, Japan's principal export, and the prospect for some reduction in the outlet in China for Japanese goods. Nevertheless, it does not seem likely that these conditions will do more than check somewhat the rather pronounced upward trend in Japanese demand for our principal agricultural exports to that market, namely, cotton and wheat.

Competition of foreign agricultural products in domestic and foreign markets seems likely to be greater on the whole in 1930 than last year. Prospects vary considerably, however, for different products. The general trend of foreign wheat production is upward. Last year extremely unfavorable weather conditions in the principal foreign surplus areas both in the Northern and Southern Hemispheres reduced competition from foreign wheat. Some reduction in foreign rye production in 1930 may be anticipated in view of relatively large production and low prices of the last two years. Flaxseed production in foreign countries, particularly in Argentina which produces about three-fourths of the world's total, was materially reduced in 1929 by unfavorable weather conditions. The trend in flaxseed production in Argentina is upward and a considerably larger supply of Argentine flaxseed in 1930-31 may be expected.

American cotton appears to be meeting somewhat more competition from foreign cottons. This seems to be due in part to larger supplies of foreign

cotton and in part to improvements in the quality of some foreign growths, notably in India. The tendency to increase the proportion of very short staple cotton in some of the States of the United States tends to bring American cotton into sharper competition with the Asiatic growths. An increase in the supply from other foreign countries, particularly those in South America and Africa, must be considered a distinct probability for the future, but this is likely to be influenced to a great extent by world cotton prices, which in turn are influenced largely by production in the United States.

Production of tobacco that is competitive with our bright flue-cured in British African colonies has apparently received a severe setback as a result of overstocking and low prices in the British market. No other foreign areas promise serious competition for our flue-cured tobacco in the near future. In dark tobaccos, however, the situation from a long-time point of view seems to be less favorable in view of a tendency to increase production of competitive dark types in Europe and some other foreign areas.

Large crops of apples in Europe and eastern Canada resulted in an increase in competition met by our apples in foreign markets this season. Bumper apple crops are in prospect in Australia and New Zealand which will restrict the outlet for our cold-storage apples during the last part of the current marketing season. Some decline in foreign competition during the 1930-31 season seems reasonable. Increasing production and export of oranges in Brazil and South Africa are apparent, which means more competition for American oranges shipped to European markets during the summer.

An upward movement in the European hog-production cycle has got under way. The movement is being stimulated by the large supply of cheap feed-grains. Increased pork production will undoubtedly mean a considerable increase in competition for American pork products in European markets toward the end of the present marketing season (ended in October) and during 1930-31. Large supplies and low prices of vegetable oils in Europe seem also to be having an adverse effect on the demand for American lard. Foreign dairy production is now fairly stable with prospects of only moderate increases in supply. The gradual increase in foreign wool production in evidence during recent years was halted, temporarily at least, in 1929 and no significant trend either upward or downward is now in prospect for the next year or two.

AGRICULTURAL CREDIT

The outlook for farm-mortgage financing and for marketing credit is more favorable than a year ago. On the other hand, the outlook for production credit, especially in the early months of the year when important production requirements must be met, appears less satisfactory in most of the South. In the East, the supply of production credit will be about the same as last year; in the rest of the country the outlook varies from section to section with the supply of credit largely influenced by local factors.

The money market in the United States has eased materially since October, when the securities market entered a period of drastic liquidation. The easing of central money market conditions, bringing to a close the extraordinary rise in money rates which began early in 1928, resulted in a general downward movement in interest rates.

Extensive open-market purchases by the Federal Reserve System and two successive reductions in the discount rate of the Federal Reserve Bank of New York, lowering the rate from 6 to 4½ per cent, contributed materially to the easing of credit conditions. Other Federal reserve banks have reduced discount rates, the rate now being 4½ per cent in seven banks and 5 per cent in the other five banks. Interest rates on commercial paper have declined from a peak of 6¼ per cent to 4¾ per cent.

Further reductions in short-term open-market rates and a continuation of a more gradual decline in interest rates on long-term borrowings may be anticipated. In general, this should have a favorable effect on the available supply and cost of funds for farm-mortgage loans and for certain types of short-term credit. As in other years, however, sectional differences in farm returns will have an important bearing on local supply of funds, liquidation of old loans, need for new advances, and credit standing of borrowers.

The unfavorable bond market during 1929 made it difficult for the Federal and joint-stock land banks to sell bonds on a satisfactory basis, resulting in a material curtailment of funds available for loans. Some betterment is

anticipated as the result of easier conditions in the central money markets, although improvements are not likely to be reflected in lower rates to farmer-borrowers during the early months of the year. Rates on mortgage loans from insurance companies may be expected to decline.

Credit to finance the marketing of farm crops already has reflected the change in the money situation. Rates on bankers' acceptances have declined from the peak of $5\frac{1}{2}$ per cent of last June to $3\frac{3}{8}$ per cent at present (February 1). Rates on direct loans by the intermediate-credit banks and on other loans based on warehouse receipts also have decreased from the high levels of last fall, and further reductions are in prospect. To these changes, affecting favorably the outlook for marketing credit, should be added the effect of commodity loans by the Federal Farm Board to cooperative marketing associations at favorable rates of interest. Unless some unforeseen development should occur before the next harvest period, ample credit for the marketing of farm products should be available at lower rates than in 1929.

The cost of credit for production in farming has shown little correlation with year-to-year changes in central money market rates; therefore, no appreciable change in the rate for production loans is anticipated. Interest rates on production loans from the intermediate-credit banks respond more readily to changes in central money market quotations as evidenced by the fact that since the middle of November seven banks have made reductions, ranging from one-fourth to 1 per cent. Loans from this source, however, provide only a small fraction of total requirements for production credit.

The supply of credit for production purposes will be less adequate in some sections of the country than in others. The extraordinary developments in the security markets during the last year have contributed to some shifting of funds away from agricultural areas. Partly in consequence of this, country banks in many sections entered the new year with a relatively large volume of borrowing, although not materially different from the high level of a year earlier. But the situation this year is characterized by a somewhat lower level of demand deposits. Time deposits, which usually show a more or less steadily upward growth in agricultural sections, declined slowly during most of 1929.

These factors and others, including bank failures in some areas, indicate a decline in the ability of country banks in some sections to provide funds for production purposes, especially during the early months of 1930. In the industrial States of the East, it is anticipated that loanable funds will be available, in about the usual supply, to farmers who have reasonably satisfactory credit standing. Some reduction of the credit supply, however, is indicated in the Southeastern States, and in the southwestern part of the Cotton Belt, where returns from last year's cotton crop were low and where a short feed crop probably will necessitate some increase in short-term borrowing. In other regions of the country conditions vary from section to section and the prospective supply of production credit necessarily will be governed by the local situation. In any section, the liquidation of crops now held in storage will be a factor in determining the local demand for and supply of credit.

As in other years, cost of merchant credit, especially in the South, continues to be much higher than the cost of other principal forms of credit. For this reason, farmers should, whenever possible, use credit from banks or other specialized credit agencies, and obtain the advantage of a cash price, rather than buy supplies and equipment on time from merchants and dealers.

FARM LABOR, EQUIPMENT, AND FERTILIZER

With industrial activity expected to continue at lower levels than a year ago, a somewhat larger supply of labor for farm work will be available, and probably at slightly lower wages, during the first half of 1930 than during the first half of 1929. Should the expected increase in industrial activity occur during the second half of 1930, there will be a tendency for the supply of farm labor to decrease with the probability of higher wages during the last quarter of 1930 than prevailed during the last quarter of 1929.

The high level of business activity during the spring and summer of 1929 was responsible for a decrease in the supply of farm labor and slightly higher wages. During the third quarter industrial activity slackened, and by the fourth quarter farm labor was more plentiful and wages were slightly lower than for the same periods in 1928.

Any changes in the supply of farm labor will be more pronounced in sections adjacent to industrial centers, and, perhaps in some sections where the mechanization of agriculture is taking place rapidly. Any material expansion in the acreages, or increase in the yields of crops, will tend to increase the demand for labor and to strengthen wages.

The general price level for farm machinery is expected to remain about the same for the current year as during the last four years. Indications point to an increased demand for tractor-drawn equipment, especially in the Great Plains wheat region, in the western cotton region, and in the central Corn Belt, with consequent reduction in the demand for horse and mule drawn machinery.

Decreased building activity during 1929 was reflected in declining prices for building materials, especially lumber. Unless residential building activity in 1930 should increase materially over 1929 it is likely that the prices to farmers for most building materials will average less in 1930 than in 1929, but may strengthen somewhat during the year.

According to fertilizer tag sales, purchases of fertilizer in the Southern States in 1929 were slightly below those of 1928, as was forecast in the outlook report of 1929. This decrease occurred in the group of Southern States east of the Mississippi River and was sufficient to more than offset increased purchases by the group of cotton States west of the Mississippi. For the United States as a whole, there was a slight increase in the total sales, caused by an increase in takings by the Northern States.

Sales of fertilizer are closely related to the gross income per acre for important fertilizer-consuming crops in the preceding year. The gross income from these crops in some sections was somewhat greater in 1929 than in 1928. Some increase in the use of fertilizer in 1930 is to be expected in those sections in which gross incomes were more favorable in 1929 than in 1928.

Both wholesale and retail fertilizer prices are lower than a year ago and no immediate increase in price is in evidence. In November, 1929, the wholesale price of fertilizer materials was 4.5 per cent below November, 1928. Prices of potash materials were about 1 per cent above a year ago; superphosphate was 5.3 per cent lower, sulphate of ammonia about 10 per cent lower, and nitrate of soda 3 per cent lower, than last year. Retail prices of fertilizer and fertilizer materials are about 3 per cent below those of last year.

COTTON

The following statement presents a brief review of certain phases of the cotton situation during recent years, up to the early part of January, 1930. In conformity with existing legislation limiting the scope of reports on cotton, no attempt has been made to project the trends of these data or to make any forecast or prediction with respect to future prices of cotton or the trend of these prices.

Acreage and production of cotton during the last five years, with the exception of 1927, have been held at comparatively high levels. It seems certain that any increase at present would be unwise. In view of all the conditions surrounding the cotton industry, it seems highly desirable that cotton growers this year should give especial attention to economical production. More, perhaps, is to be gained this year than in most years, from holding the expense of production in relation to output to the minimum. This may be accomplished by good farm management and cultural practices, such as careful selection of land, including the elimination of those parts of individual farms not profitable for cotton at present prices, timely planting and cultivation, judicious use of fertilizers (taking into account the price of fertilizer and the price of cotton), careful selection of seed varieties for the particular location, and production of farm and family supplies. Other enterprises that offer equal promise of income or that make for reduced farm and family expenses should be substituted for cotton wherever possible.

In the year 1926, acreage and production in the United States were the largest in history. The acreage harvested was 47,100,000; the average yield per acre was 182.6 pounds; and final ginnings were 17,800,000 running bales. This crop, added to a world carry-over of 5,400,000 bales on August 1, 1926, gave a total world supply for the 1926-27 cotton season of 23,200,000 American bales. The supply of all growths was 36,300,000, calculating foreign growths to equivalent 500-pound bales. Under the weight of supply, prices broke precipitately

and on December 3, 1926, reached the low point of 11.4 cents per pound for middling $\frac{3}{8}$ -inch in the 10 designated markets. Prices to growers generally were less than in these central markets and in some parts of the Cotton Belt considerable quantities of lower-grade cotton were marketed at 8 cents a pound and less. Low prices, however, had the effect of stimulating consumption and exports. World consumption gained rapidly during the latter half of the 1926-27 season, and for the season as a whole reached the high total of 15,800,000 American bales (Federation of Master Cotton Spinners). American exports also gained and reached 11,000,000 bales for the season. The trend of prices during the latter half of the season was upward and the 10-market average for the year was 14.4 cents a pound. The season of 1926-27, it may be noted, was one in which production materially exceeded consumption and on July 31, 1927, there were left 7,800,000 American bales and 10,600,000 bales of all growths of cotton in the world to be carried over.

In response to the low prices received for the 1926 crop, cotton acreage was substantially reduced in 1927 and in the United States 40,100,000 acres were harvested. On this acreage an average yield of 154.5 pounds resulted in a total crop of 12,800,000 bales; and this, with the carry-over of 7,800,000 American bales, gave a total world supply for the season 1927-28 of 20,600,000 American and 34,000,000 bales of all growths. The season started off with consumption at high levels, the rate during the first six months being favorably influenced by the supply of cheap cotton still available from the season of 1926-27. As this influence waned, however, the rate of consumption declined and world consumption of American cotton for the season dropped to 15,400,000 bales (Federation of Master Cotton Spinners). Exports for the season fell also to 7,500,000 bales. The average for the season 1927-28 of prices quoted in the 10 markets was 19.7 cents a pound. World consumption of American cotton in the 1927-28 season exceeded the crop of 1927, and the world carry-over of American into the season 1928-29 was 5,100,000 bales. The carry-over of all growths was 9,400,000 bales.

As a result of better prices for the crop of 1927 the acreage in the United States in 1928 was increased to 45,300,000; the average yield in that year was 152.9 pounds per acre; and the crop amounted to 14,300,000 bales. This crop, with the carry-over, gave a total world supply for the 1928-29 season of 19,400,000 American bales and 35,000,000 bales of all growths. World consumption, however, in the 1928-29 season was again slightly retarded, the total for the year being 15,100,000 American bales (Federation of Master Cotton Spinners). Exports in that year were 8,000,000 bales. Prices for the 1928-29 season were rather steady, tending to strengthen gradually until early March, and then to decline slowly, the average for the season being 18.7 cents a pound. On July 31, 1929, there were approximately 4,500,000 bales of American and 9,300,000 bales of all growths left in the world to be carried over into the 1929-30 season.

In 1929 the acreage was again increased, bringing the total harvested in the United States to 46,000,000 acres. With an indicated yield of 155.3 pounds lint per acre, production in the United States has been estimated to be 14,900,000 bales of 500 pounds. In recent years total United States cotton production in terms of running bales has been about 200,000 less than of equivalent 500-pound bales. This crop, with the carry-over of 4,500,000 bales, gives the total world supply of American cotton for the season now estimated at about 19,400,000 bales.

World consumption of American cotton for the four months ended November 30, 1929, according to the New York Cotton Exchange Service, amounted to 4,900,000 bales, as compared with 5,100,000 bales in the corresponding period of the previous season. Domestic consumption of American cotton from August 1 to December 31, 1929, amounted to 2,600,000 bales, which was slightly less than that for the corresponding period in 1928.

WHEAT AND RYE

There is little in the wheat situation in the United States and other countries at present to indicate that prices for the 1930 crop of the United States will be much different from those prevailing for the 1929 crop, unless fall-sown wheat suffers severe winter damage or the spring-wheat acreage is reduced. World stocks will be somewhat reduced on July 1, 1930, from those on hand July 1, 1929, but the world acreage will probably not be materially changed and yields per acre are not likely to be so low

as in 1929, when they were below average. World demand for wheat appears to be increasing although the annual increase may be checked occasionally by unfavorable financial or international-trade conditions. This increased demand is due to growth of population and to the tendency to shift, in consumption, from other breadstuffs to wheat. World production of wheat, however, is keeping pace with the increasing demand, so that there is little prospect for a general upward trend in prices for some years to come. Farmers of the United States, therefore, must expect to meet continued keen competition in export markets from Canada, Australia, and Argentina, and later possibly from Russia.

The estimated world total acreage, exclusive of Russia and China, for harvest in 1929, was 245,000,000 acres, as compared with 244,700,000 acres in 1928, and a 5-year average of 234,000,000. There has been a tendency to increase acreage in all important exporting countries during the last five years. It is possible that acreage expansion may be checked temporarily by the experience of the last two seasons. Preliminary estimates indicate that the acreage harvested last season in European countries (outside of Russia) was somewhat less than the high figure of 1928. In some of the important European countries prices have been relatively low for the second successive year, which may tend to discourage planting. Rumania has reduced its fall-sown wheat acreage, but reports from northern Europe seem to indicate that the acreage will be maintained in most countries. Conditions are not very favorable for expanding the wheat area during the coming year in surplus-producing countries competing with the United States. It is possible that Canada will maintain its present acreage, but a low price in 1928-29 season, followed by a season of low yields in 1929-30 and only moderate prices, may discourage expansion for a short time. Furthermore, the Prairie Provinces went into the winter with a deficiency of moisture, which may tend to reduce yields below average in 1930 unless the spring season is very favorable. Not much, if any, expansion is to be expected in Australia, where some areas have had a short crop in the season just closing. In Argentina, low wheat prices and low yields may tend to encourage shifting from wheat to corn (for corn prices have been good and there is prospect of a good crop) and to flax, for flax prices are unusually high.

Fall seedings in Russia have been about the same as last year, notwithstanding efforts to increase the acreage. The Government hopes to increase spring-wheat area, but the actual increase to be expected is uncertain. It does not, therefore, appear that there is much, if any, likelihood that Russia will be in position to export appreciable quantities next year, unless the yield is high. In the course of a few years Russia may again become an important factor in the world markets.

The production of 41 countries in 1929 (which in 1928 harvested 96 per cent of the world's crop, outside of Russia and China) is now estimated to be 3,273,000,000 bushels, as compared with 3,803,000,000 last year, and the 5-year average (1924-1928) of 3,384,000,000. However, the reduced production in 1929 was brought about by reduction in yield and not by reduction in acreage. The average yield per acre for all countries reporting acreages and yields in 1929 was 14 bushels, as compared with 16 bushels in 1928, and the 5-year average of 15 bushels per acre. There are some indications, however, that yields per acre have a slightly upward tendency. It appears certain that the yields in 1928 were abnormally high, whereas the yields of last season were about as much below average as those of the previous season had been above.

The rye crop in Europe, where most of it is grown, has been large for the last two years and prices have been low; this may tend to cause some shifting to wheat. The rye crop in the United States has been declining rapidly during recent years.

It is probable that world consumption of wheat this season will exceed production and that stocks will be somewhat reduced by the beginning of the next crop year, July 1. Stocks on farms in the United States on January 1, 1930, were about 50,000,000 bushels below stocks a year ago, but this is largely offset by an increase in the visible supply and in mill stocks compared with a year ago. The carry-over of old wheat for North America at the close of the marketing year July 1 will probably be large, but if the expected increase in exports over those of this season to date materializes during the next few months stocks will be less than on July 1, 1929. Stocks of wheat in Argentina and Australia

will probably be smaller on account of the very short crops, so that export demand for United States wheat should be better in June, July, and August than in the corresponding months last year. Present prospects as to acreage indicate that with average yields the world supply of wheat for the 1930-31 season may be about equal to the supply available for this season. With a smaller carry-over, world prices might average slightly higher, but any great improvement in prices could result only from yields below average. Similarly a season of yields higher than average would result in lower prices.

WINTER WHEAT

The area seeded to winter wheat in the United States in the fall of 1929 is estimated to be 43,690,000 acres. This represents a decrease of 8 per cent from the large seeding in the fall of 1927, but is 2 per cent larger than the area seeded in 1928 and is greater than for any other year since 1922, when 46,091,000 acres were sown. The most important increases occurred in the hard winter wheat States of Kansas, Colorado, and Texas, and in the northern Great Plains States. There was but little net change from last year in the soft winter area of the Corn Belt and Appalachian States. Seedings in the northwestern white wheat States were about 5 per cent less than last year, probably because of the severe drought, but this decrease may be of little significance, since in former years low seedings in the fall have been followed by higher seedings the next spring.

Unless adverse conditions develop between now and harvest time, another large crop of winter wheat will be produced in 1930. If yields and abandonment are equal to the average of the last 10 years, the acreage seeded would result in a production of approximately 570,000,000 bushels, which would be only slightly less than the large production of 578,000,000 bushels in each of the last two years. Of this total, hard winter wheat would comprise about 345,000,000 bushels, soft-winter wheat 180,000,000 bushels, and white wheat 45,000,000 bushels. This production would keep us on a level far above domestic requirements for hard-winter wheat and slightly above our domestic consumption of soft-winter wheat, which in recent years has been approximately 200,000,000 bushels for hard winter and 180,000,000 bushels for soft winter wheat.

HARD SPRING WHEAT

Despite a slightly larger acreage seeded in 1929, production of hard spring wheat in the United States was considerably less than in 1928. The severe drought which prevailed over most of the region resulted in yields materially lower than are normally obtained. With 10-year average yields, the same acreage would have resulted in a production of hard spring wheat of about 160,000,000 or slightly above our normal domestic requirements, which are in the neighborhood of 150,000,000 bushels. With another large crop of hard red winter wheat in prospect, hard spring wheat growers are likely to find that an expansion in the present acreage of this class of wheat is undesirable. Any expansion would probably result in lower prices, if average or better than average yields are obtained, unless the protein content of hard winter wheat is lower than in 1929. In fact, growers may find it profitable to reduce their present acreage somewhat and turn to flax, particularly if the growing conditions of the hard winter crop continue favorable. (See flax report for a comparison of the average returns from the two crops.)

DURUM WHEAT

Prices of durum wheat will probably continue relatively low for another season unless acreage in the United States is further curtailed or production in other competing countries is reduced. There are, however, some indications of reduced acreage in the United States and smaller crops in other countries. Developments in north Africa and southern Italy should be watched carefully during the next few months in order to judge how large an acreage may best be planted in the United States.

The durum wheat crop of 1929 for the United States, which amounted to about 57,000,000 bushels, was the smallest since 1926. Thus far this season, however, durum wheats have sold at prices considerably below other spring wheats. A large carry-over in the United States and a large crop in southern Italy have greatly weakened demand. Exports have been small, so that stocks of durum wheat at Duluth and Minneapolis, as of January 4, were only slightly

smaller than a year before. It seems likely that exports will be somewhat larger toward the end of the season.

Domestic requirements, including seed, mill grindings, feed, and mixing with other wheats, probably amount to about 40,000,000 to 45,000,000 bushels, and when prices are low the disappearance within the country may exceed these figures.

It seems unlikely that as large a crop as that of 1929 will be repeated. Conditions in north Africa to date appear to be somewhat unfavorable for the 1930 crop. Tunis reports the same acreage as last year. Scarcity of rainfall has been unfavorable to germination and growth of the crop in Morocco. Droughty conditions have prevailed in Algeria until recently. Canadian acreage is not likely to be expanded much, if any, because of the low prices of the last two seasons. Foreign competition of durum in the coming year, therefore, is not likely to be greater, if as great, as during 1929-30.

In 1929 the acreage of durum harvested was reduced about 22 per cent from the previous year's level. A further reduction of 19 per cent for 1930, if accompanied with average yields, would result in a crop as large as 1929. Whether such a reduction will be advisable will depend largely upon the output of the 1930 durum production of foreign countries. Further information concerning the outlook for the crop in northern Africa and southern Italy will be available before planting time, and spring-wheat growers should take this into account in planting their acreage of durum wheat.

FLAX

Present prospects indicate that higher returns are to be expected from flax in 1930 than from wheat and other small grains grown in the same area and under the same conditions. Some further expansion in flax acreage is therefore warranted on land that is free from weeds or otherwise suitable for flax or on which yields greater than the average of the area may be expected. An increase in acreage of one-third could be made without fear of reducing domestic prices to the world level. Such an increase in acreage with average yields would produce a flax crop of approximately 32,000,000 bushels, or about 11,500,000 bushels below domestic consumption of the last two years.

The prevailing high prices for flaxseed in the United States are due largely to a decreased world production, to low stocks of both seed and oil, and to the differential advantage afforded by the tariff. The 1929 flax crop in the United States totaled only 16,838,000 bushels, the smallest production since 1922. Although the acreage seeded was larger than that of any year since the record crop of 1924, the yield was sharply reduced by the severe drought during the summer. If last season's carry-over is added to the current production and probable seed requirements for 1930 are subtracted, a supply of approximately 19,000,000 bushels remains for commercial purposes. This represents a reduction of about 2,600,000 bushels from the short 1928-29 domestic supply and 11,000,000 bushels from the 1927-28 supply.

Supplies of flaxseed in Canada and Argentina, whence come practically all of our imports, are also shorter by about 29,000,000 bushels than last year. The 1929 Canadian crop is estimated to be 2,007,000 bushels and the Argentine crop 55,627,000 bushels. The production in these countries the preceding year was 3,614,000 bushels and 82,791,000 bushels, respectively. No estimate is yet available for the 1930 Indian crop but the acreage is placed at 2,258,000 acres which compares with a harvested acreage of 2,568,000 in 1929. The carry-over of old-crop seed in Argentina and India was small, and less seed will be available for shipment from Argentina during the remainder of the season than during recent years.

Domestic disappearance of flaxseed during the last two years has averaged around 43,500,000 bushels. Our domestic supply of 19,000,000 bushels thus could supply less than half our current consumption. Starting with very heavy stocks at the beginning of the 1928-29 season, linseed oil passed rapidly into consuming channels and the disappearance of 804,000,000 pounds for the year ended September 30 was the largest on record. This heavy consumption has reduced stocks to the lowest figure since 1925. In view of the relatively high prices of linseed oil which are likely to prevail during the remainder of the crop season and considering the prospective lower levels of building and business activity, consumption of oil may be curtailed somewhat below the

high levels of the last two years. Some substitution of soybean and other drying oils may be encouraged by higher linseed-oil prices, but this is not likely to be an important factor in the linseed-oil market.

European imports of Argentine and Indian seed during the last season were of good volume until about the middle of August, when they declined sharply to an unusually low level and have continued low since that time. In view of the short crop in Argentina and the resulting higher prices for seed, it is probable that European imports will not be as large as for the last season. This will leave relatively larger quantities available for export to the United States. Feed supplies in Europe are considerably larger than last year, because of unusually favorable feed-grain crops, so the foreign demand for linseed meal is likely to be lower than last year.

The relatively high prices prevailing for flaxseed in the United States is likely to encourage some further expansion in flax acreage. If farmers respond to these relative prices in 1930 as they have in the past they will increase their flax acreage between 40 and 50 per cent over the acreage in 1929. Farmers should hesitate to make such a marked increase as this, for it unquestionably would result in prices much lower than those received for the 1929 crop. If acreage is not increased more than one-third, flax promises to be a more profitable crop than wheat and other small grains grown in competition with it. At average yields, the net returns per acre from flax selling at \$2 per bushel would be equivalent to those from wheat selling at \$1.40 per bushel. With the same average yields, flax at \$1.90 per bushel would be as profitable as wheat at \$1.30, and at \$1.60 per bushel as profitable as wheat at \$1.10. On the other hand, if flax sold at \$2.20 per bushel, wheat would have to sell for slightly over \$1.50 to be as profitable. The relation between acre returns from flax, oats, and barley is even more favorable to flax. In the four spring-wheat States flax has averaged 7.9 bushels and wheat 12.2 bushels per acre during the last 10 years.

RICE

The outlook is for a continued improvement in rice prices in the southern belt for the remainder of this season and through the 1930-31 season. California prices are expected to show some further advance this year, but prices of California rice during the 1930-31 season will be influenced to a considerable extent by developments in the crop and market situation in Japan. Demand for American rice is increasing slowly in the United States, insular Territories, and foreign countries, but competition of foreign-grown rice is likely to prevent much further increase in foreign demand.

Prospects are that, with about the same acreage, rice production in the southern States will be smaller in 1930 than in 1929, when yields and quality were much above average, and that prices for southern rice will be higher. It usually requires two or three years for rice acreage to change materially because of production practices peculiar to rice growing and because of the relatively large capital requirements. Rice production in the United States for the three years 1923-1925, inclusive, was relatively low and during the three years 1926-1928, inclusive, production was relatively high. In 1929, production was well under the level of the previous three years; 1929 appears to be the first year of another period of relatively low production.

Rice acreage in the southern belt for 1930 probably could be increased as much as 4 per cent, or about 25,000 acres, without depressing prices below the 1929 levels. The production of rice in the southern belt for 1929 was 34,000,000 bushels as compared with 35,000,000 for 1928 and 36,000,000 for 1927. The 1929 yield of 45 bushels per acre was well above the 10-year average of 40 bushels, and largely for that reason the total production in 1929 was only 1,000,000 bushels short of the 1928-29 crop. The season's supply of southern rice, however, was 1,300,000 bushels short of last year's because of a smaller carry-over into 1929-30. The good quality of this year's crop has materially increased the mill turnout, thus making the year's supply of milled rice proportionately greater than the estimate of rough rice. Exports of southern rice for the first five months of the current season were less than in the corresponding period of 1928-29. It seems probable that exports will continue to run behind last year's in view of the low prices of Asiatic rices in competitive markets and the tendency for prices of United States rice to rise. This reduction in exports may result in a slightly larger carry-over of southern rice

at the beginning of the 1930-31 season, but this is likely to be offset by the prospect of a small production of southern rice in 1930.

The 1929 crop estimate for California was 6,000,000 bushels as compared with 8,000,000 bushels harvested in 1928. Stocks of California rice on August 1, 1929, were less than on the same date in 1928. California rice is, therefore, in considerably smaller supply than last year, but is still definitely on an export basis. The low prices prevailing in Asiatic rice-exporting countries may restrict purchases of California rice by Japan, while the large rice crops of Italy and Spain will tend to reduce California exports to Europe and South America. On the other hand, there is some prospect of larger rice exports to Japan this season than in 1928-29 in view of the reduction in Japanese production in 1929 and the recent stabilization of Japanese currency. In view of the smaller supply of California rice, however, it seems probable that exports will be sufficiently large in 1929-30 to result in some further reduction in the stocks on August 1, 1930, as compared with August 1, 1929. If rice acreage in California in 1930 is maintained or slightly increased over last year's figure, and an average yield obtained, the production will be about equal to requirements of the domestic market and Hawaii. Production in excess of this quantity must be sold in foreign markets, particularly Japan, about which no prediction can now be made.

OATS

Oat production for market during the 1930 crop year is not likely to bring better returns to producers than during the past crop year. No material improvement in either domestic or export demand is in prospect, whereas more active competition from larger supplies of other feed grains appears probable.

Supplies for the current year are below those of last year by around 150,000,000 bushels or 10 per cent. A decrease of 200,000,000 bushels in crop outturn was partially offset by an increase of 50,000,000 bushels in carry-over at the beginning of the season, August 1, 1929. This decrease in production was due to a decrease of around 1,500,000 acres in the area harvested in 1929 and a yield 3.7 bushels below the high yield of 1928. Production of oats in 1929 was below 1928 and below average in each grand division except in the South Atlantic States, where production was fully 10 per cent above the 10-year average (1918-27). In the North Atlantic States production of oats was 25 per cent below average. In the North Central States west of the Mississippi River, where nearly half the entire crop and over half of the market oats are produced, the 1929 crop was only 2 per cent below average. There has been a downward trend in the proportion of the oat crop of this area shipped to market which reflects the increasing importance of livestock feeding in this area. This trend will probably continue since livestock numbers have shown some further expansion in this area.

Demand for oats during the next crop season is not likely to be stronger than during the current year, beginning August 1, 1929. The continued decline in the number of horses and mules during coming years may be offset to some extent by increased numbers of cattle. Increased quantities of oats have been used in mixed feeds for dairies and poultry and this may broaden further the outlet for market oats during this year. On the other hand, should supplies of other feed grains be equal to the average, the market demand for oats may be reduced. Export trade in oats is of little significance since less than 3 per cent of the crop is usually exported. Canada is the principal destination of oat exports; smaller quantities go to Mexico and Central American countries. The steadily expanding acreage of feed grains in Canada during recent years appears unfavorable to increase import takings of United States oats in the future. Even with such a drastic reduction in the Canadian oat crop as has occurred during 1929, when only 280,000,000 bushels were produced as against 452,000,000 bushels in 1928, United States exports to Canada have been smaller than during the preceding year. Canada still has on hand relatively large supplies of other feedstuffs, particularly barley, as a result of smaller exports for the season to date, which may restrict import inquiry for the United States oats during the remainder of the season.

Acreage of oats in the United States has had a rather definite downward trend since 1921. The increase in the seeded area in 1925, due to a large abandonment of winter wheat, was again followed by a rather marked decrease

in acreage for every following year. In view of the prospects for further declines in the horse population of the United States, both in cities and on farms, and the apparently lower gross and net returns from market oats when compared with competing crops, a further decline in oats acreage is probable. Yields for the United States as a whole have tended slightly upward since 1921 and this if continued, may tend to offset the decrease in acreage.

BARLEY

No material improvement in demand for United States barley is in prospect for the crop year beginning August 1, 1930. Prospective numbers of livestock indicate no expansion in domestic requirements and European prospects suggest only a slight increase in foreign demand. While an increase in European demand for feed grains may be reflected in greater takings of United States barley, increased competition may be expected from Canada and Argentina where acreage is expanding. Barley is being substituted in increasing quantities for oats and corn in hog and cattle rations and giving larger per-acre returns than oats. In many districts barley produces more pounds of feed per acre than oats; in such districts barley will probably continue to be worth more per acre than oats in years of average yields even should barley production continue to increase.

A record acreage of barley totaling 13,212,000 acres was harvested in 1929. Yields were about 5 bushels per acre less than in 1928 but only slightly below average, and a total crop of 307,105,000 bushels was produced compared with 357,487,000 in 1928. Farm and market stocks on August 1 totaled 24,880,000 bushels compared with 11,147,000 the previous year, so that total supplies of barley were only about 10 per cent below the record quantity of last season.

Barley production in Europe in 1929 was about 9 per cent above the 1928 crop and, in addition, Europe had large oat and potato crops and an exceptionally large corn crop. There was also increased competition from Danubian and Russian barley in European markets during last season so that imports of American barley were greatly reduced and there are no prospects of material improvement in export demand during the remainder of this crop year. United States barley exports from August 1 through December totaled only about 14,500,000 bushels compared with 41,000,000 bushels for the corresponding period last year. Although the 1929 United States crop was around 50,000,000 bushels below the record outturn of 1928, most of this decrease has been offset by the increased stocks at the beginning of the season and by the reduced exports, so the carry-over next August now promises to equal the large supplies in store at the beginning of the current season unless there is an unexpected increase in domestic consumption or in exports.

Barley has been a more profitable crop than oats in the North Central States during the last few years. These States produce approximately 80 per cent of the total domestic crop. Based upon the 5-year average yields of 27 and 32 bushels per acre of barley and oats or 1,296 and 1,024 pounds, respectively, in these States, oats would have to sell at 46 cents a bushel at the farm to yield the same returns as barley at 55 cents, the average farm price December 1. Barley at 50 cents would be equivalent to oats at 42 cents per bushel and barley at 60 cents would equal oats at 51 cents per bushel. With per-acre yields equal to the average of the five years 1924-1928, gross per-acre returns on barley were \$17.75 compared with \$13.13 for oats on the basis of the average farm price of those years. For the four spring-wheat States the gross per-acre returns for barley were \$14.50 compared with \$12.10 for oats, \$15.70 for wheat, and \$16.20 for flax. In view of the probable continued decrease in horse numbers and with numbers of feed animals likely to increase, a continuation of the favorable margin of barley over oats seems likely.

CORN

With normal planting conditions, an increase in corn acreage in 1930 of nearly 2 per cent might be expected. Should an average yield per acre be obtained corn production would be about 5 per cent larger than in 1929. With the possibility of lower feeding requirements and no material improvement in commercial or European demand for American corn, prices for the 1930 corn crop are likely to be lower than for either the 1928 or 1929 crops. Some improvement in cash corn prices is possible between January, 1930, and the period

when new-crop prospects begin to affect the market. With an increase in cattle numbers definitely underway, the long-time outlook is for corn prices to be somewhat more favorable relative to livestock prices than during recent years.

The total supply of corn on November 1, 1929, was about 6 per cent, or 175,000,000 bushels, less than the supply of each of the last three years and was the smallest since 1924. About 10 per cent less oats and barley was available at the beginning of this season than last, and the grain-sorghum crop in 1929 was nearly 30 per cent smaller than in 1928. Supplies of hay are slightly larger than last year.

Distribution of the 1929 crop differed materially from that of 1928. About 71 per cent of the 1929 corn crop was produced in the North Central States as compared with 75 per cent of the 1928 crop and 69 per cent of the 1927 crop. A year ago supplies of corn were large in the Corn Belt, especially in the eastern half and smaller than average in the Southeastern and far Western States. This season the supply of corn in the eastern half of the Corn Belt was about 12.3 per cent below a year ago and in the western half 7.4 per cent below. In Nebraska and South Dakota, however, the 1929 production of corn exceeded that of 1928 by about 14 per cent. Production of corn in Southern States east of the Mississippi River and in the far Western States was considerably larger than in 1928 and slightly larger than average, whereas production in Missouri, Kansas, Arkansas, Oklahoma, and Texas was only 70 per cent of the 1928 production.

Farm stocks of corn on January 1, 1930, were estimated to be about 3.6 per cent less than the year previous; in the eastern Corn Belt States the decline was about 9 per cent; in the western Corn Belt about 7.4 per cent.

Demand for feeding during the remainder of this season will be less than a year ago, as there are substantially fewer hogs on farms, especially in those States in which corn production was materially less than in 1928. Declines in numbers of hogs on farms January 1 ranged from little to no decrease in Iowa, Minnesota, and Nebraska to about 5 per cent less in Illinois, 10 to 12 per cent less in Indiana, Kansas, and Missouri, and possibly 20 per cent less in Michigan and Oklahoma. The downward trend in horses and mules continues at the rate of 3 to 4 per cent a year. The lower prices of dairy products will discourage heavy feeding of corn to milk cows. On the other hand, the numbers of milk cows and of beef cattle on farms are several per cent greater than a year ago, although the number of cattle on feed is about the same. Some increase in the demand for corn in western Iowa and in Nebraska may be expected to develop because of the pronounced shortage of feed grains in Oklahoma and Texas.

European demand for American corn, which was such an important factor a year ago at this time will not tend to strengthen prices during the 1929-30 season. The 1929 European corn crop was about 676,000,000 bushels, or about 87 per cent greater than in 1928, and prospects in Argentina are for a crop larger than a year ago. The supply of other feed crops in Europe this season is also larger than last year.

Last winter market prices of corn made a sharp advance during January, largely as a result of the short crop prospects in Argentina and strong European demand, and then declined until the end of May. Influenced by unfavorable growing conditions during the summer months, and small supplies, prices advanced materially during the summer until September. They then declined until the first part of January, 1930, when No. 3 yellow corn at Chicago sold for 85 cents a bushel. During November and December, prices at Chicago averaged about 4 cents above prices the same time last year. During the last part of January, 1930, prices have been substantially lower than at this time last year. The margin between the lower and better grades of corn has been greater than usual, because of the low quality of receipts.

It is difficult to say whether the decline in the demand for corn, both domestic and foreign, is fully sufficient to offset the decrease of about 6 per cent in supply at the beginning of the season. The usual seasonal trend of corn prices is generally upward during the next few months until new-crop prospects become a dominant price-determining factor. A year ago the seasonal trend was downward during these months following the sharp rise in prices during January. Prices of corn are much more likely to follow their usual upward trend this season than a year ago and it is not unreasonable to expect some improvement in cash corn prices before June.

Unless weather conditions are particularly adverse this spring the acreage of corn planted will probably be larger than in 1929 when it was the lowest in 10

years. Acreage of corn in 1929 was unusually low in Missouri and in the eastern Corn Belt States, because of unfavorable conditions at planting time. It is doubtful if it will exceed 100,000,000 acres in 1930, as the general trend of corn acreage during the last few years has been downward in all sections except in the West South Central States. If the abandonment of winter wheat or legume-hay crops should be unusually high this winter, some additional increase in corn acreage may be expected. Yields per acre of corn in 1929 were 5.2 per cent less than in 1928 and 3.8 per cent below the 10-year average. With some increase in acreage and with average yields, a crop somewhat larger than that of 1929 would be produced. The general trend of corn yields per acre have been upward in most of the Northern States east of the Missouri River and upward rather than downward for the whole country.

The numbers of hogs to be fed from the 1930 corn crop will probably be less than from the 1929 crop, for farmers are already reducing hog numbers as a result of smaller production of the 1929 corn crop. The numbers of horses and mules will continue to decline; cattle numbers will continue to increase and conditions for dairy feeding in 1930-31 are expected to be more favorable than during the present season. Some improvement in foreign demand may be expected should the crop of feed grains harvested in Europe in 1930, and the 1931 corn crop in Argentina be average or below. If the 1930 corn crop is somewhat larger than the 1929 crop it is not likely that prices will equal those of the present season or a year ago.

There has been a downward trend in corn acreage in the States east of the Mississippi River since 1921. In 1921, the total area harvested in these States was 51,500,000 acres, but by 1928 the acreage had declined to 44,700,000, and in 1929 to 43,200,000 acres. The downward trend has been fairly general in all sections of the Eastern States and may be expected to continue for some time, but is likely to be less marked than during the last nine years. Increases in States west of the Mississippi River have partially offset the downward trend in the Eastern States so that the total corn acreage in the United States has declined only from 103,700,000 in 1921, to 100,700,000 in 1928, and 98,000,000 in 1929, which was the smallest acreage in 10 years. The upward trend in acreage west of the Mississippi River reached 55,400,000 in 1924 and since then acreage has held fairly constant. These trends of acreage indicate that during the next few years the corn acreage in the United States is not likely to exceed 100,000,000 acres, except in years of heavy wheat abandonment or in years following very unfavorable prices for cotton. The downward trend in acreage in the States east of the Mississippi River has been largely due to the downward trend in the acreage devoted to all crops in this area, the effect of the corn borer, and the unfavorable prices for corn compared with prices for other crops, notably cotton and truck crops.

Looking beyond the next year or two it appears that with increasing numbers of cattle, the price for corn will become higher, relative to prices for livestock, than has been the case during recent years. This is more likely to result from lower prices for livestock, rather than from corn prices actually above the levels for the crops of 1927, 1928, or 1929.

BEEF CATTLE

The outlook for beef cattle in 1930 is for conditions less favorable than those which characterized the industry in 1929. Slaughter probably will be about the same as in 1929 but demand is expected to be slightly less. The high phase of the beef-cattle price cycle, which has prevailed since the latter part of 1927, is expected to continue during 1930. However, average prices for all grades for the entire year may be somewhat lower than those of 1929. Beef-cattle raisers who contemplate expanding production are faced with a general tendency to increase cattle numbers and with a downward trend in prices over the next decade. Cattle feeders, also, will need to exercise great caution during the period of a declining price level.

The number of all cattle on farms apparently reached the low point of the production cycle in 1928 and since then the tendency of cattle numbers has been slightly upward. The estimated number of cattle on farms January 1, 1930, was 57,967,000. This was 1,500,000 head or 2.7 per cent more than on January 1, 1929, and 2,291,000 more than in 1928. Increases were general in all States except the far West, where a decrease of 1 per cent in the total number was shown. Most of the increase was in cattle kept for milk, including cows, heifers, and calves.

Total inspected slaughter of cattle during 1929 was 8,324,000 head, or 2 per cent smaller than in 1928, and slaughter of calves was 4,489,000 head, or about 4 per cent smaller. The 1929 decrease in slaughter was in cows, heifers, and calves; steer slaughter was larger than in 1928. The decrease in calf slaughter was largely in beef-type calves. Apparently the movement to increase cattle numbers is following the line of increasing breeding stock and of holding back calves of beef type, rather than of holding back steers.

Although the number of cattle on feed in the Corn Belt on January 1, 1930, was about 1 per cent less than on January 1, 1929, the total supply of cattle in that area which may be fed for market this year was somewhat larger than a year ago. This condition was brought about by the fact that the movement of stocker and feeder cattle into the Corn Belt during the last six months of 1929 was a little larger than in 1928, that larger numbers of cattle were raised in that area, and that on January 1 a larger proportion of the cattle were being roughed through (instead of being on full feed) than a year earlier.

Because of the lateness of the movement back to the country it seems probable that a smaller proportion of the cattle on feed January 1 will be marketed during the first three months of 1930 than in 1929. Market supplies of fed cattle during the first half of 1930, however, are expected to be about the same as in 1929. If there is a concerted effort on the part of dairymen to cull their herds more closely than usual, market supplies of slaughter cattle other than fed stock during that period will be larger than in 1929.

Market supplies of fed cattle, during the second half of 1930, will be determined to a considerable extent by the trend of cattle prices during the first four or five months of this year and by the trend of corn prices. The supply next summer and fall will probably include a larger proportion of light cattle than in 1929. Market supplies of grass and dairy cattle during the last six months of 1930 will probably be no larger than in 1929; whether slaughter of such cattle will be larger or smaller than in 1929 will depend upon the demand for stockers and feeders. Calf slaughter during the last half of 1930 will probably be smaller than in 1929.

There is no reason to anticipate any significant change in imports during 1930, although imports of slaughter cattle and calves from Canada and of stockers and feeders from Mexico increased slightly in 1929.

Cattle movements into the United States during 1929 totaled 509,000, an increase of 13,000 head over 1928 and of 55,000 head over 1927, according to records of the Bureau of Animal Industry. The 1929 arrivals represented slightly less than 1 per cent of the number of cattle on farms in the United States on January 1, 1930, or 6.1 per cent of Federally inspected slaughter in 1929. Stockers and feeders comprised about 68 per cent of the 1929 inspections compared with 71 per cent in 1928. Combined importations of dairy and breeding stock increased 29 per cent during 1929.

Conditions indicate that importations of beef into the United States during 1930 will at least equal those of 1929. The outstanding reasons for this expectation are: (1) South American beef production will be as large as, if not larger than, in 1929, especially in Argentina, which furnishes 50 per cent of the American canned-beef supplies; (2) the European market for South American beef gives no indication of material improvement over conditions prevailing in 1928 and 1929; and (3) the continued relatively favorable market for beef in the United States.

About 143,000,000 pounds of fresh, cured, and canned beef were inspected for entry into the United States during 1929, compared with about 129,000,000 pounds in 1928, and 80,000,000 pounds in 1927. Total inspections, therefore, nearly doubled in three years.

Supplies of fresh and refrigerated beef entering the United States during 1929 showed a decrease of about 25 per cent compared with 1928. This was brought about largely by decreased shipments to this country from New Zealand, but supplies from Canada were also materially reduced.

Demand for slaughter cattle during the first half of 1930 will probably be below that in the same period of 1929, but in the second six months it is likely to be nearer that of a year earlier. The recession in the consumer demand for beef, which began in the latter part of 1929, is likely to continue during the first half of the year at least. Improvement in demand during the remainder of the year will be largely governed by the extent that industrial activity increases and by the prices of other meats. Demand for feeder cattle in the spring months is not likely to equal the unusually strong

demand of last spring, but during the late summer and early fall probably will show an improvement over the corresponding period in 1929.

Demand for feeder cattle during the last half of 1929 was decidedly weaker than during the same period of 1928, particularly during the late summer and early fall. An increase of about 2 per cent in shipments to the country from leading markets during the last half of the year was accompanied by a decrease of about 11 per cent in feeder-cattle prices.

The general average of cattle prices in 1930 is likely to be slightly lower than that of 1929. Prices of the better grades of fed cattle probably will follow their usual seasonal downward course until the low point is reached in the late spring. This low point probably will not be much below the prices prevailing at the corresponding time last year. The seasonal advance on such grades, which usually comes in the second half of the year, may be retarded in the early summer as a result of a bunching of market supplies at that time. The high point of this advance is expected to be reached later than in 1929 and prices during the last quarter will average as high if not higher than in that period last year. Heavy cattle are likely to command a premium over lightweights of comparable grade.

Prices of lower-grade slaughter cattle are expected to score their usual seasonal advance during the first six months, but the extent of the advance will be influenced by the number of dairy cattle and calves that go to market during that period. But prices are not likely to reach levels as high as those of last spring. During the last half of the year the seasonal downturn in prices of these grades is not likely to carry the average below that of a year earlier.

The course of feeder-cattle prices probably will be similar to that of the lower grades of slaughter cattle. During the first half of 1930 average prices are likely to be lower than those of the corresponding period in 1929, but during the second half of the year prices probably will average about as high as a year earlier.

Considering the long-time outlook, the upward trend in cattle numbers promises to proceed at only a moderate rate during the next year or two and may not be reflected in materially increased slaughter until the latter part of 1931. It is difficult for cattle feeders to make adjustments during a period of increasing supplies and a declining price level. During the next few years, therefore, cattle feeders should exercise considerable caution.

It seems likely that the present relatively high level of cattle prices will induce the usual expansion of the industry, leading, within the next six years, to an overproduction and overstocking and a period of low prices and subsequent liquidation. During the years of increasing cattle numbers the greatest expansion is likely to occur in the central and western Corn Belt, where the greater attention to sweetclover and alfalfa culture and the impending corn-borer infestation are working in the direction of distinctly larger forage production and heavier carrying capacity of pastures. Expansion is likely to be smallest in the old range country, where the range area has been reduced by an expansion of wheat acreage and the remaining range is already well stocked with sheep and cattle.

Farmers who contemplate entering a long-time cattle-raising program or those who contemplate an expansion of their cattle-raising business face a general increase in cattle numbers and a consequent lowering of prices. Although the expected effects of expanding numbers of cattle may be modified somewhat by a normal expansion in domestic demand caused by growth of population, any marked increase in cattle supplies is almost certain to be accompanied by a lowering of the cattle-price level.

If cattle growers continue their present policy of expansion through increasing the number of breeding stock and selling at younger ages, they will be in a position to make fairly quick adjustments in production by close culling of old cows whenever the price situation makes reduction desirable.

HOGS

Hog prices in 1930 are expected to average at least as high as in 1929, and possibly higher. A reduction in slaughter supplies is indicated, but this probably will be partially offset by a decrease in foreign and domestic demand for hog products. There are no indications as yet that the 1930 pig crop will result in slaughter supplies in the marketing year beginning with October, 1930, greatly different from those expected during the current marketing year. If, however,

the relationship between hog and corn prices becomes increasingly favorable during the next few months some increase in the fall pig crop of 1930 will probably occur.

Corn Belt hog production during the last three years apparently has shown only moderate changes and has been at a level which is well adjusted to corn production. Prospects for a better domestic demand, even with a less favorable foreign outlet for American hog products during the marketing year beginning next October, indicate that a pig crop in 1930 about equal to that of the last three years would probably result in returns to hog producers equal to the average of these years.

The estimated number of hogs on farms on January 1, 1930, was 52,600,000 head, or 75 per cent less than the revised estimate of 56,880,000 head on January 1, 1929. The decrease in the Corn Belt States amounted to 2,521,000 head, or 6 per cent.

The supply of hogs going to commercial slaughter for the marketing year ending with September, 1930, is expected to be somewhat smaller than that for the previous marketing year. The pig surveys of the department showed a decrease of about 6 per cent in the 1929 spring pig crop of the Corn Belt and an increase of about 4 per cent in the 1929 fall pig crop, or a total crop for the year about 3 per cent smaller than that of 1928.

The number of hogs on farms January 1, and the relationship of the corn-hog ratio in the different Corn Belt States to subsequent marketings from those States during past years, indicate a decrease in hog supplies larger than those shown by the pig surveys. The slaughter of hogs for the four months, October, 1929, through January, 1930, of the present marketing year also points to a considerably smaller total slaughter than in the previous marketing year. The conclusion from all these indications is that marketings from the Corn Belt States in the 12 months beginning with October, 1929, will be about 2,000,000 head smaller than during the preceding 12 months; that market supplies from outside the Corn Belt will be considerably smaller; and that the inspected slaughter for the present marketing year will be between 46,000,000 and 47,000,000 head, compared with 48,956,000 head in 1928-29 and 47,371,000 head in 1927-28.

Most of this decrease in slaughter will come during the first six months of the marketing year. Supplies from April to June will probably be larger and those from July to September smaller than those of the corresponding periods in 1929. Last year, supplies from April to June were an unseasonably small proportion and supplies from July to September an unseasonably large proportion of the year's slaughter. Apparently this was due partly to some holding back of supplies that usually would have been marketed in early summer in the expectation of a marked fall price advance, such as occurred in 1928; and partly to earlier marketings of 1930 spring pigs in response to the high September prices of the previous year, and to some liquidation of hogs in the fall from a number of districts where corn supplies in 1929 were very short. There are no indications that any of these factors is likely to recur in 1930.

Slaughter during October, November, and December, 1929, totaled 13,400,000 head compared with 13,950,000 head during the same months of 1928. Although slaughter in both October and November was larger than in 1928, the sharp decrease in December reduced the total for the three months 512,000 head, or almost 4 per cent below that of the same period a year earlier. A still larger reduction has taken place in January. Part of the decrease may have been due to weather and unfavorable transportation conditions.

The December pig-survey report on breeding intentions for the spring pig crop of 1930 indicated that the number of sows farrowing in the spring of 1930 will not be greatly different from the number farrowing in the spring of 1929. The increasing favorableness of the corn-hog ratio during December and January will tend to encourage producers to carry out those intentions. At present there is little reason to expect that the total pig crop of 1930 in the Corn Belt will be greatly different from that of 1929. The total tonnage of hog products from this pig crop, however, will be influenced by the size of the 1930 corn crop.

Storage supplies of pork on January 1 were 6.6 per cent, or 44,400,000 pounds smaller than those of January 1, 1929. Lard stocks showed a decrease of 3,700,000 pounds, or 4.3 per cent. Supplies of both, however, were well above the 5-year average for that date. Stocks of dry salt pork showed the largest decrease, being 25 per cent smaller than at the same time last year, and 2.5 per cent under the 5-year average. The decrease in total stocks of pork and lard of 48,000,000 pounds is equivalent to about 300,000 hogs.

Domestic demand for pork products was materially stronger in 1929 than in 1928. A reduction of 1 per cent in per capita consumption was accompanied by a 4 per cent increase in wholesale prices and a corresponding increase at retail. This is a larger price advance than would ordinarily accompany such a slight reduction in supply. Domestic demand for lard declined, however; per capita consumption was less in spite of lower prices.

The recent declines in business activity have not as yet seemed to affect hog prices. Any influence that the recession in business may have had on the demand for pork products has been more than offset by the existing higher retail prices for beef and prospective reductions of hog supplies. A continuation of unfavorable business conditions may reduce the demand for fresh pork, particularly pork loins.

Any reduction in demand for hog products during 1930, due to unfavorable business conditions, is likely to be reversed by business improvement during the 1930-31 season. Such improvement would partially offset any influence of a downward trend in beef prices that might be underway at that time.

There are indications that as the 1929-30 pork-marketing season advances, conditions in the European markets will become less favorable for the disposition of American pork products. United States exports of cured pork and lard probably will be smaller during the 1929-30 marketing year than during 1928-29. These unfavorable developments will not attain their full significance until the early part of 1930-31 season.

Outstanding points in the European pork situation are: (1) A tendency toward generally increased hog numbers, as indicated by some increases in breeding sows and young pigs, and some upward movement in current marketings; (2) a feed supply considerably larger than that of last year, with breeding encouraged by low feed prices; (3) a downward tendency in prices of hogs, cured pork, and lard; and (4) no indication of any significant increase in buying power in the leading markets for American pork products during 1930.

In Great Britain, the leading foreign market for American pork products, the cured-pork market already is feeling the effects of larger supplies coming from Denmark. As the current season advances, increased cured-pork supplies from the Netherlands are expected, and will probably have an additional depressing effect upon British market prices. It is anticipated, however, that the less favorable continental European market for American pork products, largely lard, will not be much in evidence before the last half of 1930, but will become increasingly marked during the winter of 1930-31.

The continental market for American pork products is influenced largely by conditions in Germany, where the upward turn in hog numbers, although delayed, is definitely established. Total German hog numbers appear to be about the same as a year ago, with a substantial increase in the number of young pigs but a decline in slaughter animals. Hog prices in Germany during the first half of the 1929-30 season are expected to hold up fairly well, with marketings probably slightly below 1928-29 levels. In the second half of the season, however, marketings should run about 10 per cent heavier than a year ago. Lard imports into Germany are expected to be near 1928-29 levels during the first half of 1929-30, and from 5 to 10 per cent below during the second half. In all European markets the current low level of lard prices reflects, in part, the increased competition from vegetable oils.

Because of the unusual distribution of market supplies of hogs during the last half of the marketing year ended with September, 1929, the seasonal downturn in hog prices last summer came earlier than usual. It also ended earlier and at higher levels than in the same period of 1928. The course of prices following the low point made in late November has been somewhat similar to the upward movement which took place after mid-December of 1928. The seasonal price advance now in progress seems likely to continue through the early spring to at least as high a point as prices reached last spring. If supplies for the period are as short as the greatly reduced marketings during December and January and the January 1 estimates of hogs on farms indicate even higher prices than last spring may be reached.

The seasonal decline which usually comes in the late spring and early summer may be greater this year than that which occurred last year. Marketings at that time are expected to increase more rapidly than during the same period of 1929, both domestic and foreign demand are likely to be somewhat weaker and supplies of beef will probably be in excess of the previous year.

With hog supplies next summer probably slightly less than last summer and demand for pork at home and abroad less favorable, the average level of hog prices from June to September will probably not be greatly different from that of a year earlier. The seasonal movement of prices may be more nearly normal than it was in the summer of 1929, however, and the peak of the summer rise is expected to occur later than it did in 1929.

The level of hog prices during the winter of 1930-31 is expected to be not greatly different from that prevailing this winter unless supplies prove to be considerably larger than present information indicates. The total tonnage of inspected slaughter in the marketing year ended with September, 1929, was 4.6 per cent greater than in the previous year. The market value of this slaughter exceeded that of the earlier year by \$133,147,000 or 13.3 per cent. Average price per 100 pounds paid by packers in 1928-29 was \$10.01 as compared with \$9.24 in 1927-28.

Corn Belt hog production during the three years, 1927-1929, apparently has shown but moderate change and present indications are for but little change in 1930. Yearly slaughter from this production is at a level of from 46,000,000 to 49,000,000 head. Hog prices for this volume of slaughter have been high enough to pay an average return on corn fed by reasonably efficient producers but has not been high enough to encourage hog production outside the Corn Belt. In view of the probable less favorable export outlet for American hog products in 1931, an increase in production in 1930 would seem undesirable; but a production not greatly different from that in 1928 and 1929 will probably result in returns about equal to those years and apparently is well adjusted to Corn Belt corn production. If corn production in 1930 considerably exceeds that of 1929 the relationship of hog prices to corn prices will tend to increase numbers of hogs in 1931, assuming that Corn Belt hog producers are likely to react to such a situation as they have in the past. This would result in larger supplies and a lower level of hog prices in the marketing year 1931-32.

DAIRY PRODUCTS

Dairymen face a period of readjustment. An annual increase of about 1 per cent in milk-cow numbers is necessary to increase production sufficiently to balance increasing demand, but the number was increased 3 per cent in 1929. The number of heifers, 6 per cent greater than a year ago, is sufficient to cause still further increases in cow numbers in 1930. Although the underlying situation is not so bad as would appear from current butter prices, the duration of the period of readjustment will depend partly on the promptness with which producers adjust their methods to meet the situation, by close culling out of their old or low-producing cows, and by either marketing a larger quantity of milk in the form of veal or, in the beef sections, allowing more calves to run with the cows. With present lower butter prices, dairy cows will be fed less purchased grain this winter. Unless dairy herds are closely culled and more of the less desirable heifers sent to slaughter, there will be a further increase in the number of milk cows during 1930 and 1931.

Over a longer period the general dairy outlook is unfavorable because of the large number of heifers now on hand and being raised, and because of the probability of a marked upward trend in beef production during the next five years or more. There is an increasing number of dual-purpose cows which will be milked whenever the price of butter is sufficiently high and the price of meat animals is sufficiently low. On the whole, a conservative policy in regard to raising dairy calves is called for. Probably more calves were raised in 1928 and 1929 than can be raised to advantage hereafter. Dairymen who have to buy dairy cows will probably be able to buy replacements at less cost in two or three years than they can now.

Total milk production for all purposes in 1929 was apparently only slightly in excess of 1928. In the eastern market-milk areas production was slightly below 1928 until about September, but well above 1928 after that. In the areas chiefly devoted to manufactured dairy products, production exceeded 1928 during the favorable pasture season and averaged about the same as 1928 during the remainder of the year; the year closed with production generally showing slight increases over 1928.

Production of manufactured dairy products in 1929, in terms of milk equivalent, was about the same as in 1928. Estimates for the year show increases of about 2 per cent in creamery butter production, 8 per cent in condensed and evaporated milk, and a decline of 14 per cent in cheese production.

Trade output, or the quantity of butter absorbed by our markets, is estimated to have declined about 1.5 per cent. Until April about the same quantity was consumed as in 1928, but afterwards the rate of consumption was less, and with increased production, the largest storage stocks on record, amounting to 169,000,000 pounds on September 1, were accumulated. At the close of the year these stocks had been reduced to 82,000,000 pounds but were still 88,000,000 pounds heavier than a year earlier. Prices were about the same as in corresponding months of 1928 through April; from April until October they followed the usual seasonal course below the level of 1928 by 2 or 3 cents; then prices declined instead of making their usual seasonal rise. Coincident with the decrease in the trade output of butter, there has been a corresponding increase in the production of butter substitutes.

Trade output of cheese in 1929 was about 7 per cent less than in 1928. The decline in production was even greater and stocks were reduced during the year. Prices of Cheddar cheese, although the lowest since 1922, did not show as marked declines as took place in the price of butter.

Trade output of condensed and evaporated milk increased approximately 4 per cent during the year. The increase in production was somewhat greater and stocks at the close of 1929 were much above those of 1928. Prices were not materially different from corresponding months of 1928 until August, when reductions, which were maintained for the remainder of the year, took place.

About the same quantity of milk appears to have been taken by city consumers for fluid-milk consumption as a year ago, at retail prices which were generally the same as in 1928.

The number of milk cows in the United States, after remaining practically stationary for several years, increased about 3 per cent during 1929. Including some heifers 2 years of age but not yet in production, the number of milk cows on January 1 was about 22,499,000 compared with around 21,800,000 on that date during the three preceding years. The increase appears to have been shared by all sections of the country, except for localities that are suffering from a shortage of feed. Perhaps a third of this increase has resulted from the bringing into production of an increased number of heifers; the remainder of the increase apparently is due to a continued decrease in the number of old cows sold for slaughter.

This tendency to keep more cows does not appear to have been checked. The price of milk cows is still high and December stockyard receipts of cattle from the dairy States still showed abnormally small numbers. Tendency toward expansion of milking herds is also shown by the fact that practically all States report an increased number of yearling heifers being kept for milk cows, the increase in the country as a whole being about 6 per cent. The total number of such heifers on the farms on January 1 is estimated at approximately 4,669,000, compared with 4,413,000 on January 1, 1929; 4,184,000 in 1928; and 4,059,000 in 1927. The number of heifer calves on hand, although less significant, seems to indicate that fully as many heifer calves were saved in dairy States in 1929 as in the previous year, and up to the first of the year the stockyard receipts of calves from the dairy States seem to indicate that farmers were still saving rather more than the usual number of calves.

Indications are that the previous upward trend of production per cow was continued through 1929 in fluid-milk areas, but that in butterfat areas this trend did not continue after the first half of the year, partly because of poorer pastures after midsummer and partly because of higher feed prices and lower product prices in the fall.

The increase in production in the North Atlantic States in the fall of 1929 appears to have been due to the fact that farmers adjusted their program in expectation of a fairly strong market for fluid milk during the fall and winter months. In so far as there has been an increase in fall freshening some decrease in production later in the year is to be expected. In the United States as a whole, production per cow increased materially from 1925 to 1927, but has increased only slightly since then.

Production of milk in 1930 will depend largely on the extent to which farmers adjust their methods to the change in prices. The number of milk cows on farms will probably increase for another six months at least, but this will probably be partially offset by allowing the calves to have more of the milk. A gradual shift in feeding methods is taking place, as indicated by the slow sales of bran and cottonseed meal at declining prices since the middle of September. A further decrease in the quantity of grain fed is

expected and this will tend to reduce milk production, especially during winter months. Production during the summer months will depend largely on the condition of pastures, and for the country as a whole there seems as yet no reason to expect these to average poorer than they were last season, when pastures were about the same as the 5-year average. On the whole, if farmers react to prices as they usually do, milk production will probably be slightly less in 1930 than in 1929 and the dairy situation should show considerable improvement before the end of the year, but with a larger number of dual-purpose cows in prospect it will be increasingly difficult to maintain the price of dairy products quite as high as in 1928 and the first half of 1929.

Although demand for fluid milk and cream averaged about as high in 1929 as in 1928, reduced buying power of consumers in the first half of 1930 may reduce the demand for fluid milk and cream, but this decline in demand will probably be temporary and the long-time upward trend in demand will probably continue. Demand for butter decreased somewhat during the first 10 months of 1929 in comparison with 1928 and markedly during the last two months. The drop in wholesale butter prices since early October has only recently been followed by corresponding reductions in retail prices, and for that reason current wholesale prices somewhat overemphasize the drop in consumer demand. Now that retail prices are being reduced, consumption will tend to increase and move the surplus stocks into consumption and relieve the present demoralized situation in wholesale markets.

Although material improvement in the purchasing power of consumers is not expected before the second half of 1930, butter and cheese markets have probably felt the worst of the depression. Demand for fluid milk and market cream will probably show some decline in the first half of 1930 as compared with the first half of 1929. Thereafter the demand for all dairy products should tend upward, and during the 1930-31 season may recover nearly in full to its long-time upward trend.

Foreign dairy production has recovered from the disturbances arising out of the World War with a rather marked check during the past two years in the rate of increase, and is now comparatively stable, with prospects of only gradual and moderate increase in supplies. Butter prices in foreign markets have likewise been stable during recent years. The widest yearly average margin of 11 cents between New York and Copenhagen was reached in 1927, with this margin narrowed to 9 cents in 1928, and to 8 cents in 1929. Abnormally low foreign prices relative to prices of earlier years during the winter of 1929-30 to date, apparently caused by a weakening of demand in the principal European deficit areas, is at present the most unfavorable aspect of the situation as affecting foreign competition in the dairy industry.

Imports into the United States of milk, cream, cheese, casein, and butter during the fiscal year 1928-29 were valued at \$38,000,000, and domestic exports, principally of concentrated milk, at \$18,000,000. There was an excess of imports over exports equivalent to more than 1,000,000,000 pounds of milk, or practically the same as during each of the last four years. With a continuation of normal foreign dairy production, only such foreign supplies as have a well-established market in this country will be attracted to the United States during the earlier part of the year, and by the time the domestic market has recovered European demand may be expected to have made corresponding improvement. Accordingly, competition from foreign supplies within the United States will probably be lessened rather than intensified during the coming year, yet butter prices would have to drop materially lower than at present before significant exports could take place.

Fluid-milk prices to farmers have been depressed to some extent, although the surplus-price situation will probably improve, its effect on milk prices may be offset by further reduction in consumptive demand for milk and cream during the next few months. Unfavorable product prices will probably tend to reduce production through the late winter and spring, which may counterbalance to some extent the reduced demand. But the immediate outlook is not very favorable, and producers in fluid-milk districts should consider all possible economies in production by eliminating poor animals and generally following a cautious production policy.

The immediate outlook for butterfat and cheese districts is more hopeful than present prices would indicate. With reduced retail prices, consumption will tend to increase; and winter production will probably shrink in response to the present unfavorable returns. A further downward trend of butter

prices during the coming season is not probable, and somewhat higher prices may be realized. Particularly if industrial activity shows marked recovery in the second half of 1930, butter and cheese prices may show the usual fall advance, much as they did in the winter of 1925-26 following a price depression in the fall and winter of 1924-25.

The long-time outlook for dairying is still affected by the present position of the beef-cattle cycle, and the possibility of a downward trend in cattle prices during the coming 5 years or more. The last 3 years has constituted a period of reduced numbers of beef cattle and high prices for cattle and sheep. As a consequence there has been less incentive than usual for producers of meat animals to engage in dairy production. During the next 5 to 10 years the reverse situation may be in evidence, with many producers or feeders of meat animals turning to dairying to augment their incomes.

The long-time outlook for fluid-milk districts adjacent to large cities, where further expansion of population will call for greater quantities of fluid milk, is perhaps more favorable than in the districts devoted to the production of manufactured dairy products. Some recognition should be made of the fact that more and more of the fluid-cream demands are being met from outside districts; but how far this will go is uncertain. Feed prices, which have been unusually favorable to dairymen during recent years as a whole, may become less favorable with increasing numbers of animals, but even so, the long-time outlook is for relatively low feed prices.

In butterfat and cheese producing districts, the long-time outlook is less favorable than in fluid-milk districts. With downward trend in prices of meat animals, many farmers with dual-purpose herds may turn more attention to cream production. To a certain extent marginal districts between fluid milk and butterfat are finding greater outlets for their product as sweet cream for shipment; in these favorably located districts the long-time situation is more promising, but in the true butterfat districts men who are planning long-time expansion in their dairy enterprises would do well to base their plans on prices for butterfat somewhat below those of the seasons prior to 1929.

The present long-time outlook for dairy products does not encourage expansion of dairy production in those cash-crop areas where dairying has been unable to make much headway during recent years, as it is unlikely that the relation of butterfat prices to cash and feed-crop prices will be as favorable during the next five years as it has been during the last five. Areas in which dairying has been gradually increasing as a livestock enterprise to supplement cash crops may well continue that development, with even greater emphasis than before on the production of feed crops to balance the livestock.

The present situation calls for both economy in production and caution in plans for the future. The high prices for meat animals still favor the elimination of inefficient cows. An unusually heavy culling at this time is desirable to help correct the temporary oversupply of dairy products. At the same time, enough dairy heifers are now being raised to maintain dairy-cow numbers during the next few years at a point to produce as much product as can be sold to advantage. Further increases in the numbers of heifer calves being raised is therefore undesirable, as prices of both beef and dairy cows are likely to be at materially lower levels than at present before those cows are ready for sale or use as producers.

SHEEP AND WOOL

It appears that the high point in the expansion of sheep numbers in the United States has about been reached. A new annual record slaughter of sheep and lambs is expected within the next two years and it seems improbable that prices for these increased supplies can be maintained at the high levels of the last three or four years.

The increase in world wool production which has occurred in recent years, will probably not continue much further and some reduction is expected by 1931. Production in 1930, however, will probably not be greatly different from the high productions of the last two years. It is likely that demand conditions, which are unfavorable at present, will begin to improve in the last half of 1930, and will more favorably affect the marketing of the domestic clip of 1931 than that of 1930.

The outlook for the sheep industry suggests that the readjustments which will take place as a result of reduced price levels should be effected gradually in order that the market may not be unduly depressed by temporary seasonal

gluts. In the past, periods of low prices, such as those now prevailing for wool and as seem probable for lambs, have been followed by higher prices a few years later.

Sheep numbers in the United States continued to increase during 1929, but the increase of 1,400,000 head was the smallest in the last four years. There were probably as many sheep (including lambs) on farms January 1, this year as on that date in at least 30 years. Of the 48,913,000 head as estimated on farms January 1, 1930, some 5,490,000 head were estimated on feed for market. This was the largest number estimated on feed in eight years and was probably almost as large as in any previous year.

In spite of increased sheep numbers the estimated lamb crop last year (25,976,000) was about 1 per cent smaller than that of 1928. The native crop was larger but, primarily because of unfavorable weather, both at mating and lambing time, the western crop was considerably smaller. The Western States, with about 69 per cent of the sheep population, reported a 1929 lamb crop of 16,645,000 head, as compared with 9,331,000 head saved in the native States.

Lamb slaughter from the 1929 crop up to January 1 was about 450,000 head larger than the slaughter of 1928 lambs for the same period. In addition there were about 700,000 head more lambs on feed January 1 this year than last year. The total lamb slaughter from the 1929 crop will thus probably exceed that from the 1928 crop by at least 1,000,000 head.

The increase in lambs on feed this year was largely in Colorado and other Western States, including western Nebraska. In the Corn Belt States, excluding western Nebraska, the total number on feed was about the same this year as last, as increases in some States were offset by decreases in others. Because of unfavorable weather during October and November, the lambs in Colorado and western Nebraska made small gains and the movement of fed lambs back to market from these areas may be somewhat delayed and is likely to be unusually large during February, March, and April.

Because of drought, conditions in California until the end of December were unfavorable for the development of the early lambs in that State. Present information indicates that the number of such lambs is about as large as that of last year; but their condition and the time they will begin to move to market will depend largely upon developments in the feed situation during February and March. If abundant grass is available for the rest of the season it seems probable that the supply for eastern shipment will be as large as last year, and that volume movement east will begin at about the same time.

Conditions to the end of January in other early-lambing areas in the West averaged at least as good as last year. They were better in Idaho but poorer in Oregon and Washington, and they were average or above in the Southeast. So far as feed and weather conditions to date in the native sheep States are a factor, there is no reason to expect a smaller native lamb crop in 1930 than in 1929. If average conditions prevail until after lambing time, the western lamb crop of 1930 will probably exceed that of 1929.

The upward trend in consumer demand for lamb that has been under way during the last few years is not expected to continue through 1930. Indications are that the 1930 level will be below that of 1929. A slackening in this trend began to develop during the latter half of 1929 and was particularly noticeable near the end of the year. For 1929 as a whole, however, retail demand averaged above that of 1928, with per capita consumption increasing by 4 per cent and retail prices by 2 per cent during the first 11 months as compared with the same period a year earlier.

Among the unfavorable developments for western sheepmen during recent months has been the reduction in the demand for ewe lambs and old ewes for flock replacement and expansion. Although in previous years ewe lambs commanded a premium of \$1 to \$2 per 100 pounds over the prices paid for wether lambs of the same type, they now sell for but little more.

Supply-and-demand conditions point to a level of lamb prices during the next few years lower than that in 1929, although the downward course of the market may be checked somewhat as a result of the improvement in business conditions that is expected to start toward the middle of 1930. Partly, at least, because of the high prices of other meats during the last two years, lamb prices have continued relatively high in spite of relatively large supplies. Indications are that the prices for some of these competing meats, such as veal and poultry, will not continue at their recent high levels through the next few years, but unless sheep and lamb liquidation is unusually drastic, so such sharp price declines as took place in 1920 and 1921 are expected. Lamb prices at

Chicago during December, 1929, the first month of the fed-lamb season for the 1929 crop, averaged 7 per cent less than in December, 1928.

The average price of sheep and lambs slaughtered during the fed-lamb season for the 1928 lamb crop, December, 1928, to April, 1929, inclusive, was \$15.03 per 100 pounds, compared with \$13.88 paid in the corresponding period a year earlier. Federally inspected slaughter in the first-mentioned period was 1 per cent greater than that of the earlier period.

The average price paid for sheep and lambs slaughtered during the grazing season for the 1929 crop of lambs, May to November, 1929, was \$12.21 per 100 pounds, as compared with \$13.21 paid in the same period of 1928, and \$12.84 paid in that period of 1927. Federally inspected slaughter in the 1929 grazing season exceeded that of 1928 by 4.8 per cent and that of 1927 by 13.3 per cent.

The decrease of approximately 7 per cent in the prices paid thus far for slaughter lambs from the 1929 crop, as compared with those paid in the corresponding period of 1928, is largely a reflection of reduced wool prices and the reduced demand for feeder lambs of terminal markets and for breeding stock for flock expansion. The average wholesale price of dressed lamb at New York during the eight months from May to December, 1929, was only about 1 per cent less than the average for the same period in 1928.

Prices paid for feeder lambs from the 1929 crop as indicated by the monthly average at Chicago during the last half of 1929 were 5.7 per cent, or 75 cents below the prices paid in the same period of 1928.

WOOL

Present indications are that the 1930 world wool production will not be greatly different from the large productions of 1928 and 1929. Production has been increasing rapidly during recent years, the total in the important countries (exclusive of Russia and China) rising from 2,566,000,000 pounds in 1923, to 3,213,000,000 pounds in 1928. Most of this increase occurred in countries of the Southern Hemisphere and the United States. Both domestic and foreign production of fine wools increased more than that of medium and coarser wools. In view of present low wool prices, material further expansion is not to be expected and some decrease is likely by 1931. Several of the large wool-producing countries of the Southern Hemisphere are subject to more severe droughts than have occurred in recent years and a recurrence of one of these periods could reduce their sheep numbers materially in a short time.

In the United States the estimated production, including pulled wool, increased from 264,000,000 pounds in 1922 to approximately 355,000,000 pounds in 1929. Present prices for wool will probably discourage further expansion during the next few years but it is not likely that the spring clip in 1930 will be any smaller than it was in 1929.

World supplies of combing and clothing wool for the 1929-30 selling season are estimated at about 1½ per cent above those for the preceding season. The increase in supply is accounted for largely by the heavy carry-over of stocks in the primary markets of the Southern hemisphere since production was approximately the same as in 1928. Because of the extension of the Australian selling season for the 1929 clip, a larger quantity of wool than usual will probably be sold from that country in the coming spring about the time the 1930 United States clip starts to move to market.

Demand for wool by important foreign consuming countries was lower in 1929 than in 1928 and has continued downward into 1930. Little immediate improvement in either foreign or domestic demand for wool is expected but some increase may develop in the latter half of 1930 as business conditions improve.

With the increasing domestic production the trend of imports of combing and clothing wool into the United States has been downward although for the first 11 months of 1929 imports amounted to 98,000,000 pounds compared with 84,000,000 pounds in the same period in 1928. The consumption of combing and clothing wools in the United States was also larger in 1929. The increase during the first 11 months in mills reporting to the Bureau of Census (representing from 75 to 80 per cent of the wool-manufacturing industry in this country) amounted to 35,000,000 pounds, or 11.6 per cent over the corresponding period a year earlier.

Forty-six per cent of this increased consumption of 35,000,000 pounds was domestic wool and 54 per cent was foreign wool. There was a decrease of 13,000,000 pounds in the consumption of domestic wools grading 60's (one-half

blood) and lower, but this was more than offset by an increase of 21,000,000 pounds in the consumption of foreign wools of the same grades. As a result, the proportionate consumption of domestic wools of these grades dropped from 81 per cent to 72 per cent. On the other hand, the consumption of domestic wools grading 64's (fine) and above increased 29,000,000 pounds while that of similar grades of foreign wools declined 2,000,000 pounds. This raised the relative proportion of domestic fine wool consumption from 85 per cent in the first 11 months of 1928 to 89 per cent for the same period of 1929.

World wool prices fell during 1929 and the tendency of the market in early January, 1930, was still downward. Declines were relatively greater on the fine than on the medium grade wools. Prices of wool in London at the close of the wool auctions in December, 1929, were from 20 to 33 per cent below those at the opening sales in January, 1929. The greatest declines (over 30 per cent) were on wools grading 56's and higher. Prices of wools grading 46's to 50's declined about 24 per cent and those for wools grading 36's to 44's dropped about 20 per cent.

Following the general course of world wool markets, prices of wool at Boston declined sharply in the early half of 1929, steadied in the early autumn, and resumed the downward movement in the last part of the year. Prices of fine (64's) wools were from 24 to 26 per cent below those at the opening of the year, and the range in declines on the grades coarser than 64's was from 20 to 24 per cent. The margin of domestic prices over foreign prices was high throughout 1929 and the margin on medium wools was greater than on fine wools.

Prospective world supply and demand conditions do not indicate much immediate improvement in the wool situation, but the expected revival of business conditions after the middle of 1930 gives encouragement for anticipating an increased demand for wool in 1931. A review of the trends in sheep production in the United States during the last six or seven years indicates that the peak in the period of expansion in numbers in the Western States has about been reached. The limitations of available range make improbable any considerable further expansion there; such expansion could come only from relatively high cost production, and present conditions in the industry do not encourage such production. Although it may be possible for efficient sheep producers in the native States to make a profit with farm flocks, even at the present level of prices for lambs and wool, it does not appear to be a propitious time for them to expand their operations because any movement that will result in increased marketings of lambs during the next three years would probably tend to further depress lamb prices.

If the present number of breeding ewes in the United States is maintained and all sheep and lambs are sold each year except enough to maintain such a number, inspected slaughter during the next few years will probably exceed that of the crop-marketing year 1929-30 by around 2,000,000 head, and the total yearly Federally inspected slaughter will be between 16,000,000 and 17,000,000 head. It hardly seems probable that such a supply can be disposed of at the level of prices prevailing during the last three or four years.

The new price level will be determined by the supply and price of other meats, especially veal and poultry, by the extent to which consumer demand for lambs may be increased by such methods as may be adopted for influencing it; by the changing level of consumer purchasing power, and by the level of wool prices. As this new level of lamb and wool prices is being established, present high-cost sheep producers who can not operate under these conditions will be forced to reduce their operations. This process of reduction will temporarily increase the slaughter supply of sheep and lambs above what it would be on a replacement basis and reduce prices below what they would reach if no liquidation developed. As a result, reduction may be greater than necessary, and it may be some years before the industry is on a stabilized basis of production.

The prospective increase in cattle production, with its accompanying decline in cattle prices during the next seven or eight years, makes it appear inadvisable for sheepmen to shift from sheep to cattle at this time, because the upward trend in lamb prices is expected to get under way again before the next general advance in cattle prices begins.

A clear understanding of the present situation, both by sheep producers and by organizations interested in financing the industry, is highly desirable. The adjustment to the new level of slaughter should be as gradual as possible

and should not be made more difficult by forced liquidation. Any curtailment of credit that tends in this direction might result in greater risks than one based on a policy of permitting an orderly readjustment of production.

MOHAIR

The outlook for mohair producers is not as satisfactory as it has been in recent years. Production of mohair in the United States increased materially and is now approximately equal to the average consumption in the United States for the last six years. Domestic consumption has been declining since 1926, but at present prices, mohair appears to be more desirable for many purposes than alternative materials. Therefore, domestic consumption is expected to increase somewhat during 1930, but, with large supplies available, the demand will probably not be strong enough to support prices at high levels. Imports have been decreasing in recent years.

Prices of domestic mohair at Boston declined steadily during 1929, and prices of all grades of mohair were fully 20 per cent lower in December than in January, 1929. First combing domestic mohair declined from 78 cents a pound in January to 61 cents in December. Turkish fair average mohair at Boston (in bond subject to duty) declined from 51 cents a pound to 39 cents in the same period. The margin between domestic and foreign mohair prices has narrowed during the year. If the United States mohair industry ceases to be on an import basis, domestic prices are not likely to continue materially above world prices.

Mohair production has increased rapidly since 1922 in the United States, which has now become the principal mohair-producing country in the world. A preliminary estimate for 1929 places the clip above 16,000,000 pounds compared with 14,500,000 pounds in 1928 and 8,500,000 pounds in 1922. At the present rate of increase in production the 1930 clip would exceed the average consumption in the United States during the years 1922-1929. On the other hand, consumption has been declining from the high point in 1926 so that the large clip of 1929 was moved largely through considerable reductions in price.

The trend of mohair production has been downward in the Union of South Africa and upward in Turkey. In the six years 1923-1928 the production in South Africa declined from 16,000,000 to 9,000,000 pounds and that in Turkey increased from 6,000,000 to 10,000,000 pounds. However, the Turkish clip declined to 8,600,000 pounds in 1929 and the South African clip increased from 9,000,000 to 10,000,000 pounds in 1929.

The supply of Turkish and South African mohair is considerably larger than last year. Stocks of mohair in Turkey were estimated to be over 5,000,000 pounds on December 1, 1929, or about 18 per cent greater than in 1928, when stocks in Turkey were unusually heavy. Stocks of foreign mohair in bonded warehouses in Boston on December 1, 1929, amounted to less than 3,500,000 pounds compared with slightly over 4,000,000 on December 1, 1928.

The narrow margin between domestic and foreign prices has prevented larger imports of mohair into the United States. Imports were small during 1929, amounting to only 2,000,000 pounds compared with 11,000,000 pounds in 1928.

Demand for mohair fabrics for automobile and furniture upholstery declined during 1929 compared with 1928, but the demand for mohair linings for wearing apparel has remained fairly steady and undelivered orders appear to be about the same as last year. At present prices, mohair is considered to be more desirable for many purposes than alternative materials. There has been some increase in the use of mohair and mohair mixtures in the upholstery of the new automobile models shown recently for delivery in 1930.

HORSES AND MULES

The outlook for horses and mules is primarily one in which long-time factors predominate. The number of horses and mules on farms will continue to decline for six years at least; whether it continues thereafter will depend upon whether births continue at about present or lower levels, or increase materially within the next few years. The decreasing use of land for agricultural purposes in Eastern States releases work stock for use on the more favorably situated farms. The increasing use of and improvements in tractors, combined harvesters, and other power-operated equipment, the increase in the size of the

farms, and expansion of improved roads, all mean a replacement of horses and mules by mechanical power. As long as the mechanization of agriculture is able to keep pace with the decreasing numbers of work animals, it is not likely that the prices of work stock will advance materially, except in those areas where special conditions render difficult the use of mechanical power.

Average farm prices of both horses and mules for the United States during 1929 have been slightly lower than during 1928, but they remained above the prices of 1927. Reports from key markets in the Middle West indicate an increased demand for both horses and mules during 1929. Liberal supplies and higher prices than in 1928 prevailed at these markets during the year. Most of the advance in horse prices in these key markets was for active horses of medium weight, suitable for farm work. The January 1, 1930, farm prices of colts 1 year old and under 2 years showed increases over a year ago of 2 per cent in the East North Central States, but no appreciable change was in evidence in the West North Central States.

Mechanization of agriculture is resulting in a much more highly localized market for horses than for mules. There is a more definite and regular movement of mules from the producing States to the cotton States east of the Mississippi River, consequently the changes in mule prices in 1929 compared with 1928 have been reasonably consistent in the several States of deficit mule production. The farm prices of horses, frequently show changes in opposite directions in two adjacent States.

The number of horses and mules on farms continued to decline during 1929. Reduction in the number of horses from January, 1929, to January, 1930, was about 465,000 head, or 3.3 per cent; the number of mules declined about 68,000 head, or about 1.3 per cent. Sharp declines in numbers of mules are indicated in the mule-producing States. This decline in the number of horses and mules has followed the general downward trend forecast by the outlook reports of the last several years. Indications are that the number will be reduced from about 25,000,000 in 1920 and 19,000,000 at present to about 10,000,000 to 11,000,000 or less by 1940, providing births continue at about present or lower levels. With the maximum increase that could occur under the stimulus of the most rapidly possible rising prices, the number by 1940 would not exceed 14,000,000 or 15,000,000.

During the recent years of rapidly declining numbers of draft animals, their prices have not been sufficiently high (in view of alternative opportunities for the use of feeds) to stimulate production even under the most favorable conditions as found in the former surplus-producing district of the western Corn Belt. It is doubtful whether prices to be expected within the next few years will offer a substantially stronger inducement.

Increased interest in horse breeding has been observed in some parts of the country, but the number of colts on farms continues to decline at about the same rate as the number of older work stock. Information obtained from some 300,000 farmers on December 1, 1929, indicates that the number of colts raised in 1929 was smaller than the number raised in 1928. The ratio of the number of colts under 1 year to the number over 1 and under 2 years in the North Central States was about 45 to 55. Stallion registration decreased about 8 per cent from 1927 to 1928 and registration of jacks declined about 20 per cent. Some increase in service was reported, but efforts to increase horse breeding are seriously handicapped by the limited number of suitable breeding mares.

A sharp increase in receipts of horses and mules for October, November, and December, at the three principal markets of the Southeastern States, was accompanied by well-sustained farm prices for mules. This situation undoubtedly reflects the somewhat larger yields per acre of cotton in 1929 in these States and may result in a strengthening in the prices of mules during the next few months. The decrease in the number of horses and mules on farms since 1918 has released approximately 20,000,000 acres, or 5.5 per cent of the total crop acreage in 1929, for uses other than that of growing feed for work animals. By 1940 it is possible that the further decline in numbers of work stock will result in the release of an additional 20,000,000 to 30,000,000 acres.

POULTRY AND EGGS

Any increase in production of chickens in 1930 for the country as a whole over the production of 1929, either for eggs or meat, will tend to reduce prices of poultry and eggs below the levels of recent years.

The volume of egg production during the year 1930 promises to exceed that of last year by an amount corresponding somewhat to the increase of about 5 per cent in the number of chickens. Larger prospective egg production indicates that prices lower than last year are probable, although the demand for storage should be good and the volume of spring consumption should be fully as large as last year.

With an increase of 10 per cent in numbers of chickens raised in 1929, with marketings correspondingly heavier, and with greatly increased cold-storage holdings, poultry prices during the first half of 1930 will probably remain below levels prevailing during the corresponding period of 1929. In case of an improving business situation in the latter part of the year, the demand for poultry should be fair, although probably not so good as during the last two years. The price in the fall of 1930 will depend mainly on the number of chickens raised this year. The fall outlook will be discussed in the report on poultry to be issued in July. The annual estimate of numbers of chickens on hand January 1, and estimates of intended commercial hatchings will be issued in February.

Present indications are for a level of prices for poultry feeds during the first half of 1930 not very different from those prevailing in 1929.

The relatively high price for lamb and the steadily increasing prices for beef during the five years 1925-1929, have been offset to some extent by recessions in the price for hogs; but in general the price levels of meats other than poultry have been high and have helped the market for poultry and eggs. The general trend of meat prices seems likely to be somewhat downward during the next five years especially for beef, veal, and lamb; therefore the prices of poultry products will lack the support they have had during the past five years from the high or rising prices of other meats.

The number of chickens on farms on January 1, 1930, was greater than on January 1, 1929, by about 5 per cent according to early indications.

On December 1 the average number of birds in laying flocks in all sections of the country showed a moderate increase over numbers on December 1, 1928. In the North Central States, having about half of the chickens in the United States, the average number was 3 per cent above the previous year and the same as in 1927. In the North Atlantic States, December, 1929, numbers were 7 per cent higher than in 1928; in the Western States 4 per cent higher; and in the South about 3 per cent higher. No definite information on change in numbers of birds in commercial flocks is available at present.

The cost of feed entering into the poultry ration, which had fallen slightly below the 5-year (1923-27) monthly average during the later months of 1928, rose slightly above the average in February, 1929. Except for the month of June, it continued slightly above the corresponding monthly average each month of 1929 up to November, when it fell to 1 per cent below and in December 2 per cent below the average cost in the corresponding months of 1923-1927.

Present indications are for a level of feed prices during the first half of 1930 not much different from that in the corresponding period of 1929. Total production of feed grains in 1929 is less and total requirements for livestock feeding seem likely to be somewhat less, but the combined general price level of all products is lower than a year ago. In December prices of corn and oats were slightly higher, and of wheat considerably higher, whereas barley, bran, and other concentrates were considerably lower than in December, 1928.

EGGS

The number of eggs laid per bird as reported for the flocks of crop reporters averaged in 1929 about 3 per cent greater than in 1928; every month except March showed an increase over corresponding months in 1928 until November and December, when 1929 layings per bird fell below the 1928 figures. It is probable that the decrease in the last two months was due in part to the relatively larger additions of the late-hatched pullets to the laying flocks in 1929, the flock increase for the two months being 14 birds in 1929 compared with 10 birds in 1928. The relatively lower rate of laying in November and December may not continue after the pullets come into full production.

Total production of eggs per farm flock as reflected in the monthly reports for the flocks of crop reporters averaged only slightly smaller during 1929 than in 1928, the difference in eggs gathered being less than 1 per cent al-

though the average number of hens in these flocks was about 4 per cent less. Total layings per flock in 1929 were lower than in 1927 by about 4 per cent.

Receipts of eggs at the four principal markets during 1929 were 14,940,000 cases, or 3 per cent less than in 1928. Receipts for the three months, October, November, and December, 1929, combined, were about 2.4 per cent less than in the same months of 1928. In December they forged slightly ahead of that month of 1928.

The storage-egg situation has been a favorable market factor during the fall and winter of 1929. Peak holdings of shell eggs on August 1 were about 8,958,000 cases, or 15 per cent (1,500,000 cases) less than in 1928 and about 11 per cent below the 5-year average. Holdings on January 1 were only 710,000 cases, or 50 per cent less than on January 1, 1929, and 42 per cent less than the 5-year average.

Stocks of frozen eggs at the peak of holdings on August 1, 1929, amounted to 91,000,000 pounds, or about 12 per cent more than on August 1, 1928. This excess was equivalent to 286,000 cases. By January 1 of this year holdings of frozen eggs had decreased to 53,644,000 pounds, a quantity 4.5 per cent less than on January 1, 1929.

Exports of shell eggs for the first 11 months of 1929 were 380,000 cases compared with 637,000 for the corresponding period of 1928, this year's exports being about 0.5 per cent of our domestic production. Exports are shipped mainly to Argentina, Cuba, Mexico, and Panama, and come mostly from the Pacific coast and the Middle West.

Imports of shell eggs are so small as to be of little significance. Imports of frozen and dried eggs are in considerable volume, although the quantities involved comprise a relatively small part of the total egg supply, being equivalent to less than 2 per cent of our total production. China furnishes the bulk of these imports. Prospects point to a maintenance of the present volume of imports of dried eggs during 1930. Exports from China of frozen eggs have been mostly to Europe during recent years and no increase in imports of these to this country is anticipated.

The farm price of eggs during 1929 from March to October was about 15 per cent above the prices in the corresponding months of 1923-1927, but only 5 per cent above during September and October, and finally in November and December of 1929, 2 per cent below the 5-year average. But because of fewer hens and shorter supplies of market eggs, prices during the later months of 1929 were well above the corresponding months of 1928.

Since the cost of the poultry ration was but little above average during most of 1929, the egg-feed ratio followed closely the level of egg prices.

Volume of egg production during the year 1930 promises to exceed that of 1929. The increase in numbers of birds in the laying flocks this year, coupled with a level of feed prices which promises to be about the same as that of last year, points to an increase in production of eggs somewhat in proportion to the increase of about 5 per cent in number of birds in laying flocks. The high proportion of pullets and young hens in the laying flocks this year will tend toward higher egg production. Production will be dependent in part upon the extent to which producers practice heavier or lighter feeding as influenced by the price received for eggs during the next few months.

Demand for eggs for storage was not as keen in 1929 as in 1928, largely because of losses taken on storage stocks the preceding fall, and the higher spring price in 1929, which was maintained by slightly smaller supplies and a stronger consumer demand. As a consequence, the 1929 storage season was unusually profitable to the storage operators. With larger supplies of eggs in prospect and with the spring egg price level probably below that of 1929, it is likely that more eggs will be stored this year.

POULTRY

A relatively higher level of prices for poultry than for eggs has existed for the last 10 years compared with pre-war price levels. This is probably largely because of the relatively greater increase in production of eggs than of poultry since the World War (probably due to an increase of the lightweight breeds) and greater concentration of effort in egg production. With the increase of 10 per cent over the previous year in numbers of chickens raised, the marketings during 1929 were correspondingly heavier. Monthly receipts of dressed poultry at the four principal markets during 1929 were approximately equal to those of the preceding year until August; since then they have

increased markedly. Total receipts at these markets for 1929 exceeded those for the year 1928 by more than 8 per cent.

Receipts of live poultry at New York were much below those of 1928 for the first six months and about 94 per cent of 1928 for the entire year.

Cold-storage stocks of frozen poultry on August 1, 1929, were nearly the same as on the same date of 1928. Holdings have increased much more rapidly thus far during the fall and winter of 1929-30 than during the previous year, with the result that on January 1, 1930, holdings totaled 140,000,000 pounds, a quantity 28 per cent greater than in 1929 and 13 per cent greater than the 5-year average. At present it appears probable that peak holdings will occur about February 1, and will be greater than any total previously recorded.

Farm prices of poultry until September, 1929, were from 1 cent to 3 cents above those of corresponding months in 1928, whereas after September they were slightly below. There are several indications that poultry prices during the first half of 1930 will probably be lower than in either 1929 or 1928 and possibly similar to 1927. Both numbers of poultry on farms and storage stocks are high, as in 1927, while at the opening of each year demand has been weakened by a moderate business recession beginning in the latter part of the previous year.

Demand for chickens during 1930 is expected to be fair, although probably not so good as during the last year or two. Looking further ahead, producers of chickens must face the problem of a probable permanent increase in the proportion of turkeys to other poultry, especially at the holiday season, in view of the improvement in methods of raising turkeys and the increase in the number of progressive commercial turkey growers. Should producers in 1930 increase their hatchings, as they are inclined to do following a year of favorable egg prices, they must face the prospect of further material reductions in price levels. Any increase in production of chickens in 1930 for the country as a whole over the production in 1929, either for eggs or meat, will tend to reduce prices of poultry and eggs below the levels of recent years.

TURKEYS

Although lower prices for turkeys in 1929 will discourage many producers, the rapid adoption of improved methods of production has so greatly reduced losses of young birds and lowered production costs during recent years that total numbers may not decrease in 1930. The important commercial areas are not likely to reduce numbers materially.

The turkey crop of 1929 was estimated at 9 per cent larger than that of the previous year. The increase was rather general over the country. Western States reported a 6 per cent increase over the large crop of 1928 and more than 25 per cent increase over the crop of 1926. Much of the commercial supply of turkeys comes from that area.

Information as to market receipts for the Thanksgiving and Christmas market of 1929 is not available, but demand was active and supplies were well cleaned up. Cold-storage holdings January 1, 1930, were 9,830,000 pounds, or about 6 per cent less than January 1, 1929, and 7.5 per cent less than the 5-year average.

The October to December, 1929, farm price of turkeys was about 3.8 cents below the average for these months in 1928 and about 4.0 cents lower than in 1927. The usual seasonal trend of prices paid to growers is upward from October to December. In 1929, however, the farm price of 27.2 cents in October, which was the same as in 1928, fell slightly in November and in December broke sharply to 23.5 cents per pound, or to 7.0 cents below the price for December, 1928. Wholesale prices at distributing markets, however, although 10 to 13 cents below those of the previous year at Thanksgiving, were at Christmas only 3 to 5 cents below those of Christmas, 1928. Retail prices throughout were considerably lower than in 1928, which was largely responsible for the increase in consumption.

Prices paid producers at Thanksgiving and Christmas in 1929 were much lower than in 1928 and information indicates that a greater number of birds than usual were held over by growers into 1930. These lower prices might be expected to reduce production this year but it is not certain that growers who use modern methods will reduce their production even though they failed to realize as great profit as anticipated prior to the market season. The average farm price paid for turkeys October to December, 1929, was only 5.6 cents a pound above the price of chickens for these months, whereas in 1928 this

spread was 8.1 cents and, in 1927, 10.4 cents. This indicates that turkeys have lost much of their advantage in relative price to producers compared with chickens, during the last two years.

As a result of the lower prices last season, turkey production in 1930 may show some decrease. However, production may hold its own or even continue to expand because of greater specialization and increased efficiency of methods. It is likely that any deliberate decrease will not be drastic, but involuntary reductions are often brought about by unfavorable spring weather. The more general adoption of improved methods should enable growers in the future to produce on the basis of a lower market price and thus allow turkeys to compete with chickens on a more nearly equal price basis. This would permit a greater expansion of the turkey industry than would otherwise be possible.

FEED CROPS AND LIVESTOCK

The present trend of feed crop-livestock ratios indicates that during the next few years the producers of feed crops for sale will be in a less unfavorable situation relative to livestock feeders than they have been in for the past few years. For farmers as a whole, in the feed-crop and livestock-producing area, it appears that a continuation of the tendency for livestock producers to produce on their own farms a greater proportion of the feed crops that they use will result in greater net returns from farm operations, particularly if growers of these crops for sale adjust their output to the reduced market demand.

Production of feed grains in 1929 was on a slightly lower level in relation to livestock numbers than in 1928. Yields of the principal feed grains, corn, oats, barley, and grain sorghum in 1929 were all below average and the combined production of these grains was 3.2 per cent below the 5-year average production of 1924-1928. The combined acreage of these crops was 2.6 per cent less than in 1928, but only 0.8 per cent below the 5-year average. In other words, the reduced output was due more to lower yields than to decreases in acreage. Production of feed grains per animal unit in 1929 was 2.6 per cent greater than the average production of the 8-year period 1920-1927, as compared with 13.6 per cent greater than average for the 1928 production. The acreage of feed grains in 1929 per animal unit was 1.9 acres, a decrease of 2.6 per cent from 1928 but still 8 per cent above the average of the 1.76 acres in 1920-1927.

Hay production in 1929 was 7.9 per cent greater than in 1928 and 2.2 per cent above the average (1920-1927). The acreage of all hay, both tame and wild, was 5.4 per cent greater than in 1928 and 0.7 per cent above average. The increased production of hay therefore is attributable partly to yield and partly to acreage. The production per hay-consuming animal unit has shown an upward trend for a number of years and in 1929 was 15.7 per cent greater than for the 8-year period, 1920-1927. The acreage in 1929 of hay per animal unit was 1.04 acres, 4 per cent greater than in 1928 and 8.3 per cent above the average of 0.96 acre for the 8-year period.

The present level of prices of feed grains is about 116 per cent of the level in pre-war years. The present farm prices of hay are 93 per cent of the pre-war prices. The present level for meat animals is 143 per cent; of farm dairy products, 140 per cent. As a result of the decreased supplies of feed crops in 1929 and the increased numbers of livestock, the price level of feed crops is somewhat above that of a year ago. The low feed crop-livestock ratios, accompanied by declining market receipts of feed crops, indicate that feeders of livestock are producing an increasing proportion of the feed they use, while growers of feed crops for sale have failed to adjust their output to a reduced market demand. The favorable ratios of meat and dairy prices to feed-crop prices during the last few years appear to have run their course. The number of work animals will probably continue to decline, and the number of sheep will probably work gradually downward, but these decreases will probably be more than offset by the upturn in cattle numbers now under way, which will probably be accentuated by a cyclical increase in hog numbers within three years. With the combined numbers of animals on farms gradually increasing for several years to come, and a nearly stabilized acreage of feed grains, it would appear that the level of prices of animal products will tend to fall toward the level of prices of feed crops. This tendency will probably result more from lower livestock prices than from an advance in feed-crop prices. Such a trend will work to the relative advantage of growers of feed grain for sale, but to the relative disadvantage of those who buy grains to feed. Greater

net returns to livestock producers would result if the present tendency toward an upward swing in livestock numbers is checked, especially if accompanied by a slight reduction in feed-crop production.

HAY

The outlook for both farm and market hay suggests the advisability of a further increase in the acreage of legume hays and decrease in the acreage of timothy, prairie, and other grass hays. In recent years the trend of hay prices has been in favor of legume hays as compared with timothy, prairie, and other grass hays. A continuation of this trend may be expected this year because the decreasing numbers of horses and mules will further restrict the demand for timothy whereas the increasing numbers of cattle and sheep will probably increase the demand for legume hays.

The 1929 hay crop of 115,000,000 tons was 7 per cent larger than the 5-year average and appears sufficient to provide for the usual domestic disappearance and leave a moderate carry-over. The low price level of dairy products will tend to stimulate farm consumption of hay. The marketable surplus of the better-quality hays for the remainder of the season will probably be less than last year, but with market inquiry likely to be less active than last fall, prices in general will probably average under those of a year ago. Alfalfa hay prices, however, are expected to average higher than in any other recent year except 1928-29. Timothy and prairie hay prices will continue at relatively low levels largely as the result of a decreasing market demand for these hays.

Timothy acreage has continued its downward tendency with the further motorization of industry and agriculture, and the substitution of legume hay for grass hay. Present timothy acreage is only one-half that of 12 years ago but it is still in excess of farm and market requirements. Acreage and production of alfalfa, clover, and other legumes have increased relatively, in the aggregate, more in recent years than all other hays. Clover production last year was greater than in 1928 because of larger acreage and better weather conditions. Alfalfa acreage continues to increase in the northern dairy belt from New York to Minnesota. Alfalfa acreage in this section has increased from 696,000 acres in 1920 to 2,451,000 acres in 1929. On the other hand, alfalfa acreage in Kansas, Oklahoma, and Nebraska has declined from 2,819,000 acres in 1920 to 2,044,000 acres in 1929, a decrease of 28 per cent. Kansas, in particular, showed a marked decline in 1929. No immediate recovery of the productive acreage in those three States is likely because of the difficulty in the control and eradication of bacterial wilt and because of other factors affecting the crop's growth. This decrease in acreage has curtailed production and surpluses of alfalfa hay in these States for marketing in the Southern States.

Distribution of the crop is sharply different from last year. Supplies in the heavy producing West North Central States were 3 per cent smaller than last year. The East North Central States had the largest supplies on record. Most of this increase was in clover and timothy-clover mixtures, and shipments to and the consumption of these hays in Eastern States as substitutes for alfalfa are favored by January prices. Pacific Coast and Rocky Mountain States hay supplies were the smallest since 1924. Supplies of feed grains, cottonseed cake, cottonseed meal, and cottonseed hulls in the Southwest are shorter than last year which will tend to add strength to the winter and spring hay market in that area. The Atlantic Coast States had slightly smaller supplies, but the South Central States had slightly larger supplies than last year. The shortage of annual legumes in some of the Southeastern States will be principally offset by the larger outturn of cottonseed by-products and corn. The Atlantic Coast States can hardly look to the Pacific Coast States for large supplies of dairy alfalfa this winter, but if the season is near average or over, in length and severity, a good eastern demand will probably develop for Arizona new-crop alfalfa which, if not sufficient to meet requirements will be followed by shipments of early cuttings from the Pacific coast.

Producers near the larger consuming and distributing markets will generally find it profitable to grow legume hays as a cash crop. Advantage should be taken of the favorable freight rates in certain sections to grow good-quality hay to meet the increasing inquiry, especially for leguminous hays. Production of alfalfa and other legume hay in the East North Central States and North Atlantic States is much less than their potential requirements. It is improbable that the latter States will be able to supply their requirements in the near

future, which indicates the advisability of increased acreage in the East North Central States.

Additional increases in the far Southwest beyond those already contemplated appear undesirable. A large part of the recently established noncotton zone near Phoenix which was in cotton in 1929 will be planted to alfalfa. There are indications of larger plantings in other districts of Arizona and in New Mexico and west Texas.

Timothy hay crops have been in excess of farm and market requirements for several years and a further decrease in acreage is suggested. Clover and mixtures of clover and timothy may be profitably substituted for pure timothy. The less productive timothy hay acreage in the East North Central and North Atlantic States should be converted into permanent pastures or planted to forest trees. Where livestock are available a further reduction in prairie-hay acreage in the North Central and South Central States, by utilizing it for pasture, will tend to result in a more profitable price level for prairie hay.

The hay situation is becoming one based as much on kind and quality as on total quantity. Production and marketing of unsound hay can largely be prevented by study and application of proper farm methods.

BROOMCORN

A moderate expansion of broomcorn acreage in established producing districts appears justified in 1930 in view of prospective commercial requirements and an indicated small carry-over from the 1929 crop. Allowing for domestic and export requirements equal to the average of the last five years, a crop of about 50,000 tons could be utilized. To produce such a crop with average yields would require an increase of about 5 per cent in acreage over that harvested in 1929. A crop of this size would be comparable with that of 1928, but probably would not bring as high prices as those obtained from last season's relatively short crop.

Stocks of broomcorn remaining for market December 1, 1929, were relatively small and suggested a carry-over at the close of the season, June 1, 1930, of not over 18,000 tons, including factory stocks. Domestic requirements in recent years have averaged a little over 45,000 tons and exports about 5,000 tons, making a total utilization of approximately 50,000 tons. Allowing for a carry-over June 1, 1931, about the same as is in prospect for the 1930 season, a crop of around 50,000 tons would appear adequate to supply probable trade demand. This would be about 7,000 tons over the 1929 crop, but 4,000 tons less than the 1928 production.

Although yields vary materially from year to year, the average for the last five years was 338 pounds per acre. Allowing for an average yield in 1930, it would require about 296,000 acres to produce 50,000 tons. This would represent an increase of about 5 per cent over the acreage harvested in 1929, and growers will find it to their interest not to exceed this figure.

Growers outside the established broomcorn districts should make certain of a market before undertaking to produce broomcorn, since buyers usually visit only important producing districts. Broomcorn production requires special equipment, an adequate supply of labor, and experienced handling. Unless a grower has had experience in growing and handling a crop, he is likely to produce brush of low quality which will not bring profitable returns.

FEEDSTUFFS

Feedstuff prices are expected to continue lower during the remainder of this winter season than they were last fall. Although the combined supplies of feed grains, feedstuffs, and hay are somewhat smaller than those available a year ago, the length of the feeding period this season and the severity of the weather may alter this outlook, but any material increase in consumption of feedstuffs at January prices is unlikely because of the unfavorable market for dairy products. Condition of pastures and feed-grain crops will determine, to a considerable degree, the amount of the seasonal decline in feedstuff prices during the spring months and the level of prices during the summer months.

The total supply of the principal feed grains, corn, oats, barley, and grain sorghums at the beginning of their respective crop seasons in 1929 was about 8 per cent smaller than at the corresponding dates last year. Hay supplies are only slightly larger than a year ago. Little change is anticipated in the

total supply of by-product feeds. Numbers of animals to be fed in 1930 appear about equal to those in 1929. The supply of corn, including the crop and farm and market stocks at the beginning of the season, was about 6 per cent smaller than a year ago. Less oats and barley were available this season than last, and the grain-sorghum crop was reduced by about 30 per cent, but this is being offset somewhat by reduced exports.

Supplies of by-product feeds this season will probably not be much different from those of a year ago. Production of wheat mill feeds varies slightly from year to year with changes in flour production and the quality of wheat ground. So far this season the outturn of wheat feeds has been slightly greater than in the corresponding period last year, whereas flour production has been about equal to the same months of the last two years. The difference may be accounted for in the heavier yield of offal per barrel of flour compared with last season. Prices of bran and heavier offal advanced early this fall as the result of the smaller crops of feed grains and poor fall pasture, but have declined since, with a general slackening in market demand, reflecting the unsettled wheat, flour, and butter markets. During the remainder of the winter season, prices are likely to hold to about their present levels.

The supply of linseed meal available this season will be smaller than a year ago as domestic flaxseed supplies were less than last year. Imports of flaxseed are expected to be large, but meal from the crushing of this seed is usually exported. Last season domestic consumption of linseed meal totaled about 400,000 tons, the smallest since 1923-24, and with the prospective small supplies this season, a domestic consumption even smaller than last year may be expected. The relationship between the price of linseed meal and the principal dairy products is unfavorable to heavy feeding of linseed meal, and the average price for the season may not be much different from last season despite the shorter supply. Prices of linseed meal since the beginning of the season have averaged slightly under the very high prices for the same period last year, but at mid-January were \$5 to \$8 per ton above the average from 1926-1928.

The production of cottonseed in 1929 was 3 per cent larger than in 1928. Considering the carry-over of old-crop cottonseed meal, together with the meal equivalent of the carry-over of cottonseed and the 3 per cent increase in production of the cottonseed, prospective supply of meal for this season is 135,000 to 140,000 tons greater than that available last year. This larger supply has been reflected in prices somewhat lower than a year ago. More cottonseed meal than usual will be used in mixed feeds in view of the shortage of linseed meal. The short cottonseed supply in the Southwest, together with the shortage of feed grains will probably advance prices of cottonseed meal in that section relatively more than in the Southeast where both the supply of feed grains and cottonseed meal is larger than a year ago. Export demand has been dull and will probably continue so because of the larger feed supplies in Europe. Prices during the remainder of this season will probably continue under those of the last two years, and will average lower than from the beginning of this season through December.

Wet-process corn grindings, of which gluten feed and meal are by-products, have increased rapidly in recent years. Corn grindings in the 1928-29 season were slightly over 88,000,000 bushels compared with 87,000,000 bushels in the previous season but the grindings during November and December were lighter than in the same months of recent years. From present indications, production during the remainder of the season will be about as large as in the same months of 1929, and prices are likely to continue under those for 1929.

Hominy-feed prices are lower than in recent years. No data are available concerning production and although the corn crop is smaller than a year ago and of poorer quality, hominy-feed production may not be much different than last year. Prices are not expected to advance to as high a peak as in 1928-29 season, and during the summer months prices will probably follow rather closely the price trend of corn.

Alfalfa-meal production for the season is expected to be below that of last year. Grindings from the beginning of the season through December are about 195,000 tons as compared with 214,000 tons during the same period last year. Demand for mixed feeds has been so light that the seasonal trend to date has followed rather closely the prices of 1928-29. Prices have not advanced as much as last winter and will probably decline from the January and February price level.

POTATOES

Preliminary reports on acreage which growers intend to plant in 1930 indicate a total potato area of 3,570,000 acres. This is nearly 6 per cent larger than the area harvested in 1929. If the intended acreage for 1930 is planted and a yield in line with the trend in recent years is secured, the total production in the United States will be around 421,000,000 bushels, which is about the quantity produced in 1924 when the December 1 farm price was unprofitably low at 62.5 cents per bushel, compared with 131.4 cents per bushel on December 1, 1929.

Reports received from potato growers seem to indicate that in nearly all States a larger acreage will be planted in 1930 than in 1929. In practically all of the late-potato States except Maine and Idaho, a majority of the commercial growers who reported harvesting large acreages of potatoes in 1929 intend to plant reduced acreages this season, the most extensive commercial growers planning the sharpest reductions. On the other hand, a relatively large proportion of the growers in these States who reported they had harvested 10 acres or less are planning increases; the largest percentage of increase is planned by growers with less than 5 acres. In all of the early-potato sections north to Virginia, Missouri, and Kansas substantial increases are being planned by all classes of growers. It is impossible at this time to determine accurately the total acreage which all growers intend to plant, but, considering the large proportion of the potato crop grown in fields of less than 10 acres, the acreage planned in the United States as a whole is believed to average about 6 per cent larger than that planted last year. With loss of potato acreage no greater than in 1929 this would indicate about 3,570,000 acres for harvest in 1930. This acreage would include about 2,296,000 acres in the so-called surplus late-potato States, an increase of nearly 5 per cent over the acreage harvested last year; 848,000 acres in the 16 States growing late potatoes in quantities insufficient for their local needs, an increase of nearly 4 per cent over the acreage harvested last year; and 426,000 acres of early and late potatoes in the 13 Southern States, an increase of nearly 18 per cent over the acreage harvested last year. Before potatoes are planted in the Northern States the intentions of potato growers on March 1 will be ascertained.

If allowance is made for variations in growing conditions from year to year the yield of potatoes continues to show an upward trend, the low yield of 1929 being due chiefly to widespread summer drought. With average growing conditions in 1930 a yield of 118 bushels per acre can be expected. During the last 15 years the acreage of potatoes has shown a downward trend. However, the increase in yields has more than offset the decreased acreage so that total production has increased and prices have shown a downward trend. The 1925 total acreage was smaller than in any of the preceding 10 years and the average farm price was higher than at any time during that period. From 1925 to 1928 acreage was increased each year, yield and production were increased, and prices were lower each year until the low level of 1928 was reached.

Stocks of old potatoes on hand have an important bearing on the outlook for early potatoes in 1930 as well as on the future marketings from the 1929 crop. Stocks of merchantable potatoes on hand January 1, 1930, in the 35 late-potato States were probably about three-fifths of the quantity on hand January 1, 1929, and were probably the lowest since January 1, 1926. As the relatively light holdings on January 1, 1930, will probably find outlets at good prices, early-potato marketings from the South will meet less competition than in 1929.

November reports from commercial potato growers in 12 important early and second-early States, including those as far north as Oklahoma and Maryland, indicated that an increase of about 12 per cent in the commercial early-potato area was intended, which represents an increase of slightly over 1 per cent in the total potato area. Earlier in the season this increase appeared to be reasonable in view of the prospective smaller stocks of old potatoes on hand, higher price level for potatoes, and probability of lower yield in this area in 1930 than in the previous three seasons, during which years weather conditions were unusually favorable and yields were above average. Recent reports show further increases over these intentions. At present, the reduced buying power of consumers (compared with the high level of 1929) appears to have prevented the expected seasonal price advance, so that something less than the intended acreage might be desirable in the Southern States.

Growers who market their crop in late July, August, and early September should take into consideration the fact that States whose crops mature earlier than theirs are planting increased acreages and that there is a possibility of overlapping shipments and increased competition from these States and also from early marketings from the late States. Potatoes in these States must be moved to market promptly in a limited number of weeks; therefore growers should be particularly careful to refrain from any large increase in acreage.

In the surplus late-potato States reports of intentions to plant indicate nearly 5 per cent increase over the acreage of 1929, but growers in these States should consider the advisability of holding acreage very close to that of 1929 for the following reasons:

(1) In view of last year's low yield and the possibility of a higher yield in 1930, the planting of an acreage equal to that in 1929 would, with a yield in line with the trend in recent years, result in a larger crop, which would reduce prices considerably below present levels.

(2) The early fall crop of the Northern States is likely to meet increased competition because of the increased acreage in the early States.

(3) It is not at all certain that buying power of consumers and the general commodity price level in the fall of 1930 will be sufficiently greater than at present to warrant an increased acreage, and

(4) Growers have usually avoided financial losses and disappointment in prices whenever they refrained from acreage expansion under conditions like those now existing.

SWEETPOTATOES

In the sections that raise sweetpotatoes for commercial shipment production was heavier in 1929 than in 1928, but prices to date have averaged slightly higher. Apparently the unusually small United States crop of potatoes and the reduced supply of some other vegetables helped the marketing situation for sweetpotatoes. Some increase in the commercial acreage of sweetpotatoes is to be expected in 1930, but the shift towards potatoes in parts of the Eastern Shore section of Virginia will tend to prevent the increase in sweetpotatoes from being as large as might otherwise be expected.

In those portions of the Cotton Belt in which sweetpotatoes are grown primarily for local consumption the acreage varies from year to year according to the price of cotton, a low price for cotton resulting in an increased acreage of sweetpotatoes the following season. In the South, as a whole, some small increase in the acreage of sweetpotatoes for local consumption is to be expected this year, but no serious overplanting is anticipated, except possibly in some sections west of the Mississippi River where drought in 1929 reduced the production of both cotton and sweetpotatoes and resulted in locally high prices for sweetpotatoes and other food crops.

DRY BEANS

No radical change in the acreage planted to beans in 1930 seems advisable. Shortages of some classes, notably pea beans, are due to low yields in 1929; the heavy production of other classes, for example pintos, is the result of abnormally high yields per acre. With few exceptions the acreage devoted to the respective classes, provided average yields are obtained, seems to be well adjusted to domestic demand. The total United States production of 19,337,000 bushels of beans in 1929 is closely in line with present domestic requirements except for the relatively low production of pea beans and a heavy excess of pintos. Prices for most classes are considerably lower than those realized for the short crops of 1927 and 1928, but are still about the average for the five years 1923-1927.

Average production of all beans during the five years 1924-1928 was 17,327,000 bushels. Supplemented by net imports beginning July 1 of the crop year, the average annual supply for domestic consumption during this 5-year period was about 18,000,000 bushels. Consumption of beans, however, tends to increase at the rate of about 500,000 bushels annually. At the beginning of the movement of the 1928 and 1929 crops, stocks were practically exhausted. During the period July 1, 1928, to July 30, 1929, a net total of about 18,550,000 bushels moved into consumptive channels. Although prices during this period were abnormally high because of the short supply, the imports were a little less than average, owing to the small crop of 1928 in other countries.

In 1929, to the contrary, the bean crop was large in Rumania, Japan, and other important producing countries. Unusually heavy imports of 943,000 bushels during the first four months (September-December) of the 1929-30 marketing season, were encouraged by the high United States price level of beans at that time, depleted stocks generally, low production of pea beans in this country, and, probably, anticipation of upward revision in the tariff on beans. These imports depressed prices, especially those of pea beans.

The harvested acreage in Michigan and New York, composed largely of pea beans, was 28 per cent greater in 1929 than in 1928. Because of low average yields, however, the production of pea beans was only 5,500,000 bushels, or slightly more than in 1928, and 800,000 bushels below the average for the preceding five years. But the proportion of merchantable beans was higher in 1929 than usual. An average yield on an acreage equal to that harvested in 1929 would result in a total production of over 7,000,000 bushels. Therefore, no increase in the acreage of pea beans seems warranted, and some reduction may be advisable to guard against an undue surplus and attending lower prices. A protection of around 6,500,000 bushels prepared for market so as to maintain the high standard of quality desired by discriminating purchasers would assist in holding for pea beans their favorable place in the domestic market.

Farm prices of pea beans rose abruptly during the first part of 1928, advancing by April to over \$8 per 100 pounds to growers. This high level was maintained almost continuously until in September, 1929. With heavy imports of similar types from continental Europe, Japan, and Canada, and increased production of competitive types in this country prices to growers had declined to \$6.50 per 100 pounds by December 15, 1929, which still is higher than at any time during the years 1923-1927, inclusive.

The 1929 production of 2,376,000 bushels of great northern, which is 16 per cent larger than that of 1928 and 6 per cent larger than the previous high record of 1927, should be ample to meet the growing demand for this class. The acreage devoted to great northern was increased about 12 per cent in 1929. The average yield per acre was 18.5 bushels, which is about 2 bushels more than in 1928, and about one-half bushel above the 5-year period 1924-1928. With yields equal to the 5-year average a material increase in the acreage devoted to this class in 1930 would probably depress prices still further.

Total production of red kidney beans in 1929 was about 300,000 bushels less than in 1928 and 350,000 less than the 5-year average, 1923-1927. This low production was due principally to low yields, with an especially short crop of dark red kidneys as evidenced by the prevailing high price of this class which is commanding a premium of \$2 per 100 pounds over light red kidneys. With average yields in 1930 on an acreage equal to that of 1929, production is likely to be sufficient for demand.

The acreage of pintos harvested in 1929 was slightly less than in 1928. A smaller-than-average abandonment of planted acreage, together with unusually heavy yields resulted in a total production of 3,527,000 bushels compared with 2,250,000 bushels in 1928, and an average of 2,100,000 bushels during the previous five years. This indicates the existence of a surplus of pintos. An average yield in 1930 on an acreage equal to that harvested in 1929 would produce about 3,000,000 bushels which, with a prospective carry-over, would still be above present demands for this class.

The production of Lima and baby Lima beans, grown almost wholly in California, on an increased acreage was about the same as in 1928 because of lower yields. Relatively high price levels for these classes are being maintained. An average yield on an acreage equal to that harvested in 1929 would produce 2,570,000 bushels, compared with 2,300,000 bushels in 1929.

Although the production of California pinks in 1929 was lower than in any year since 1924, prices declined the last of 1929 about 50 cents per 100 pounds largely because of the excessive supply of pintos with which they compete. The effect of this competition may be felt during the marketing of the 1930 crop.

CABBAGE

With relatively light holdings of old cabbage and reduced acreage in southern areas, the present prospect is for favorable markets. The situation next fall and winter will depend largely upon plantings in the late-shipping States. If acreage is slightly reduced in the late States and average yields are obtained, the present encouraging market situation may continue.

The 1929 production of cabbage in early States (Florida, Louisiana, Texas, and California) was the highest on record, chiefly because of large plantings in southern Texas. This larger early acreage followed the light production and small holdings of 1928 northern cabbage. Relative scarcity of old stock helped southern growers to obtain an unusually favorable price, considering the size of the crop. A reduction of about one-fifth in the early acreage was indicated by reports from growers for the present season and freeze damage has caused additional losses in the first plantings, leaving a smaller area of early cabbage than in any year since 1926. The intended reduction resulted from the lower market price, associated with the heavier crop of late or northern cabbage last fall. The storage stocks this winter are relatively small. In view of the limited holdings North and West and the smaller acreage in the South, growers now shipping early cabbage are expected to have a fairly favorable season. Opening prices in the lower Rio Grande Valley of Texas were encouraging.

The second-early group (Georgia, North Carolina, South Carolina, the Norfolk section and Eastern Shore of Virginia, Alabama, Mississippi, and the spring area of Louisiana) ships largely from April until June. These States together had a very large crop in 1929, exceeding all previous records. Overlapping of the early crop helped to make a congestion of shipments in the spring, so that the average farm price per ton dropped to a lower level than ever before. Remembering the 45 per cent decline in the farm price last year, growers in the second-early States are planning a 10 per cent reduction in their 1930 acreage, which, with average yields, may improve prices only slightly, unless acreage losses from recent freeze damage are not made up in replantings.

Marketing conditions for cabbage are usually most difficult during the summer months, when the intermediate-shipping States are active. Plantings in this group (from Maryland, Delaware, New Jersey, and Long Island through southwestern Virginia and the middle tier of States to Iowa, Missouri, and Arkansas, including also New Mexico and Washington) were increased last season to a total of 24,000 acres—the highest ever reported. Relatively light yields per acre helped to reduce the production below that of 1928 and increased the average farm price by one-fifth over the 1928 price level. Acreage in these States has shown a gradual upward trend annually since 1924, increases in acreage being relatively larger in years following high prices. It is possible that growers may be planning some further acreage increase in 1930, but it will pay them to remember that low yield was the factor causing the 1929 market situation to be more favorable than that of 1928. Instead of increasing plantings, growers in these States should decrease their acreage by at least 5 per cent or down to the more moderate plantings of years prior to 1929. This reduced acreage, with average yields, would furnish adequate supplies in view of the summer price slump that is usually experienced.

Plantings of late or main-crop cabbage in 1929 were increased 12 per cent over the previous year, but the average yield per acre was the lightest in eight years, which kept production down to a fairly moderate volume. The average farm price for the late States declined 13 per cent, or about \$2.50 per ton, but is still the second highest price since 1921 and about 70 per cent above the average of yearly prices from 1923 to 1927. There was a particularly sharp decrease in the New York price in 1929. More than one-fourth of the late crop is grown for sauerkraut. Demand was active last fall and the quantity used for manufacturing purposes was greater than in any of the last six years except 1927. Returns for "kraut" stock were rather favorable. On the strength of the exceptionally high prices received the past two years, growers in the late States are likely to be considering a material increase in the acreage in 1930. Even if the acreage is held down to the 1929 level and average yields are secured, the resulting crop would be almost as large as that of 1927, which would probably lower the average farm price from 30 to 40 per cent below that of 1929. No increase in acreage seems warranted in the late States, in view of these possibilities and the rather uniform demand for late cabbage as indicated by car-lot movement.

LETTUCE

With the constant tendency toward expansion of lettuce acreage, particularly in California and Arizona, the industry is faced with a real problem in the orderly distribution of the crop, in the prevention of serious overlapping of shipping periods in competing districts, and in the production of high-quality lettuce.

A moderately increased total commercial production of lettuce in 1929 over that in 1928 was marketed at higher average prices. The pronounced increase in the demand for lettuce, which has characterized the past several years, continued in 1929 and there is as yet no evidence that the peak of demand has been reached.

Growers should not, however, assume that markets can be expanded sufficiently to absorb a very large immediate increase in production at the present level of prices. Production in New York in 1929 was 73 per cent larger than in 1928 and as a result prices dropped 58 per cent. Similar conditions were experienced in the Imperial Valley of California in 1926-27 and in the California spring-lettuce area in 1928.

The commercial acreage of lettuce in the United States has increased each year since 1918 with but one exception. Car-lot shipments of lettuce have shown an increase every year since 1918. During this period the area in commercial plantings has grown from 16,090 acres to 141,430 acres; and shipments have increased from 13,788 cars to 53,260 cars. Practically all of these increases have been in the States that produce Iceberg-type lettuce, principally California, Arizona, and Colorado.

Acreage in the early States (Imperial Valley of California, Arizona winter crop, Texas, and Florida) is estimated at 54,500 acres as compared with 46,820 in 1929. Arizona is just completing the marketing of its early-winter crop and the season will probably not prove entirely successful because of poor stands resulting in low yields. The Imperial Valley of California at this season becomes the principal source of lettuce shipments. An early forecast of production in this district indicated that the crop would exceed the largest production previously recorded, which was 5,230,000 crates in 1927.

TOMATOES

In general, the total acreage of tomatoes grown for shipment to market in 1930 should be held close to that of 1929 or decreased. With average yields and medium quality, this policy would probably result in returns, for the country as a whole, averaging somewhat below the high level of 1929 returns which were largely the result of the unusually good quality of late-spring and mid-season production.

Fall plantings in Florida and Texas, although never a large percentage of the entire acreage of the country, assumed greater importance in the fall of 1928. Acreage on the Florida east coast was increased from 400 acres in the fall of 1927 to 4,000 acres in the fall of 1928, and south Texas plantings were increased from 800 to 1,400 acres during the same period. Plantings this last fall were almost as heavy as in the fall of 1928, but losses from storm, frost, and other weather damage reduced the acreage to less than one-half that of the 1928-29 season, and reduced indicated production to little more than half.

In spite of heavy losses to the fall crop in Florida and Texas, there is danger that the spring planting in these two States and in the Imperial Valley of California is being overdone. Early reports from growers indicated that the plantings in Florida may be only slightly less than the acreage last spring and that the acreage in the lower valley of Texas is doubled (from 8,000 acres in 1929 to 16,000 in 1930), which in itself would mean a 20 per cent increase in the entire early acreage of the three States. In 1929, these early States planted an acreage 13 per cent larger than in 1928 but lower yields resulted in a production 10 per cent below that of 1928. Prices averaged almost 20 per cent lower than the year before principally because of the heavy market movement of domestic supplies early in the season in competition with a large volume of imports. So far in the 1929-30 season, imports have been below those of the previous season, with substantial decreases in supplies from the west coast of Mexico and from the Bahamas. These decreases, however, are being offset greatly by increased imports from Cuba. If growers in the early States have carried out the full acreage intentions reported, they face much lower returns than were received in 1929. In addition to the acreage increase, there is a probability that yields will average higher than in 1929, when yields on the Florida east coast were low, and that imports will be only slightly lower this year.

Danger is present, also, in the acreage situation in the second-early States, in that too large an acreage may be planted in 1930, particularly in view of the prospective increase in the spring crop. Acreage in the second-early States

(South Carolina, Georgia, Louisiana, Mississippi, and Texas) shows a pronounced upward trend, having trebled from 1918 to 1928. Acreage in 1929 was reduced 10 per cent below the record acreage of 34,400 acres in 1928 but yields averaged one-fourth heavier. Production was 12 per cent larger, and of exceptional quality, and prices averaged almost 30 per cent higher than in 1928 when unfavorable weather lowered the carrying quality of the crop. These five States, and notably Mississippi and Texas, have expanded acreage to the point where, in years of average yield and good quality, the crop fits comfortably into its market position. Any further acreage increase in 1930 appears extremely inadvisable.

The intermediate shipping States (Arkansas, Tennessee, Missouri, Virginia, Maryland, New Jersey, and one county each in Ohio and Illinois) made a slight decrease in their 1929 commercial shipping acreage after two years' expansion from the low acreage of 1926. Although production in 1929 was about one-fourth greater than the year before, the crop was of better quality than the 1928 crop, which was marketed at the lowest average price since 1922. The 1929 crop sold at a 30 per cent higher price than the 1928. Growers in these States in general should refrain from increasing acreage in 1930 above the general level of the 1928 and 1929 plantings if average returns of recent years are to be maintained. Where acreage plans in any of these States are partially influenced by the probable requirements of canners for tonnage purchased on the open market, shipping growers should consider the possibility of a lighter demand for noncontract tomatoes than in 1929.

Of the late States, California (outside of Imperial Valley) has about one-half the shipping acreage and Indiana about one-seventh. New York, Illinois, and Kentucky together account for one-fourth and the remainder of the acreage is scattered in Colorado, Oregon, Utah, Iowa, Michigan, Ohio, Pennsylvania, and Delaware. These late States, except for a sharp decrease in 1926, have fluctuated between 34,000 and 38,000 acres since 1922. The trend in recent years has been downward. Acreage decreases in some of the Eastern States in 1926 were counterbalanced in 1927 by a large expansion in the California acreage. Production in the last four years has settled at about the level of 4,000,000 bushels. In view of the fact that these States ship their crop when adequate local supplies are available on the markets, there is no inducement for an acreage increase. A continuation of the tendency to make slight yearly reductions in the shipping acreage may be necessary to maintain the average price level of the last two years.

Production of tomatoes for market is closely associated with production for canning and manufacturing purposes in many of the intermediate and late States.

The 1929 production of tomatoes for canning and manufacturing purposes was nearly 50 per cent larger than the extremely short crop of 1928 and was the largest crop since 1925. Following the light pack of canned tomatoes in 1928, the larger pack this past year is not expected to result in an excessive carry-over. Although in recent years, increasing fresh-tomato supplies on the markets have served to retard the upward trend of consumption of canned tomatoes, present canned-tomato stocks are expected to be absorbed without difficulty. Since, in the production of tomatoes for canning, contract prices are a settled factor at the beginning of the season, growers of cannery tomatoes should give further attention to the more variable factors affecting their returns, such as yields and quality. Growers of good-quality tomatoes have had their returns increased materially in some sections of Indiana, New York, Pennsylvania, and other States where canners and growers have adopted a system of buying and selling on the basis of United States grades. Under this system a substantial premium paid to the grower of a good grade of tomatoes provides an incentive for the production of better-quality stock to the mutual advantage of canner and grower.

ONIONS

Onion growers in most States will find it advantageous to reduce their acreage somewhat in 1930 as compared with 1929. This applies in particular to producers of main-crop onions in the Northern States where the acreage has been increasing and prices have been declining. With present storage holdings on high levels the 12 per cent acreage reduction intended in the early States hardly seems sufficient to bring prices to a more favorable level.

The early Bermuda and Creole onion States (California, Louisiana, and Texas), with 25,000 acres, showed little change in 1929 from the high acreage and production of the previous year, with prices about \$1 per bushel for both years. The record 1929 acreage was 61 per cent above the average acreage for the 5-year period 1923-1927. The average price for the last two years was 30 per cent below the average for the same 5-year period.

The mid-season shipping States (California, Iowa, Kentucky, New Jersey, northern Texas, Virginia, and Washington) showed a material decrease in 1929 from the large acreage and production of 1928. Prices increased sharply over 1928 levels but were still considerably below the average of the previous five years. A further decrease in acreage below that of 1929 in these States which are subject to competition from both early and late groups would tend to restore more favorable price levels.

Growers of the late domestic onion crop failed last year to recognize that the small production in 1928 which resulted in high prices was largely due not to the reduced acreage but to the smallest yield per acre since 1921. Plantings in these Northern States in 1929 were about 17 per cent above the 1928 acreage and the average of the previous five years. The large acreage in 1929 was accompanied by a high yield per acre and resulted in a record production. All important States of the late group except Indiana and Massachusetts increased their acreage. The increase in Colorado was outstanding, the acreage being about doubled in 1929, the production more than doubled, and the average price reduced about two-thirds compared with 1928. A reduction of 15 per cent from the 1929 acreage would, with average yields, still give a production equal to the average the last five years. Growers of this group should remember that, although there have been alternate years of increase and decrease in acreage with surprising regularity during the last 10 years, the general trend has been upward. A corresponding downward trend in prices indicates that the acreage increase has been at too rapid a rate.

CITRUS FRUITS

The 1930 outlook indicates, as did those of the four previous years, a considerable increase in the bearing acreages of oranges and grapefruit. Many trees now in bearing have not reached the age of maximum yield and a large increase in production may be expected in years when favorable growing weather prevails. The bearing acreage of lemons has not shown any pronounced change since 1921; a slightly downward trend is now indicated, but production is on a high level and the industry still is confronted with difficult marketing problems.

Of the total shipments of oranges in the United States about 66 per cent move from November to April, inclusive. Practically all of the crop, except the California Valencias, move during this period. Assuming an average of 70 trees per acre, total orange acreage in Florida is estimated at 195,000, of which about 15 per cent is nonbearing. Under more favorable conditions than have prevailed in recent years a material increase in production may be expected. Texas, with an acreage of 18,900, has only about 25 per cent in bearing. As contrasted with the situation in Florida and Texas, California Washington Navel production has probably reached its peak. Only 3 per cent of the 100,500 acres of Washington Navels are classified as nonbearing. A further increase in bearing acreage and production of California Valencias is expected. Of the total acreage of 112,200 acres, 20,900 acres, or 19 per cent, are classified as nonbearing. During recent years there has been a marked upward trend in both production and prices of California Valencias which indicates a substantial increase in the demand for them. This upward trend in demand is expected to continue but at a slower rate.

The importance of an export outlet for California Valencias in years of large crops was demonstrated last year. During the 1928-29 season over 1,500,000 boxes of oranges were shipped to foreign markets, exclusive of Canada. Most of these were Valencias shipped from May through October. Increasing supplies of South African and Brazilian oranges are being placed on European markets during these months and there are indications of greater competition from these sources in the future. Growers of winter oranges can expect an outlet in Europe for only a relatively small quantity of the higher-grade fruit in view of the keen competition from Spain and Palestine.

Florida, with a total grapefruit acreage, estimated at 80,000 acres, has approximately 95 per cent of bearing age. Texas, with approximately 70 per cent of the acreage of Florida, is estimated to have only about 20 per cent of bearing age. The California bearing acreage is reported as 9,000 with a forecast of 11,800 bearing acres for 1932. Porto Rico with an acreage estimated at 3,800, has not fully recovered from the damage resulting from the hurricane of 1928. It is reported that not until another season will Porto Rico be shipping as heavily as before the hurricane.

There are good prospects for a continued expansion in the foreign markets for grapefruit. In 1929 Great Britain took more grapefruit than ever before, but the per capita consumption is still far behind that of the United States or even Canada. Porto Rico is supplying an increasing share of the British grapefruit imports. Continental European countries are showing a greater interest in grapefruit and the outlet there will undoubtedly expand, particularly if efforts are made to acquaint consumers with the merits of this fruit.

Canning of grapefruit offers another marketing outlet. During the last season 957,000 cases were packed as against 455,100 in 1927. In addition, canners put up 202,000 cases of grapefruit juice.

In view of the prospective large increase in production, especially of grapefruit, during the next few years, and the consequent probable depressing effect on prices, only those with the wisdom and skill in production that come from successful experience or adequate training should contemplate new acreages even for replacements. The outlook with respect to the Mediterranean fruit fly in Florida is much more encouraging than was anticipated last spring.

In California, where practically the entire lemon industry of the United States is located, production in some recent years has been so great that difficult marketing conditions have resulted. Bearing acreage has not changed greatly since 1921 although the slightly downward trend which began in 1926 is expected to continue for the next few years. Indications are that production is now near the peak.

APPLES

As indicated in the 1929 outlook report, commercial production of apples for the country as a whole probably will continue to increase gradually for several years. However, the apple industry has recovered largely from the disturbed conditions which accompanied the rapid expansion of plantings in the Northwest and elsewhere, 20 to 25 years ago, and the rate of increase in commercial production is expected to be less than during the years when these plantings affected production most. The extent to which the industry has recovered and the tendency toward more moderate plantings in recent years is encouraging for the efficient commercial grower who produces fruit of high quality. But the large number of relatively young trees now planted indicates an increase in commercial production over a period of years as well as heavy production and low prices when weather and other growing conditions are especially favorable throughout the apple areas. Notwithstanding the low production and the relatively good prices of 1927 and 1929, commercial plantings appear to be justified only where unusually favorable conditions exist for the economical production of good-quality fruit.

Plantings of a few years ago in the East show a decided shift to such varieties as the Delicious, McIntosh, Jonathan, Stayman Winesap, Winesap, and Yellow Transparent. Apples of those six varieties constituted 43 per cent of market supplies in the 1926 season, according to a survey of 41 cities in the United States, and the large numbers of young trees of these varieties indicate increasing production for several years. On the other hand, trees of some varieties, such as Baldwin, Rome Beauty, Rhode Island Greening, Ben Davis, and York Imperial, as a whole, have been only moderately planted in recent years and little, if any, increase in production is expected from this group. These five varieties made up only 26.8 per cent of the 1926 market supplies in the 41 cities. Recent plantings, as well as market supplies of many of the minor varieties, have been light.

According to an apple-tree survey made in 33 States, which produce over 90 per cent of the United States' apple crop, from 25 to 30 per cent of the trees in the commercial orchards reported were less than 9 years old at the beginning of 1928, and 65 to 70 per cent were under 19 years old at that time. As the older orchards, as a class, have fewer trees per acre, the proportion of the

acreage in young trees is somewhat less than the proportion of young trees. However, with general tendencies toward an increasing bearing life and an increasing productive capacity per tree, owing to better orchard management and to the greater proportion of orchards on the better locations, it seems reasonable to expect a continued upward trend in commercial production for several years. This tendency toward increasing commercial production probably will continue to be partially offset by declining production in family orchards, since the rate of plantings in such orchards has decreased in recent years and since the family orchards generally receive little attention. But the apples produced by the millions of trees in these small orchards will continue to have considerable influence on apple prices, especially in seasons when growing conditions are good throughout the apple country.

In the barreled-apple States recent commercial plantings have been fairly heavy and at the beginning of 1928 about two-thirds of the trees reported in the survey of commercial orchards were less than 19 years old and nearly one-third were under 9 years. The pronounced movement toward better management of commercial orchards easily may become a factor of increasing significance, and contribute materially to the bearing capacity of the commercial orchards in the barreled-apple States.

Evidence each year becomes more convincing that production in the Northwest is near its peak. Yearly production in the boxed-apple States during the last four years was 80 per cent higher than the average of 10 to 15 years ago, but only 4.5 per cent greater than the average of 4 to 8 years ago. At the beginning of 1928, only 13 per cent of the trees reported in the survey of commercial orchards of the four principal western apple States—Washington, Oregon, Idaho, and California—were under 9 years of age. Recent plantings have been light and removals in the less favorable sections have continued. About 70 per cent of the trees in the commercial orchards of these four States are less than 20 years old, but in the West as a whole, no material increase in production is in sight. The boxed-apple States contributed a large part of the increase in commercial apple production of the United States. Production in these States increased from about 19,000,000 bushels per year during the period 1909-1913, to about 55,000,000 bushels annually during the years 1925-1929.

As indicated in the 1929 outlook report, the Delicious, the McIntosh, the Stayman Winesap, and the Yellow Transparent have been planted extensively during recent years. Trees of these four varieties constituted one-fifth of the commercial apple trees reported in the tree survey of the important apple-producing States. About half of these trees were planted during the 8 years just preceding 1928, and from 85 to 95 per cent were planted during the 18 years preceding 1928. Winesap, Jonathan, and Rome Beauty represented another fifth of the trees in commercial orchards. About one-quarter of these trees reported were under 9 years of age, and 75 to 80 per cent were under 19 years old at the beginning of 1928. Production of these seven varieties is expected to increase during the next several years.

Among the older winter varieties, Ben Davis is declining. Less than 7 per cent of the trees reported of this variety throughout the important apple States were planted during the period 1920-1927. Only light plantings of the York Imperial have been made during this time. Baldwin, Northern Spy, and Rhode Island Greening have been planted only moderately during recent years. Many less important varieties are giving way to the more popular.

Exports of apples from the United States during the last five seasons have averaged 15 per cent of the commercial crop. In the 1928-29 season exports amounted to 16 per cent of the commercial barreled-apple crop and 24 per cent of the commercial boxed-apple crop. Prices received for American barreled apples in foreign markets have been little, if any, higher than in the 1928-29 season and total exports have declined considerably this season compared with 1928-29. This has been particularly apparent in the British market. The uneven quality of American barreled apples sent to British markets and the much increased competition from Canadian barreled apples have been primarily responsible for this situation.

It is becoming clear that eastern shippers and growers of barreled apples must expect increasing difficulties in disposing of low-grade fruit in European markets at profitable prices. These markets already have large supplies of fruit from European orchards. Outlets in European continental markets were reduced this year by competition from larger European apple crops and the demand for high-grade American apples has held up fairly well.

Over a long time period it seems probable that the outlet for such apples in the continental markets will continue to expand.

The outlook for the remainder of the present export season is not particularly bright. Exports this season through December were about 6,899,000 bushels, which is 38 per cent less than the heavy exports during the corresponding period last season. Supplies of Spanish oranges on European markets are very large this year and prices are low. Furthermore, present prospects point to a considerable increase over last year in Australian and New Zealand apple exports to Europe beginning in March. This will tend to restrict the outlet for cold-storage apples from the United States during the latter part of the season.

In some respects, the outlook for the remainder of the present marketing season is rather favorable, but owing to lowered consumer purchasing power, there is not likely to be the seasonal advance in prices for the remainder of the 1929 crop which was expected at the beginning of the season. The 1929 commercial apple crop was 18 per cent below that of 1928 and 10 per cent below the average of the previous five years. Cold-storage holdings on January 1, 1930, were 12 per cent less than on January 1, 1929, and 1½ per cent less than the January 1, 5-year average of 1925-1929. The smaller crops of citrus fruits and pears will offer less competition than last season on domestic markets.

PEACHES

Notwithstanding the small crops of peaches in most of the leading areas in 1929, due chiefly to adverse seasonal conditions, the number of trees of bearing age is still so great as to make possible heavy production and unfavorable marketing situations during the next few seasons. In the South the peak of production from trees now in orchards has probably been reached, and the trend is expected to be downward. In California the indicated trend in production of clingstone varieties is upward, whereas the production trend of freestone varieties is expected to continue to decline. In most other peach-growing areas only moderate changes in production are in prospect.

In the South under favorable seasonal conditions and with reasonable cultural attention, heavy production may still occur during the next few seasons. Carload shipments in the Southern States during the last four years have averaged 34 per cent more than for the preceding 4-year period. Five States—Georgia, North Carolina, South Carolina, Tennessee, and Arkansas—accounted for 96 per cent of the southern shipments in the last four years. During the spring of 1929, a survey of approximately 2,900 commercial orchards of 100 or more trees each, in these five States, indicated that 27 per cent of the trees were less than 6 years of age, 56 per cent were from 6 to 9 years of age, and 17 per cent were 10 years of age or over. The survey of commercial orchards in these same States, four years earlier, showed a distribution of 67, 24, and 9 per cent in the respective age groups. These figures indicate that recent plantings in these States have been relatively light and that nearly 60 per cent of the trees are near the age of maximum yield which, in the South, is probably about 8 or 9 years. Many trees have been removed or weakened by neglect and disease. A downward trend in production in the South is therefore expected.

The proportion of young trees is now much lower than in 1925 in four of the five States. In Georgia, trees less than 6 years old constituted 23 per cent of all trees in the commercial orchards reporting in that State in the 1929 survey, compared with 59 per cent in the 1925 survey. For the four other States corresponding percentages were: North Carolina, 20 per cent in 1929 compared with 79 per cent in 1925; South Carolina, 35 per cent compared with 89 per cent; Tennessee, 24 per cent compared with 81 per cent; and Arkansas, 69 per cent in both surveys. The large percentage now under 6 years of age in Arkansas is due chiefly to very heavy plantings in some sections of that State in about 1924.

In some districts in the South as well as in other areas many growers are confronted with serious problems of production, due to such causes as difficulties in financing, disease of trees, and insect damage. Many of the orchards suffering from neglect could be restored to a satisfactory condition if the economic situation of the growers in these districts should improve. The oriental peach moth is a menace in the eastern, mid-western, and some southern peach areas. These factors add an element of uncertainty to the outlook.

The work of eradicating trees affected with phony peach disease has been about completed in northern and central Georgia where few affected trees were found and is progressing in the southern part of the belt where the disease is more prevalent. The outlook is encouraging for controlling damage from this cause by removing practically all affected trees in the southern Georgia district within a year or two. The removal of diseased trees will probably not decrease production in proportion to the number of trees removed, as many of the diseased trees have been producing only small quantities of inferior peaches.

In Georgia the reports of commercial orchards represented in the 1929 survey showed a total of 3,360,000 trees removed from 1926 to the spring of 1929, and an additional 340,000 trees standing abandoned in the orchards but not included in the count of orchard trees. The survey in Georgia is believed to have covered at least 95 per cent of the commercial trees. These abandoned and removed trees amount to 30 per cent of the total number of trees estimated to have been in these commercial orchards at the close of 1925. More than four-fifths of the abandonment and removal of trees took place in the southern Georgia district, where the 3,000,000 trees reported as removed or abandoned during the period represent almost 45 per cent of the trees in the orchards at the close of 1925. Plantings from 1925 to 1929 have served to replace one-third of the trees removed or abandoned in Georgia, the reports indicating the replacement ratio for the northern district to be one-third, for the central district three-fourths, and for the southern district one-fourth.

The southern Georgia district, where removals and abandonment have been heaviest, normally has but little competition in the markets until the latter part of its shipping season. The considerable plantings that are being made in this district, particularly of the Hiley variety in general, seem justified.

Plantings in the southern and central districts in the last five years have included considerable numbers of early varieties. The Early Rose Uneeda, Early Wheeler, and Mayflower varieties represented 8 per cent of the total number of trees reported in the 1925 survey in Georgia, whereas the 1929 survey indicates that they now represent almost 14 per cent of the Georgia trees. Although these early varieties have usually brought good prices at the beginning of the season, experience has demonstrated that there is a generally limited demand for them.

To summarize conditions in the five leading Southern States, commercial plantings in recent years have not been sufficient to maintain the present number of bearing trees, since for the five States the trees under 6 years comprise only 27 per cent of the total. Some reduction in potential bearing capacity for the region is desirable as recent heavy crops have resulted in low prices. For the region as a whole, the average rate of plantings of the last six years could be increased at least 50 per cent in the next few years and the production level five to eight years from now would still be below that of recent heavy crop years. This is assuming a life of 13 to 15 years for southern peach trees. New plantings, however, should be made only on favorable sites and by growers who are prepared to give them proper cultural attention.

In the principal Middle Western States (Illinois, Indiana, Ohio, Michigan, and Missouri) carload shipments of the last four years have been 70 per cent greater than for the preceding 4-year period. Fifty-two per cent of the production in this group in 1929 was in Illinois. In the southern part of Illinois where weather hazards are not so great as farther north in the State's peach belt some increases in production during the next few years are likely to occur.

The East, the Rocky Mountain States, and the Pacific Northwest, when considered by regions, have shown only moderate changes in commercial production during the last four years as compared with the previous four. In western New York peach acreage is decreasing considerably.

Moderate planting in favorable locations in the East, Middle West, Rocky Mountain States, and Pacific Northwest, to about maintain the present bearing acreage, seems advisable. Because of local conditions of production and marketing some shifts in producing districts and varieties within these regions are occurring.

In California, as a result of a severe freeze, the 1929 crop was only a little more than half the size of the large 1928 crop. Under normal weather conditions, however, very heavy production of clingstone peaches is anticipated for the next few years. The peak of clingstone production is not likely to be reached until 1931 or 1932 at which time it is probable that the trend of

production will be about 15 per cent higher than in 1928. As contrasted with the prospective increase in clingstone production, it is expected that the production of freestone peaches will continue to decline. Of the 67,400 acres of freestones in California in 1929, 90 per cent were in bearing, and 71 per cent of the bearing acreage was 11 years of age and over. The number of young freestone trees now planted is not sufficient to replace the loss that will normally occur in the old trees.

GRAPES

The probability of heavy grape production continues. With favorable weather conditions grape acreage is still large enough to produce a crop of sufficient size to cause difficult marketing conditions. It is believed that the bearing acreage of table and raisin grapes in California has passed the peak and is declining. However, additional immediate reduction is recommended. Most of the States producing American-type grapes are at present showing no tendency to increase acreage, although Arkansas has probably not yet reached its peak of bearing acreage. Growers in these States, particularly New York, Pennsylvania, Ohio, Michigan, Missouri, and Arkansas, should not plant new acreage unless they are located in districts which, because of very favorable marketing conditions such as large near-by markets and ability to market by motor truck, provide good outlets at low delivery costs.

In California the peak in the bearing acreage of juice grapes has probably not been reached and the decreases in bearing acreage of table and raisin grapes in 1930 will probably represent but a very small percentage of the total bearing acreage. The 1929 crop in California was estimated at 1,751,000 tons as compared with 2,366,000 tons in 1928. This smaller production was due chiefly to unfavorable weather conditions. As a result of the smaller production, prices for California grapes in 1929 were on a considerably higher level than in 1928, but were still unsatisfactory for most sections of the State. Where average yields were secured prices were probably sufficiently high to induce growers to take good care of their vineyards. However, these higher prices should not be construed as indicating that new plantings are warranted; in fact, considering potential production the reverse is true.

Notwithstanding much smaller production of California grapes in 1929, only fair prices prevailed during the shipping season. This indicates that the lower demand that prevailed during the 1928 season has continued. Because of the ease with which certain varieties of grapes can be used for raisins, table purposes, or juice, any substantial change in the prices of one class of grapes is likely to be reflected in the other classes.

Out of a total production of 1,018,000 tons of raisin grapes in 1929, 780,000 tons were dried for raisins. In 1928 the production of raisin grapes totaled 1,406,000 tons, of which 1,044,000 tons were dried for raisins. In 1929, 238,000 tons of raisin varieties were marketed fresh as compared with 302,000 tons in 1928 when 60,000 tons were not harvested.

The States producing American-type grapes (or so-called eastern grapes) had a smaller crop in 1929 than in 1928 and this, together with the fact that California had a much smaller production, would seem to indicate that eastern grapes should have brought considerable higher prices in 1929. As a matter of fact, eastern grapes sold at prices only slightly higher than in 1928, indicating a lower demand. Although bearing acreage in Arkansas has probably not reached its peak, it is believed that new plantings are no more than sufficient to maintain the bearing acreage which will be reached in 1930. Missouri, Michigan, and New York are, if anything, reducing bearing acreages, and, in view of the potentially large production in California, plantings other than those just sufficient to maintain present bearing acreage are not warranted.

Not only was grape production in California and Eastern and Middle Western States smaller in 1929 than 1928, but competition from other fruits was much less severe in 1929. Shipments of eight kinds of fruits, other than grapes, were about 17 per cent less from July to October, inclusive, in 1929 than they were the previous year. In view of this lighter production of competing fruits and the reduced production of grapes in 1929, and considering the rather low prices in 1929, it is evident that bearing acreage, particularly in California, must be reduced in order to secure profitable returns. The only alternative seems to be the development of a marked increase in consumption and it is doubtful if this will develop within the next few years.

STRAWBERRIES

Prospects for strawberry growers now seem to be better than in any year since 1926. With material decreases of acreage among the second-early and intermediate sections and only a moderate increase for picking in 1930 in the early States, the marketing problem should be greatly relieved this season, provided yields are not above average and the ripening periods are normal. Not only are smaller acreages in prospect for 1930 but there is a likelihood of lower yields per acre in some districts. Old fields in a number of districts are in relatively poor condition, because of drought last season and lack of care following low prices. Tentative reports indicate little change in the 1930 acreage in the late States, as compared with recent years.

Preliminary figures show a net reduction of about 16,000 acres or 8 per cent from last year's total acreage. Practically all of this reduction is indicated in four States—Arkansas, Missouri, Kentucky, and Tennessee—where about one-fourth of the commercial strawberry crop is grown and where prices have been relatively low and marketing conditions most unsatisfactory.

The indicated total of 184,000 acres for harvesting in 1930 appears to be fairly well balanced among the various producing groups. Further expansion of acreage in the early States does not seem advisable, since the price tendency has been downward during recent years when acreage was increasing. In the second-early and intermediate States, the indicated acreage for picking in 1930 should, with normal yields, result in as large a crop as can be marketed to advantage. However, in some of these States many of the old fields are now in poor condition and should be replaced with new plantings in the spring of 1930. The present acreage in the late States can well be maintained.

In the early shipping States there has been a distinct upward trend of production since 1925, and last year's record crop of 64,000,000 quarts in this group was nearly double the production of 1927. Louisiana growers, with a huge crop of 34,000,000 quarts, obtained an average price above 20 cents per quart. Florida also had a record-breaking crop and exceptionally high total returns. Greater production in all early States doubtless helped to force down the farm price to a rather low level in Alabama, Mississippi, and Texas. An increase of about 22 per cent in Florida strawberry acreage the present season may be partly offset by damage to the crop from recent low temperatures. Florida and Louisiana have so little competition in the marketing of their crops that the combined increase of 7 per cent in acreage in these most important States of the early group does not seem excessive.

Total 1929 production in the second-early States (Georgia, the Carolinas, Virginia, Tennessee, Arkansas, and southern California) was about 7 per cent below that of 1928, but the average farm price in this group declined to slightly less than 11 cents a quart, the lowest point in recent years. Peak shipments in 1929 came shortly after the middle of May, or about two weeks earlier than usual, when Arkansas and Tennessee were most active. The indicated acreage reduction this year of 26 per cent in Arkansas and 20 per cent in Tennessee should assist greatly in relieving the mid-season market congestion. For the second-early group as a whole, the indicated 18 per cent reduction of acreage is in line with previous recommendations and will place this area in far better balance than it has been in recent years. Plantings in 1930 should be only sufficient to maintain the present acreage.

Among the intermediate-strawberry States, a reduced acreage and a rather moderate yield per acre in Missouri apparently helped the 1929 situation. There was also a reduced crop in the Eastern Shore district, although some local congestions were reported during the shipping period. The average farm price of berries in this intermediate group (Maryland, Delaware, New Jersey, Kentucky, Illinois, Missouri, Kansas, Oklahoma, and California) advanced slightly to about 11 cents per quart. A net decrease of 5 per cent in production in these States resulted in a net gain of 6 per cent in the total farm value of their crop. The indicated 13 per cent reduction of acreage in this group, this season seems to be adequate.

The 1930 strawberry acreage in the late States (Pennsylvania, New York, Ohio, Michigan, Indiana, Iowa, Wisconsin, Utah, Oregon, and Washington) will apparently be maintained at last year's level. Slight reductions in Washington, Oregon, Indiana, and Ohio will be nearly offset by increases in Pennsylvania, New York, Michigan, and Iowa. This group as a whole had a successful season in 1929, averaging about 16 cents per quart to growers. The cold-pack

industry in the Pacific Northwest and Utah has shown rapid expansion. The shipping of individual packages of this frozen fruit is increasing and may, in time, compete with fresh berries from Florida.

CANTALOUPE

If growing and marketing conditions are average in the early-cantaloupe sections in 1930, an acreage equal to that of 1929 will probably result in farm prices being lower than they were in 1929. In the intermediate and the late sections a moderate decrease in acreage seems necessary if prices are to be brought to the higher level prevailing prior to 1928.

In Imperial Valley, California, which produces nearly all of the early crop and about 40 per cent of the total crop, an increase of about 15 per cent in the acreage in 1929 (to 38,360 acres), and an increase of 8 per cent in production, brought about the same farm price per crate as was obtained in 1928. This situation, however, was due to an unusually favorable combination of factors, such as scarcity of other fruits, excellent quality of cantaloupes, warm weather in eastern markets during the peak movement, and cooler weather in the Imperial Valley during the peak of shipments. This prevented a repetition of the low prices which have, in the past, resulted from large increases in acreage such as occurred in 1924 and in 1927.

Arizona and California (outside of Imperial Valley), representing almost half of the intermediate acreage in 1928, increased their plantings 15 and 18 per cent respectively in 1929 and received the lowest farm prices in recent years, averaging nearly 8 per cent below the low prices of 1928. The rest of the intermediate area, which competes only to a limited extent with the western areas, generally decreased its acreage in 1929, altogether amounting to a reduction of more than 13 per cent. Combined with lower yields, this decrease in acreage resulted in an average farm price for these other intermediate States almost one-third higher than the low price of 1928 but one-fifth below the high price of 1927. The 1929 acreage in Arizona and California (outside of Imperial Valley) was 23,600 acres and in the other intermediate States 22,310 acres.

In the late States the 21,260 acres of cantaloupes in 1929 constituted a 9 per cent increase over 1928, but was 2 per cent below the average acreage from 1924 to 1928. Colorado usually produces one-half of the late cantaloupes, but in 1929 Colorado had a very high yield per acre on an acreage 13 per cent larger than the average of the previous five years. The result was a farm price about 20 per cent below the average price for the same period. New Jersey, which ranks second in late-cantaloupe production, has been decreasing its acreage since 1926 (from 4,500 acres in 1926 to 3,300 in 1929) and farm prices have shown an upward trend since that time.

Shipments of Honey Dew and other miscellaneous melons from Western States again made substantial increases in July, August, and September, above the same months of 1928, and are increasing the competition with the cantaloupes in the intermediate and the late States.

WATERMELONS

Apparently it will be to the interest of watermelon growers to plant a somewhat smaller acreage in 1930 than was planted in either 1928 or 1929, when acreage, particularly in the early and second-early States, was at very high levels. The 1929 commercial plantings of about 204,000 acres were only about 2 per cent below the 1928 acreage which was the second largest planting since 1918. Prices to growers during the last two years have averaged about the same but were slightly below the average for the years since 1920. Prices in 1929 would have been at lower levels, as a result of the larger yields, had there not been a very favorable combination of circumstances in the marketing of the crop.

Growers in the early and second-early States, especially in Georgia and Florida where about 60 per cent of the 1929 carload shipments of watermelons originated, are very unlikely to experience a marketing situation in 1930 equal to that of 1929. Much depends upon weather conditions during the harvesting and marketing period. It is extremely improbable that the small crop of tree fruits in 1929 will be repeated in 1930, and competition from this source is almost certain to be greater. There may be less competition with small fruits in view of the reported decrease in strawberry acreage in the States which move their crop in May and June. Growers in some of

the early and second-early areas may be inclined to increase acreage in 1930, but, unless the acreage is decreased from the high levels of the last two years, prices in 1930 can reasonably be expected to decline below the level of 1928 and 1929 prices.

In the late States, the 1929 planting of about 32,000 acres was 4 per cent larger than in 1928. The total acreage in the 14 States of this group amounted to only about 15 per cent of the total commercial acreage of the entire country in 1929 and is rather widely distributed among the various States. Because of the probable decrease in demand and the increased competition with tree fruits, it would be to the interest of growers in these late States not to increase their acreage in 1930. Only in localities in which prices depend upon the local market condition and in which the local marketing situation is favorable is it likely that the acreage can be increased in 1930 to advantage.

PEANUTS

Some reduction, probably between 10 and 15 per cent, in the acreage of peanuts to be harvested for nuts in 1930 from the acreage harvested in 1929, will evidently be needed to cause any material improvement in prices, if average yields are secured. Information on stocks is inadequate, but carry-over into the 1930 season, especially of Virginia-type nuts, may be much heavier than the relatively heavy stocks at the beginning of the present season. Recent prices have probably been low enough to produce such a decrease in the Southeast. Because returns from other crops were low there is danger that the acreage will be left unchanged in Virginia and North Carolina and that it may even be increased in the Southwest. If average yields in these areas are secured in 1930 on as large an acreage as in 1929, continued low prices may be anticipated.

Prices of good-quality nuts of the Virginia type are the lowest since 1922. Prices of good-quality Spanish and Runner-type peanuts are the lowest since 1921. Because of relatively low quality, an unusually high proportion of the current crop of southeastern Runners and southwestern Spanish will be crushed for oil. The No. 2 and No. 3 grades of shelled stock, which usually amount to about 15 per cent of the production, exert a depressing effect upon the market for the better grades of shelled goods, because of the possibility of using these low-grade nuts in the manufacture of low-quality peanut butter and peanut confections. If this inferior stock were, by common consent among the shellers, sold, as available, to the crushing mills, it would not appreciably affect the market for vegetable oil, of which peanut oil constitutes but a small part of the total supply, but the use of only the better-quality peanuts in the manufacture of peanut confections and peanut butter might stimulate their consumption and thus increase the demand for peanuts.

In 1929 Virginia, North Carolina, and Tennessee, which grow chiefly the Virginia type, harvested 400,000 acres, the largest acreage on record. This was 7 per cent above the acreage harvested for nuts in 1928 and 18 per cent above the average for the five preceding years. The Virginia-North Carolina production in 1929 was also the largest on record, but the proportion of high-quality nuts was low. Storage stocks in Chicago, January, 1930, of Chinese peanuts (which are of the Virginia type) were only about one-third as large as a year earlier, but stocks of domestic Virginia-type nuts in producing sections were 10 per cent of the previous crop, or twice as large as a year earlier. Present indications are that the carry-over of Virginia nuts into the next season will be even larger than it was at the beginning of this season. In spite of the reduced carry-over of imported nuts and the small proportion of large-size nuts in the 1929 crop, prices so far this season have been much lower, extra large shelled goods in January, 1930, selling at 9 cents per pound, compared with 11¼ cents 12 months ago and 13⅞ cents in January, 1928. Planting seed of the better strains of the Virginia-type nuts should result in an increase in the production of the extra large grade and place growers in a more favorable market situation.

Imports of peanuts, practically all of which are the Virginia type, for the season ended October 30, 1929, were equivalent to only about 15 per cent of the 1928 domestic production of this type of nut, were less than half the imports of the preceding season, and the smallest quantity imported since the 1921-22 season. These imports are mostly shelled and compete directly with the largest-size domestic Virginias. Current imports for this season have so

far been negligible, and because of the present tariff rate and prevailing low prices of domestic peanuts, are not expected to be a serious market factor for the remainder of the season.

The 1929 acreage of peanuts harvested for nuts in Georgia, Alabama, Florida, and South Carolina, where both Spanish and Runner-type peanuts are grown, totaled 659,000 acres. This was the largest acreage since 1924; about 10 per cent above the already large 1928 plantings, and about 25 per cent above the average yearly acreage during the five preceding years. With a yield per acre greater than in 1928 the production was about 15 per cent greater. The heavy production, coupled with considerable damage to quality in part of this area, has brought farm prices down to a level below the point at which farmers are willing to maintain the present acreage. Judging from past reactions they will be inclined toward a reduction of about 15 per cent, which is not an excessive decrease, considering their condition. Chicago storage stocks of shelled Spanish and Runner peanuts of the 1928 crop were known to be large when the 1929 crop came on the market, and uncertainty as to the actual volume of these stocks was a factor in the low price level this season. Shellers report that an unusually large proportion of the southeastern crop will be crushed for oil; probably at least half of the Runners and several million pounds of Spanish stock. This helps to account for the present low levels of prices in that area. Such disposal of a large part of the crop may improve somewhat the marketing position and demand for shelled stock, and should at least lessen the carry-over at the close of this season. It seems probable that farmers' stock Runners will be well cleaned up before the 1930 crop comes on.

The acreage of peanuts (chiefly of Spanish type) harvested for nuts in 1929 in Texas, Oklahoma, and Arkansas, was 243,000 acres—more than double the average acreage of the preceding five years, and 30 per cent greater than that of 1928. The yield per acre for this area, however, was the lowest since 1924, and the production barely equalled that of 1928. Much of the 1929 crop was immature and damaged by weather, so that a relatively large proportion will probably be crushed for oil. If this is done, the carry-over into 1930 will be negligible compared with a carry-over last year of perhaps 10 per cent of the 1928 crop, thus improving the market position of the 1930 crop.

PECANS

The outlook is for a material increase in pecan production during the next decade. There has been heavy planting of trees of improved varieties during the last 10 years, and a large proportion of the trees of such varieties, over 10 years of age, have not come into full production. A recent survey indicates that, of an estimated total of 8,000,000 trees of improved varieties, 65 per cent, or about 5,000,000 trees, were planted during the last 10 years. Plantings during the last 5 years constitute about 40 per cent of the total number of trees of improved varieties. About two-thirds of these improved trees under 10 years of age are in Georgia, Alabama, Florida, South Carolina, and North Carolina (States listed in order of importance). These States have about 5,500,000 or 70 per cent of the total trees of improved varieties. There has also been considerable top working of seedling trees to improved varieties. Of a total of approximately 10,500,000 forest and cultivated seedling trees, 26 per cent are of nonbearing age.

Revised estimates place the total production in 1928 at 59,825,000 pounds, of which 16,988,000 pounds are improved and 42,837,000 pounds are seedling nuts. Production in 1929 is estimated at 7,428,000 pounds of improved and 30,579,000 pounds of seedlings, or a total of 38,006,000 pounds. The average yearly total production in 1925-1929 is estimated at 49,710,000 pounds, of which 11,681,000 pounds are improved and 38,029,000 pounds are seedlings. A large proportion of the seedling nuts are shelled and used by confectioners and bakers.

The extent to which the indicated increase in bearing trees will be realized and the effect on total production is problematical, but this increase in production probably will not be so large as the rapid expansion in pecan plantings in the last few years would indicate. Early optimism regarding the yields of pecans that may be expected, has been tempered by the hazards incident to the production of the crop. There has been some improvement in cultural practices, in the control of insect pests and fungous diseases, and in shift toward the better commercial varieties, but there is still much to be learned.

Some individual growers have obtained profitable average yields, but there are many who have not been so successful. A study of the yields obtained

in 1928 from 75 representative orchards 15 to 19 years of age selected at random in commercial-producing areas east of the Mississippi River, showed an average of 145 pounds per acre. Thirty-two of these orchards having 72 per cent of the entire acreage had a yield of 160 pounds or less per acre; 22 orchards having 21 per cent of the entire acreage had a yield of from 161 pounds to 360 pounds per acre; while 21 orchards having only 7 per cent of the entire acreage had a yield of over 360 pounds per acre. The average per orchard was 103 acres for the first group, 43 acres for the second, and 14 acres for the third.

Another phase of the 1928 survey covering 920,000 trees of improved varieties, 10 years old and over, indicated a yield of approximately 6 pounds per tree. On a basis of 17 trees per acre, a yield of approximately 100 pounds per acre would be indicated in a year considerably above average in production. However, although all these trees were over 10 years of age, 82 per cent were under 20 years and probably had not reached full production.

Growers who contemplate new plantings should exercise care in selecting suitable varieties and locations in order to minimize the risks incident to such a long-time investment. Growers in most sections should be in a position to finance the development for a period of at least 10 years before expecting production of any consequence.

From the marketing standpoint it appears that there is room for considerable expansion before the potential demand is satisfied. A recent marketing survey indicates that probably less than one-half of the retail grocery stores in the United States carried unshelled pecans at any time during the 1928 marketing season. For the 5-year period, 1924-1928, inclusive, the total per capita supply of pecans in the United States on an unshelled basis has averaged around 0.41 pound, compared with 0.73 pound for almonds and 1.09 pounds for English walnuts. Pecans reaching the consumer in the shell have probably averaged less than one-sixth of a pound. Probably 80 per cent of the annual retail sales of unshelled pecans are made during the period from the arrival of the new crop in November to the end of December.

There has been a slight downward trend in prices of improved pecans during the past five years and some further reduction can be expected as production increases. In addition, a considerable increase in the production of English walnuts is expected. Of a total of 127,480 acres in California 31 per cent is classified as of nonbearing age and of 6,000 acres in Oregon more than 50 per cent is of nonbearing age. On the other hand, there is no indicated increase in the production of almonds during the next few years.

Pecan production is confined to North America and the foreign trade is now relatively unimportant. In recent years annual imports of seedling pecans from Mexico have averaged less than 1,000,000 pounds. Objections of the trade to these imports have been due not so much to the quantity imported as to the low average quality of these nuts and their effect on consumption.

Because of competition from cheap European walnuts, filberts, and almonds, it is unlikely that any significant foreign demand could be developed at the present prices.

CLOVER AND ALFALFA SEED

A larger surplus of domestic red-clover and alsike-clover seed than in recent years is expected after the sowing requirements this spring have been met. The relatively high prices and lack of a heavy surplus of alfalfa seed indicate that the present acreage of this crop, particularly in northern-producing districts, should be maintained. On the other hand, continued low prices of sweetclover, carry-over of old seed, and lack of evidence of an increased demand suggest that a reduction in the acreage of this crop for seed be made this year.

Growers should not be unduly influenced by prevailing low prices for red-clover seed in determining the acreage they will cut for seed next fall because higher prices at that time could normally be expected. During the past 10 years there have been seven small crops of red-clover seed and conditions resulting in the large production of 1929 are not likely to be repeated this year. In recent years there has been a pronounced preference of farmers for domestic seed, which makes competition from relatively cheap imported seed of less significance than in the past. Therefore it would seem highly desirable to forestall, if possible, a recurrence of shortages in supplies of domestic red clover, such as have been noted frequently during the last decade.

One of the largest red-clover seed crops on record was harvested in 1929 because of a marked increase in acreage in most of the principal producing

States. Yield per acre was about average. Total production of red and alsike clover seed was about 129,420,000 pounds, compared with 57,660,000 in 1928 and 68,439,000 pounds, the average annual production for the preceding five years (1923-1927). Imports of red-clover seed have been much below normal and for the fiscal year ended June 30, 1929, amounted to 7,547,000 pounds, compared with average annual imports of about 11,000,000 pounds. Prevailing wholesale prices for red-clover seed, at the lowest level since 1921, are lower than last year by about \$11.50 per 100 pounds (35 per cent) and are lower than the average at a corresponding date for the past five years (1924-1928) by about \$10.50 (33 per cent). Growers may well reserve an extra year's supply from the present crop, and farmers who are required to buy seed may find it profitable to buy two years' requirements at prevailing low prices.

The 1929 alsike-clover seed crop was nearly twice as large as the 1928 crop, which was the smallest in seven years or more. Imports for the last fiscal year ended June 30, totaling 4,797,900 pounds, were about 35 per cent below the average of the year before and 45 per cent below the average for the preceding five years. Imports since July have been larger than last year but smaller than two years ago and than the average for the period July 1-January 15. Prevailing prices are the lowest since 1924 and average about \$13.50 (39 per cent) lower than a year ago and \$6 (22 per cent) below the 5-year average.

Although the 1929 crop of sweetclover seed was only slightly larger than the 1928 crop, growers are again cautioned not to increase their acreage. Production for a number of years has been running ahead of consumption, resulting repeatedly in large carry-overs and low returns to growers. Prevailing wholesale prices, the lowest on record, are nearly 10 per cent below last year, and 35 per cent below the average for the past five years. Doubtless low prices to growers for three consecutive crops will discourage many from harvesting a seed crop this year unless storms and early frosts should greatly reduce yields in the heaviest producing districts and raise prices sharply. Since July 1 imports have been unusually small—much below the average—and are expected to continue small for the first half of this year, or longer.

Alfalfa-seed production in 1929 was increased about one-fourth or one-third over the relatively small crop of 1928, but most of it will be needed to meet the spring and fall seeding requirements. On the other hand, carry-over is considerably smaller than last year although the fall demand was generally disappointing. Because of unfavorable climatic conditions last fall, much of the acreage intended to be sown at that time will undoubtedly be sown to alfalfa this spring or next fall, and thus offset in part or entirely a possible curtailment in the demand for alfalfa seed because of relatively low clover-seed prices. Imports (1,146,400 pounds) for the past fiscal year were larger than last year, but were about one-sixth the average for the preceding five years (1923-27). Wholesale prices are about \$2 per 100 pounds (8 per cent) lower than a year ago, but \$3.30 (16 per cent) higher than the average for the preceding five years.

TOBACCO

The outlook for cigar types continues favorable, although further increases in acreage do not appear to be advisable except in Havana Seed and possibly New England shade-grown. Increases in acreage seem justified in Virginia fire-cured and Maryland, as stocks are relatively low and demand is good. Acreage about the same as last year is recommended for Henderson stemming, Green River, and Virginia sun-cured, whereas decreased acreage is recommended for fine-cured, Burley, One-Sucker, and Kentucky and Tennessee fire-cured of types 22 and 23.

Increased consumption of cigarettes in this and foreign countries has resulted in an increasing demand for fine-cured Burley and Maryland tobacco. In the case of Burley, this increase is partly offset by a decreased demand for chewing and smoking tobacco. Demand for cigar tobacco has not materially changed in recent years. Demand for most other types has declined for several years and some further declines appear probable. Demand for tobacco appears not to be materially affected by changing business conditions.

FLUE-CURED TOBACCO, TYPES 11, 12, 13, AND 14

The present outlook for flue-cured tobacco is only fair. Demand is expected to maintain the average rate of growth of recent years, but the supply may

increase more than enough to offset this growth. Domestic consumption and exports of flue-cured tobacco have increased rapidly during recent years. Cigarette consumption has maintained an increase of approximately 10 per cent per year. Since 1925, approximately one-half of this increase has been reflected in the increased consumption of flue-cured tobacco. Domestic consumption of flue-cured tobacco for the year ended June 30, 1929, is estimated at 302,000,000 pounds compared with 288,000,000 for the year ended June 30, 1928, and 265,000,000 for the previous year.

Exports of flue-cured tobacco also have increased rapidly during recent years. For the year ended June 30, 1929, they amounted to 414,000,000 pounds compared with 329,000,000 for the year ended June 30, 1928, and 289,000,000 for the previous year. Exports for the five months, July to November, 1929, were slightly smaller than during the corresponding months of the previous year, but exports to the most important importing countries, except China, have materially increased. Exports to China were exceptionally heavy during the first part of the 1928 marketing season, because of anticipated increases in import and excise duties, and were lighter than usual during the remainder of the year. The outlook for exports to China, however, has been made uncertain by the recent drastic slump in Chinese exchange. On the other hand, the production of tobacco similar to our flue-cured has received a severe setback in British colonies, and the threat of important competition from that source, mentioned in former outlook reports, has been temporarily abated. Present indications are that the total exports this season will compare favorably with those of last season.

As a result of the increasing foreign and domestic consumption, it is reasonable to expect that disappearance during the year ending July 1, 1930, will total close to 750,000,000 pounds compared with 716,000,000 pounds the previous year, in which case the stocks on hand in this country on that date will be approximately 600,000,000 pounds compared with 590,000,000 pounds on July 1, 1929.

The acreage planted in 1930 will probably show an increase. Acreages of type 11 grown in central and north-central North Carolina and southern Virginia, and type 12 grown in eastern North Carolina, will probably be maintained or slightly increased over that of 1929. Acreages of type 13 grown in South Carolina and southeastern North Carolina and type 14 grown in Georgia and Florida will probably be materially increased over those of 1929. An increase of 10 per cent for the entire flue-cured area would result in approximately 1,250,000 acres, which, with yields equal to the average of the last five years, would produce approximately 840,000,000 pounds. This, added to a probable carry-over of 600,000,000 pounds, would result in a total supply of 1,440,000,000 pounds, or nearly 100,000,000 pounds greater than the supply of the present season. A total supply in excess of 1,400,000,000 pounds would probably result in prices less favorable than those of the 1928 and 1929 seasons, unless a crop of exceptional quality is produced. Prices above 20 cents a pound are not likely to be obtained for the 1930 crop unless production is below that of 1929.

VIRGINIA FIRE-CURED, TYPE 21

Growers of Virginia dark fire-cured tobacco apparently will occupy a favorable situation in 1930. Stocks on October 1, 1930, are expected to be the smallest since reports were first issued in 1912. Exports of this type have gradually declined, although the total for 1929 will probably exceed that of 1928. Domestic consumption has increased somewhat. Favorable prices appear probable for the 1930 crop, provided the acreage increase does not exceed 15 per cent. Expansion should be restricted to soils suitable for producing high-grade tobacco. In analyzing the prices received for the 1928 crop growers should not overlook the fact that the quality was unusually good.

CLARKSVILLE AND HOPKINSVILLE, TYPE 22, AND PADUCAH, TYPE 23

The outlook for western Kentucky and Tennessee fire-cured tobacco is unfavorable, and a reduction in acreage is recommended. The production of these types gradually diminished from 1919 to 1927, the production in the latter year being 81,000,000 pounds compared with 234,000,000 pounds in 1919. Because of decreasing foreign demand prices declined during this period, and returns to growers were unusually low in 1925 and 1926. The small crop of 1927, 81,000,000 pounds, sold at higher prices, and production increased to

104,000,000 pounds in 1928 and to 139,000,000 pounds in 1929. The foreign production of tobacco which competes with the lower grades of American fire-cured types increased markedly from 1919 to 1925 and has been maintained at about the 1925 level.

Exports of these types have continued to decline, but we may now be near the low point, and the exports in 1930 may slightly exceed those of 1929. But this increase, if it occurs, is not likely to be great enough to offset the larger crop of the present season, and stocks are expected to be materially larger on October 1, 1930, than a year earlier.

Under these conditions a crop as large as that of 1929 and of average quality would result in lower prices. Prices comparable with those of 1927 and 1928 are not likely to be received unless the acreage is reduced as much as 10 per cent. Growers are again advised to give more attention to the growing of high-grade tobacco and properly curing their crop.

HENDERSON STEMMING, TYPE 24

The outlook for Henderson stemming tobacco is fairly favorable, provided acreage is not increased. The disappearance for the year ended October 1, 1929, is larger than the total supply of the present season, but the general trend of disappearance of this type is downward. In view of the depletion of old stocks production equal to that of 1929 would probably result in prices about the same as those now being paid.

BURLEY, TYPE 31

Burley prices are likely to be lower in 1930 than in 1929 if the present acreage is maintained. Because of low production there has been, in recent years, a downward trend in stocks of old leaf, resulting in improved prices to growers. This general movement culminated in 1928 when stocks reached the lowest level in six years and prices reached the highest point since 1919. The heavy production of 1929, which exceeds by 15,000,000 to 20,000,000 pounds the normal annual consumption of Burley tobacco, will have the effect of increasing the carry-over of October 1, and its effect in lowering prices is already noticeable.

In past years there has been a marked tendency for production, stocks, and prices to move in cycles, and the year 1929 appears to be on the down swing of a new price cycle. Under similar conditions in former years farmers have continued to increase acreage in spite of decreasing prices until the average price has fallen well below 20 cents per pound, with the result that stocks have become top-heavy at about the same time production has reached its highest point, resulting in disastrously low prices. This was the situation in 1926 when prices dropped to 13.1 cents per pound from 19 cents the previous year. In the past growers have delayed adjustment of their production program until after the year of low prices instead of looking ahead and forestalling the arrival of low prices. It is apparent that unless Burley growers adjust their production to normal consumption requirements history will repeat itself and the next two or three years are likely to witness expanding production, increasing carry-over, and declining prices.

It is important that Burley growers keep in mind the following facts: Acreage in 1929 was 24 per cent greater than in 1928. Because of low yields, however, production was only 16 per cent greater, or about 314,000,000 pounds, compared with 270,000,000 pounds in 1928, and, as a result, 1929 prices are about 6 cents a pound lower than those of 1928. Had yields been equal to the average for the past five years, production would have been about 343,000,000 pounds, and the decline in prices would have been still greater.

Low yields and low stocks ameliorated the effects of overplanting in 1929. In 1930 not only are stocks on October 1 expected to be 15,000,000 to 20,000,000 pounds higher than on last October 1, but the average yield per acre is likely to be much higher. The danger in the present outlook, therefore, is that with the same acreage in 1930 as was harvested in 1929 the total supply next fall will be fully 40,000,000 pounds in excess of the present supply, resulting in further, and possibly greater, declines in price. Considering the probable increase in stocks, an acreage 10 to 15 per cent smaller than that of 1929 with average yields would probably result in a total supply approximately equal to that of the present season.

MARYLAND, TYPE 32

The outlook for Maryland United States, type 32, is favorable. Demand for this type appears to be increasing, and good prices have been received in recent years. Present stocks are relatively low and an increase in acreage from 10 to 15 per cent appears to be justified.

ONE-SUCKER, TYPE 35

The outlook for One-Sucker is not favorable. Production has increased during the last two years, as a result it is expected that stocks on October 1, 1930, will be larger than those of October 1, 1929. The trend of consumption of this type is downward, and will probably continue downward. A gradually decreasing scale of production is therefore needed to avoid unprofitable prices.

GREEN RIVER, TYPE 36

No increase in acreage of Green River appears desirable in 1930. Although at present the export demand appears somewhat improved over that of a year ago, this is probably more than offset by the decreasing domestic requirements for dark air-cured types. Low production in 1927 and 1928 reduced old stocks, but the 1929 crop appears to be fully equal to requirements. An increase will result in lower prices to growers unless a crop of exceptional quality is produced.

VIRGINIA SUN-CURED, TYPE 37

Although the prices being paid for this type of tobacco are higher than for the crop of 1928, the increase is due to the higher quality obtained in 1929, and does not reflect a stronger demand. Disappearance for the year ended October 1, 1929, was the smallest yet recorded, and in line with the downward consumption of chewing types in general, demand for this type will probably continue to decline. If acreage is increased in 1930, lower prices are likely to result.

CIGAR TYPES

The total supply of cigar tobacco on October 1, 1929, was 1 per cent less than a year before. The old crops have passed almost entirely into manufacturers' hands. The higher prices generally received by growers for the 1929 crop have been, in a large measure, due to the smaller proportion of stemming grades, rather than to a marked improvement in demand. Abandonment due to hail damage has reduced the crop and contributed to the improved price situation. Withdrawals of cigars during the first 11 months of 1929 were 1 per cent greater than during the corresponding period of 1928. Consumption of 5-cent cigars showed further increases, but consumption of higher-priced cigars continued to decline.

PENNSYLVANIA SEEDLEAF, TYPE 41

The outlook for this type is favorable, provided the acreage is not increased. The yield per acre in 1929 was the lowest since 1913. An average yield on acreage equal to that of 1929 would result in a crop larger than the consumption during either 1928 or 1929. If, however, the present rate of increase in the consumption of 5-cent cigars continues, such a crop with average quality would probably result in prices comparable with those of 1928.

MIAMI VALLEY, TYPES 42, 43, AND 44

The outlook for these types appears favorable, provided the acreage is not increased. Consumption was greater for the year ended October 1, 1929, than during the previous year and has exceeded production during five of the last six years. The acreage in 1929 was 16 per cent larger than in 1928. Although the yield per acre was unusually low last year, the crop was about equal in size to the average of the last five years. An acreage the coming season equal to that of 1929 with average yields would result in a crop smaller than the consumption during either 1928 or 1929. Stocks on October 1 last were the lowest on record, and the indications are that the present acreage may safely be maintained.

GEORGIA AND FLORIDA SUN GROWN, TYPE 45

Farm prices for this type have not changed materially during the last three years. Most of this tobacco is contracted for before it is planted. No reason is apparent for any marked change in the acreage.

CONNECTICUT VALLEY BROADLEAF, TYPE 51

The outlook for this type is favorable for an acreage about the same as that planted in 1929. However, with a normal season, repetition of the 1929 prices is not to be expected in 1930. The high prices realized by growers in 1929 were due partly to the low production caused by losses from hail and to the small proportion of stemming grades. The consumption shows a marked downward trend but exceeded production slightly last year. Stocks on October 1 next will probably be the smallest in recent years. Because of the shortage of high-grade binders, good quality Broadleaf will probably be in strong demand next season.

CONNECTICUT VALLEY HAVANA SEED, TYPE 52

The outlook for this type is favorable provided growers avoid a large increase in acreage such as might reasonably be expected to follow the high prices of 1929. The 1929 prices were influenced largely by the small proportion going into stemming grades. This situation is unlikely to be repeated in 1930. The annual consumption of this type shows an upward trend and has exceeded production during each of the last four years with the result that stocks are the lowest in recent years. An average yield on an average equal to that of 1929 would result in a crop smaller than the average consumption during the last six years and should result in profitable prices to growers. The market for high-grade binders is expected to be good.

NEW YORK AND PENNSYLVANIA HAVANA SEED, TYPE 53

The outlook for this type is favorable. In view of the decreasing stocks of binder tobacco, prices are not expected to be lower than in 1929, unless a material increase is made in the production of this or related types.

WISCONSIN, TYPES 54 AND 55

The outlook for these types is favorable for a crop of about the same size as that produced in 1929. Indications are that the supply of good binder tobacco will be small at the beginning of the next marketing season. Stemming tobacco is at present in good demand because of the small proportion of the 1929 crop going into grades used for stemming purposes. Since this unusual condition is unlikely to recur next fall and winter, the demand for stemming tobacco may be less favorable than at present.

CONNECTICUT VALLEY SHADE GROWN, TYPE 61

The acreage of this type has expanded rapidly since 1925. Although the 1929 crop exceeded consumption during the year ended October 1, 1929, it seems to be in good demand at prices slightly higher than those of a year ago for the better grades. A further increase in acreage seems likely to occur and a moderate increase is probably justified by demand conditions.

GEORGIA-FLORIDA SHADE GROWN, TYPE 62

A further slight increase in the acreage of this type seems to be justified if it can be grown profitably at present prices. It appears to be finding favor among manufacturers and there is no reason to anticipate any slackening of demand.

SUGAR

World sugar production probably will continue large and prices relatively low but apparently the tendency to increase production has been checked and some slight improvement in prices is in prospect. World production in the current season (1929-30) may be slightly less than that of the past season, but any decrease will be partially offset by the larger stocks at the beginning of the season. The prospect for reduction is in cane-sugar production. The world beet-sugar crop appears to be about equal to that of a year ago. According to present prospects Cuba, Java, and India have smaller crops.

Reports to date indicate that the world raw-sugar production for the present season may be about 3 per cent below the record crop of last season but still 4 per cent above the 1927-28 crop. The record of stocks is not complete but available data indicate an increase not quite equal to the prospective decrease in production. In the meantime, world consumption has continued to increase. World consumption for last season has been estimated at about 30,000,000 short tons as compared with over 28,000,000 in the previous season. This increase in consumption was partly due to lower prices.

World expansion in the production of both cane and beet sugar appears to have been checked temporarily at least. European beet acreage increased rapidly after the World War, reaching a peak in 1928. The area outside of Russia in 1928 was more than 20 per cent greater than before the war. Russia has recovered its average pre-war area in sugar beets. The area of beets now being harvested in Europe is slightly less than that of 1928. This reduction may prove to be only temporary or it may mark a check in the European expansion of beet-sugar production.

The outturn of the Cuban crop is still somewhat uncertain but a reduction is expected on account of deficiency in rainfall and curtailment of planting. The several measures which have been taken by the Cuban Government to hold production in check probably have restricted new planting, which will for a time check Cuban expansion in production and may even curtail it temporarily.

Acreage devoted to sugarcane in Java has not shown any noticeable change in the last few years. The plantings of the new high-yielding cane have gradually increased, and it is estimated that about 90 per cent of the total acreage is now devoted to this variety, but the Java crop is estimated to be somewhat less than the record crop of last season. The crop of British India is also somewhat less than last year.

It appears, therefore, that the tendency to increase foreign production of sugar has been checked temporarily at least, and that this, together with increasing demand, will, under favorable economic conditions, tend to improve the market for the sugar producers of the United States.

Porto Rico has practically recovered from the hurricane and production in Hawaii and the Philippines continues on about the same level as last year.

HONEY

In most sections of the country bees are supplied with ample stores of honey for the winter, and prospects are for lighter winter loss than usual. Supplies of honey from the 1929 crop are light in all sections except portions of the clover belt and the Southeast, and little carryover into the 1930 season is anticipated. The January outlook, based upon the conditions of bees and honey plants and the amount of moisture in the ground, is for a honey flow in 1930 fully equal to the average of recent years. Demand for honey is increasing, partly because of greater publicity by manufacturers of food products in which or with which honey is used, as well as by honey packers.

The 1929 crop is well cleaned up in California, where recent rainfall has broken a serious drought condition, and where the outlook is for a fairly good crop if average moisture conditions prevail during the next few months. In the Intermountain States, following a short crop in 1929, plant prospects suggest a larger honey flow next season. Throughout the clover belt, as a whole, apparently a good crop can be expected if there is no serious winter killing. Honey prospects in the Southeast and the Southwest are normal and are better than they were a year ago.

Compared with a year ago, prices of extracted honey in January, 1930, are higher in California, about the same in the Mountain States and through the clover belt, and slightly lower over much of the South.

Total exports for the 12-month period ended November 30, 1929, were slightly less than 10,000,000 pounds, or more than 10 per cent under the total for the preceding 12 months. It is believed that the decrease in shipments was primarily due to the higher prices asked for the honey earlier in the season. The recently enacted law, effective December 31, 1929, raising the import duty on honey going into Germany from 4½ cents per pound net to 7 cents per pound gross, is likely to curtail shipments to Germany appreciably, as is the relatively large 1929 German crop of honey. Exports to other countries were well maintained during the past year.

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THE AGRICULTURAL OUTLOOK FOR 1931

Prepared by the Staff of the Bureau of Agricultural Economics

Assisted by Representatives of the Agricultural Colleges and Extension Services
and the Federal Farm Board

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GENERAL AGRICULTURAL OUTLOOK

Farmers may reasonably expect somewhat lower production costs, a possible tendency toward improvement in market demand, and a greater degree of stability in general commodity prices during 1931. The situation at present, however, is clouded by an unusual combination of circumstances, chief among these being the general business depression, the large supplies of wheat, cotton, and certain livestock products, the disturbed conditions in various producing areas resulting from the drought, unusually severe import restrictions imposed by foreign countries against agricultural products, and the maladjustment of price relationships accompanying the recent world-wide decline in all commodity prices.

The drought in 1930 was the most severe and widespread in 29 years. It reduced the production of principal crops about 5.5 per cent below the average of the preceding 10 years. For many of the States affected, the reduction was much more severe than indicated by the reduction in the percentage of the total output. Not only was the gross income from crops reduced greatly in many of the central States but the cost of maintenance of livestock was materially increased and the effects of this drought upon livestock production will continue for some time.

Although some States suffered severely from the drought, farmers in all States suffered from the world-wide business depression and the decline in the general commodity price level. The effect of the business depression was to curtail the consuming demand for fiber crops and for various food products, and to depress disproportionately the whole level of agricultural prices. Under normal conditions the 5 per cent reduction in crops might have resulted

in an increase in value, but on the contrary, measured by December 1 prices, the 5 per cent smaller crop of 1930 had an aggregate value 27 per cent less than that of 1929. The total value of livestock production also declined, in part on account of smaller marketings of hogs but in the main from the reduction in prices. The inventory value of livestock on farms at the end of the year was about 25 per cent less than at the beginning of the year. The general index of prices received by farmers for their products dropped from 134 per cent of pre-war average in January, 1930, to 97 per cent as of December 15, 1930. The gross income from agricultural production in 1930 is apparently less than that of 1929 by about \$2,500,000,000, or 20 per cent.

The principal agricultural regions all enter the 1931 season from this background of difficulties as cited. The problems are intensified in the two great cash-crop regions—the Wheat Belt and the Cotton Belt. The position of both these crops is handicapped by large world supplies and by the general fall in all commodity prices; cotton has been particularly affected by the slump in industrial demand.

On the other hand, the livestock industries have such advantage as goes with relatively cheap grain. Wages of farm labor are the lowest in a decade. Fertilizer prices have declined. The condition of farm equipment and of the whole producing plant is fairly good. In general, agriculture stands to gain by the gradual stabilizing of business and prices.

WHEAT

The present very low level of wheat prices has brought into operation forces tending to cause an improvement, but despite this, another year of low wheat prices is in prospect for 1931. For several years, world production has increased more rapidly than consumption and burdensome stocks have accumulated. The world carry-over on July 1, 1931, will again be abnormally large. At present there is no indication that there will be any material change in the world acreage of wheat to be harvested in 1931, and thus far weather conditions have been generally favorable for the fall-sown crop. It is too early to forecast yields, but if yields approach the average, the new crop, plus the very large carry-over, would again result in burdensome supplies. Prices in the United States now average in the vicinity of 30 to 35 cents per bushel above an export parity. If prices in the United States are on a normal export basis next summer, it would mean that world prices would have to rise about 30 to 35 cents per bushel in order for United States prices to remain at their present levels. Looking further ahead, substantial adjustments may be expected through forced contraction of high-cost acreage, through checking the expansion in low-cost acreage, through increased purchasing power, and through modification of import and milling restrictions which are now tending to reduce consumption. A better balance between production and consumption is likely eventually to be reached at price levels that will average above those now prevailing in world markets, but will be lower than have prevailed during most of the last 10 years. Any surplus of wheat that the United States may have for export will continue to face severe competition from other low-cost producing countries.

The general downward trend in wheat prices during the last four years and the recent extremely low prices are the result of factors which have been affecting the situation for several years, reinforced by additional factors which have more recently come into operation. The most important factor has been the expansion of world wheat acreage and production, notably in exporting countries, at a rate more rapid than the rate of increase in world consumption. This has resulted in an increase of world stocks and carry-overs to burdensome proportions.

World wheat acreage has been expanding rapidly since 1924. In that year the total wheat acreage, outside of Russia and China, is estimated to have been 224,000,000 acres; by 1930 it had reached 250,000,000 acres, an increase of about 12 per cent. In addition, Russia's acreage has been increasing rapidly, having risen from 52,700,000 acres in 1924 to 84,100,000 acres in 1930, the present area being nearly 10,000,000 acres in excess of the pre-war average for the years 1909-1913. The increase of nearly 60 per cent, or more than 31,000,000 acres since 1924, was over 5,000,000 acres more than the increase in the rest of the world combined during this period. Furthermore, average yields per acre in the world, outside of Russia and China, especially during 1927 and 1928, were considerably higher than during the early years after the World War.

Although yields were low in 1929, consumption was reduced, so that the world carry-over remained considerably above normal levels on July 1, 1930.

The increased acreage of recent years has apparently been due in part to the encouragement of high prices received for the crops of 1924 and 1925 and in part to the lowering of costs of production and the increasing of acreages that can be grown by farmers in the subhumid areas through the use of improved machinery. The extent to which lower production costs and the lower general price level may result in a more-or-less permanently lower level of wheat prices is uncertain. Only to the extent that there is a long-run tendency for wheat production costs to be reduced more rapidly than the cost of producing other commodities can wheat be expected permanently to fall in price as compared with other commodities. Declines in wheat prices in line with declines in the general price level, however, affect the wheat grower in so far as he may have incurred fixed expenses, such as debts and interest charges, at higher price levels.

Another important factor which affected the situation last year was the raising of tariffs in several of the continental European countries and the promulgation of milling restrictions. These measures have tended not only to reduce the imports into these countries, but to prevent an accumulation of stocks and to encourage increased acreage. During 1930 Germany, France, and Italy greatly increased their tariffs on wheat and some countries are fixing the quantities of foreign wheats which can be used for mixing. So long as these barriers are maintained they will tend to restrict the outlet for wheat from other countries.

More recent declines in world wheat prices have been accentuated by several factors, such as material increases in later estimates of the 1930 crop in a number of countries and the pressing of Russian wheat upon an export market already abundantly supplied. These factors have overbalanced the influence of greatly increased use of wheat in the United States for feed and the restriction of United States exports by price support here. As a result world wheat prices are now at extremely low levels. It is doubtful if wheat has ever been so cheap in terms of commodities in general as it has been during recent months. Although it can not be confidently predicted that the bottom has been reached, it seems improbable that world wheat prices can go much lower; for prices at Liverpool, Winnipeg, Buenos Aires, and other important markets are now so low as to return to growers in many wheat-producing regions little more than threshing and shipping costs.

The world carry-over (accounted for as of July 1, 1930, of 537,000,000 bushels, the 1930 world wheat crop, excluding Russia and China, of about 3,777,000,000 bushels, and about 100,000,000 bushels estimated as the probable total of shipments from Russia, amount to 4,414,000,000 bushels. This is an increase of 320,000,000 bushels over the preceding year. World consumption during 1930-31 will be larger than in 1929-30. The greatest part of this increase will be due to increased feeding of wheat in the United States, but in addition, wheat feeding has probably increased slightly in Canada and a few other countries, and some increase in the use of wheat for food by non-European importers is also probable. These point to an increase in the disappearance of wheat in the world outside Russia and China about equal to the increase of supplies.

Supplies available for export and carry-over as of January 1, 1931, in the four principal exporting countries were from 90,000,000 to 140,000,000 bushels larger than they were a year earlier. In addition, it is likely that there will be material shipments from Russia during the next six months, so that supplies available to fill importers' requirements will exceed those of the corresponding period last year by about 150,000,000 bushels or more. Altogether, indications are that the world carry-over, outside Russia and China, as of July 1, 1931, will again be abnormally large and perhaps not materially different from that of July 1, 1930.

There is at present no reason to expect that total world production for 1931 will be greatly different from that of 1930. Although the increased acreage for the world as a whole, outside Russia and China, may have been checked, there is no indication of an appreciable decrease. Moreover, there may be some further increase in the Russian acreage for 1931. On an acreage about as large as that of 1930, average yields would result in a world crop for 1931 about equal to that of 1930, and total supplies available for 1931-32 would be about the same as those for 1930-31.

On the demand side, some improvement may be expected through improving world business conditions, and growth in population, but this will probably be counterbalanced, in part at least, by a decrease in the quantity of wheat used for feed. It is not to be expected that the United States will have another short corn crop in 1931, with its resulting heavy feeding of wheat. Consequently, no marked increase in wheat consumption is in prospect for next season. Under the present circumstances no prediction as to the precise level of prices during the coming year can be safely ventured, but present indications are that it will again be low.

Wheat prices in the United States since November have been maintained well above export parity, largely through operations of the Grain Stabilization Corporation. As a result, exports of wheat and flour are being restricted but this is being more than offset by the heavy feeding of wheat which can be expected to continue into next fall. The carry-over on July 1 in the United States is likely to be somewhat lower than last year, but yet abnormally heavy, and it will be more heavily concentrated in visible positions. As the crop of the United States usually provides a surplus for export it is to be expected that, unless yields should be exceptionally low, the new crop, added to the heavy carry-over, will result in a large exportable surplus next summer. Since prices in the United States now average in the vicinity of 30 to 35 cents per bushel above an export parity, placing them upon an export basis would mean that world prices would have to rise about 30 to 35 cents per bushel if our prices are not to fall below their present levels. As indications point to a continuation of burdensome world supplies, wheat prices in the United States next summer may be below the levels which prevailed last summer.

The area seeded to winter wheat in the United States is estimated at 42,042,000 acres, a decrease of 1.1 per cent from that seeded in the fall of 1929. Unusually favorable conditions for fall sowings, the need of wheat for pasture, the cheapness of seed wheat, and low prices for alternative crops, prevented the greater reduction which low wheat prices tended to bring about. Reductions of 12 per cent in Nebraska and Colorado, 6 per cent in Oklahoma, and 1 per cent in Kansas, brought about a 3.7 per cent reduction in the hard winter wheat States in spite of a 3 per cent increase in Texas. There was a slight increase from the low levels of 1929 in the group of States producing chiefly soft red winter wheat, owing in part to increased needs for pasture and for wheat to feed next summer. The principal increase in sowings took place in the State of Washington where spring plantings seem likely to be correspondingly reduced.

Conditions for winter wheat to date have been generally favorable, except that deficiencies of subsoil moisture in large sections affected by the drought may make for reduced yields per acre sown. Unless adverse conditions develop between now and harvest time, another large crop of winter wheat will be produced in 1931. If yields and abandonment are equal to the average of those of the last 10 years, the acreage seeded would result in a production of approximately 542,000,000 bushels. Of this total, hard red winter wheat would comprise about 329,000,000 bushels, soft red winter about 172,000,000 bushels, and white wheat 41,000,000 bushels. This production would keep us on a level far above the domestic consumption of soft winter wheat during most recent years. In 1930 the production of hard red winter amounted to about 366,000,000 bushels and that of soft red winter to about 194,000,000 bushels.

The total area sown to spring wheat (including durum) in 1930 was nearly 1,000,000 acres less than in 1929. Much of this acreage was replaced by flax. Higher yields of wheat per acre, however, led to a production of 14,000,000 bushels more than in 1929.

The area of hard red spring wheat remained about constant and at a level which, with average yields, appears to be ample to supply our normal domestic consumption and to leave a small surplus for export from the Pacific Northwest. Because of yields slightly below average, 1930 production amounted to about 152,000,000 bushels or about 5,000,000 bushels less than would have resulted with average yields.

Most of the net decrease of the 1930 spring-wheat area was in durum, the decrease in the four principal States amounting to nearly 1,000,000 acres. This was accomplished in part by substitution of flax for durum and in part by shifting from durum to new varieties of rust-resistant hard red spring wheat. Thus far during the current season prices of durum have not been

enough below those of spring bread wheats to give much incentive for further shifting, but some further shift may be made to the rust-resistant bread wheats which would still further reduce the durum acreage. The 1930 durum acreage was sufficient to produce about a 60,000,000-bushel crop if yields were average. Such a crop is large enough to place durum prices on an export basis in ordinary years and to make the level of durum prices, as compared with other wheat prices, largely dependent upon the world durum situation.

We may expect competition from overseas durum production to be as keen next year as this year, or keener. Italy, an important market for our surplus, has increased total winter wheat acreage, and thus has probably increased durum acreage also. The chances are that yields in Italy will be as large or larger than in 1930, when they were below the average of recent years. Russia is a potential source of competition which must be watched closely. Russia sent a little durum to Italy in 1929-30 and is known to be sending some there this year. North African prospects are still uncertain, but durum production from this region appears to have little influence upon the foreign demand for durum wheat from this country. Indicated exports from the United States since July 1 have been heavier this year than last, and disappearance from sight in Minneapolis, where durum is used largely for semolina and durum flour manufacture, is slightly larger than last year. Elsewhere in the United States disappearance has been slow, leaving the balance on hand nearly equal to that of a year ago.

FLAX

Average yields of flaxseed on an acreage as large as seeded in 1930 would produce a crop about equal to domestic requirements. Any increase in acreage or better-than-average yields would tend to reduce the margin between domestic prices and world prices. The record acreage of 4,428,000 acres seeded in 1930 seems therefore to be the maximum acreage warranted by the prospective demand for flax products. When domestic requirements for flax return to the level of the 43,000,000 bushels utilized during the 1924-1928 crop seasons, a further increase in flax acreage could be made without reducing the margin between domestic prices and world prices. Although flax grown on better lands may continue to give higher returns than wheat and other small grains, lower levels may be expected than prevailed during the last few years.

The downward trend of prices of flaxseed and flaxseed products last season (1929-30) and this fall was due principally to a decrease in consumption and a very sharp increase in world production, which made supplies even more burdensome. Present indications are that the world flaxseed crop available for the 1930-31 season will exceed the previous record crop of 1927-28 when 156,770,000 bushels were harvested. The United States crop of 1930 was 23,682,000 bushels compared with 17,049,000 bushels in 1929 and an average outturn (1924-1928) of 23,816,000 bushels. The Canadian 1930 crop was about double that for 1929. A record crop of 84,408,000 bushels was produced in Argentina in 1930 compared with an average harvest of 73,400,000 bushels. If 9,000,000 bushels are required for domestic use including seed in Argentina, and 11,000,000 bushels (a carry-over proportionate to the size of the crop) remains at the end of the crop season, a surplus of about 72,000,000 bushels from the 1930-31 crop would be exported. Of the 1929 crop, 63,677,000 bushels were exported, and the 5-year average (1924-1928) of exports was 59,000,000 bushels. The 1930 Indian crop of 14,960,000 bushels was about 2,000,000 bushels greater than the 1929 outturn, but seedings this fall were reduced to 2,177,000 acres, and weather conditions have not been favorable. Trade reports indicate good harvests in many other countries, including Russia.

The 1930 United States flaxseed crop is estimated at 23,682,000 bushels. Although the acreage seeded was 4,428,000 acres, only 3,946,000 acres were harvested, as the drought resulted in heavy abandonment in parts of the Dakotas and Montana. The drought in 1930 was not quite so damaging to yield as in 1929, especially in the eastern part of the producing areas, as indicated by the average of 6 bushels per acre in 1930 compared with 5.6 bushels in 1929. Because of the much lower flaxseed prices, the large 1930 crop may not return flax growers as much money as did the 17,049,000-bushel crop last year, but the relative reduction in income was not so great as in spring wheat.

The domestic commercial supply of flaxseed available for crushing during the 1930-31 season, based upon the carry-over and crop minus seed require-

ments for the next season, is estimated to be about 26,968,000 bushels compared with 18,910,000 bushels last season and 22,758,000 bushels two seasons ago. This supply is less than our estimated annual consumption. Linseed-oil requirements may not be much different from last season when about 582,000,000 pounds moved into consuming channels, but it may be necessary to crush slightly more flaxseed because of the low oil content of the new crop. Crushings may approximate close to 32,000,000 bushels compared with the actual crushings of 31,065,000 bushels in the 1929-30 season, and average crushings for the five years, 1924-1928, of 41,000,000 bushels. Assuming an average carry-over, about 10,000,000 bushels of foreign seed may be imported into the United States to meet these requirements. In view of the large domestic crop and reduced needs, importations are likely to be small until the latter part of the season. These estimated requirements and imports will also be affected by the low prices of flaxseed and flaxseed products which may tend to increase the consumption of linseed oil or the replacement of stocks, and the short supplies of certain feed grains and hay may stimulate a relatively greater utilization of linseed meal, although the incomes of farmers, feeders, and dairymen have been markedly reduced. Although linseed-oil stocks are low, stocks of substitute drying oils, especially of chinawood oil, are very heavy.

Although building and construction activities during the 1931-32 season will probably not reach sufficiently high levels to require crushings equal to the average crushings of 41,000,000 bushels during the 5-year period, 1924-1928, crushings to a total of 35,000,000 bushels may reasonably be expected. Allowing for seed, the total domestic requirements would be about 37,000,000 bushels. Should the domestic production of flaxseed approach in quantity the domestic requirements, shipments from the producing territory in the Northwest to crushers at Buffalo or Atlantic ports might take place, in which case the price to farmers would tend toward a seaboard-less-freight basis, instead of seaboard-plus-freight basis. A production of 32,000,000 bushels would still leave a margin of 5,000,000 bushels as protection against such an occurrence. A crop in excess of 32,000,000 bushels would probably reduce the margin between domestic prices and world prices which now prevail because of the protection of the tariff of 65 cents per bushel and hauling costs. If an acreage equal to the 4,400,000 seeded in 1930 is seeded in 1931, if abandonment is average, and if a yield equal to the average of 7.6 bushels per acre is obtained, a crop of 32,000,000 bushels would be produced. In three of the last 10 years, however, yields of 9 bushels or more have been obtained. If the yield in 1931 should be as high as 9 bushels, a crop of 38,000,000 bushels would be produced.

When the present domestic business depression has run its course and industrial activity returns to average or better, the annual supply of flaxseed for domestic requirements will probably again approximate 43,000,000 bushels. At such time average yields on a harvested acreage 10 per cent higher than seeded in 1930 would produce a crop sufficiently below domestic requirements to maintain a margin of domestic above world prices.

Reduced takings of foreign seed by the United States leave relatively larger quantities for other deficit areas, principally Europe. Although low flax prices may increase market takings by Europe, no marked increase in demand is expected. Last year demand in Europe was curtailed by reduced industrial production, credit shortage, and generally lowered purchasing power. Any improvement in general business conditions would increase takings. Demand for linseed meal may be better than last season as the European corn, oats, and barley production is only about 80 per cent of last year. The European dairy industry is expected to continue the liberal feeding of concentrates despite prevailing low prices for butter.

The fact that flax prices have not fallen so far as wheat prices in the United States will encourage some additional expansion in flax acreage. The stimulus of higher gross returns from an acre of flax compared with other small grains has resulted in the flax acreage increasing from 2,700,000 acres in 1928 to 4,400,000 acres in 1930. However only 3,900,000 acres were actually harvested in 1930, owing to the large abandonment. The higher gross acre returns of flax compared with wheat will probably cause more acres to be seeded in 1931 than were harvested in 1930. If the harvested acreage is not more than 10 per cent greater than last year or 4,300,000 acres, and average yields are obtained, flax may still be relatively more profitable than wheat.

OATS

In view of the decreasing market demand for oats, resulting from the continued reduction in numbers of workstock and a more general use of barley as feed, it can not be expected that returns from oats for market in 1931, when compared with competing crops, will be more favorable than in 1930. In much of the drought area a considerable increase in the acreage of oats for hay appears advisable since clover and timothy stands were damaged by the dry weather and probably will not produce sufficient hay for farm needs in the 1931-32 season. Livestock producers in the spring-wheat area should cut sufficient oats for hay to insure ample forage for their feeding requirements, in view of the prospective small hay supplies next season and reduced demand for oats as grain.

Indications on January 1, 1931, pointed to a carry-over of oats at the close of the crop year (August 1) fully as large as the average of recent years despite the heavier domestic consumption which resulted from short summer and fall pasturage and the reduced corn crop. Supplies for the current season were about 155,000,000 bushels, or nearly 12 per cent, larger than those of the previous year with the 175,000,000 bushel increase in the crop partially offset by a 20,000,000 bushel reduction in the carry-over. The large 1930 oats crop was the result of good yields, averaging 33.7 bushels per acre, on a materially increased acreage totaling 41,598,000 acres. Good weather for maturing and harvesting was an important factor in the large yields and was largely responsible for the high quality of the crop.

Although increased quantities of oats have been fed on farms and used by feed manufacturers to supplement the short corn supplies, farm stocks January 1, 1931, were about 100,000,000 bushels (15 per cent) larger than a year ago. Market stocks were also slightly above a year ago. Although diminishing corn supplies may cause continued heavy feeding of oats during the remainder of the season, stocks appear ample to provide for prospective domestic requirements, and for a carry-over about equal to the average of recent years.

Exports for the season to date have been negligible with no prospects of any significant increase in this movement during the remainder of the season. Canada had a large oat crop this season which makes material exports to that country improbable. European oat production was nearly 20 per cent below that of 1929. Yet in spite of the large crop in the United States, our exports as given from July 1 through January 10 to have amounted to only 750,000 bushels compared with nearly 4,000,000 bushels during the corresponding period of the preceding year. Canadian exports during the last half of 1930 were heavier than for the corresponding period of 1929, Argentine exports were nearly three times as large, and Danubian exports were more than twice as large. The United States has been becoming increasingly less of an oat-exporting country during recent years.

The area harvested in the United States increased for the first time since 1925, and was nearly 1,600,000 acres larger than that of 1929. In the East North Central States, where a reduction in wheat acreage has been evident recently, the trend of oat acreage has been upward. During the present crop year the need for early-maturing feed crops as well as a spring grain for a nurse crop for grass seedings in the drought affected area will encourage a somewhat larger acreage of oats in these States. Although the trend of acreage in the West North Central States, where approximately three-fourths of the market oats are produced, has been slightly downward since 1921, extensive further reductions in this region appear improbable during the next few years.

Oats have maintained a place in the agriculture of the United States, primarily because of their value in taking a place in the rotation between corn and grass. In many areas no other crop has been found so generally satisfactory for this purpose. The place the crop occupies in rotations largely determines its acreage and no great decrease in acreage can be expected until some substitute crop is found that will satisfactorily take the place of oats in rotations, and will yield higher returns per acre as well.

BARLEY

Although there may be increased market demand for barley from July to November, 1931, there is little probability that market demand will be as large during the remainder of the crop season from November until August, 1932, as in the corresponding months in 1930-31. Until the 1931 corn crop is harvested, the use of barley will be unusually large. After that time, domestic requirements will probably be less than during the 1930-31 season, and continued active competition will probably be encountered in foreign markets. The rapid increase in barley acreage during recent years has resulted from increased use of this grain as a substitute for oats and corn in hog and cattle rations and from the increased need for feed for the increased numbers of livestock raised on farms in the Great Plains States where barley is a more certain crop than corn.

The 1930 barley crop of 325,893,000 bushels was the second largest crop ever harvested in the United States. Although the acreage was smaller than in 1929, the yield of 26.2 bushels was 1.2 bushels above average. The acreage of this crop is relatively unimportant in all of the area seriously affected by the 1930 drought, with the exception of Montana. Substitution of barley for corn as a livestock feed has and will continue to take place in the drought area on an inshipment basis. The marketing of the 1930 crop is therefore in direct competition with corn. Total supplies, including the crop and farm and market stocks on August 1, for the 1930-31 feeding season were 345,000,000 bushels compared with 329,000,000 bushels for the 1929-30 feeding season. Since exports to January 1, this season, totaled only 6,000,000 bushels, compared with 18,000,000 bushels during the corresponding period in 1929-30, about 28,000,000 bushels more were available for feeding in 1930-31. Although no data on total stocks on January 1 are available, some increased feeding has taken place and total stocks on January 1 were probably about the same as a year earlier. Somewhat heavier feeding than in 1929-30 will be necessitated for the remainder of the season by the corn shortage; consequently, the carry-over on August 1, 1931, will probably be no greater than on the same date in the two preceding years.

With a relatively small corn supply on hand on January 1 and practically no change in numbers of livestock on farms, an expansion in domestic requirements for barley is indicated until harvesting of the next corn crop begins. During this period barley will probably be substituted for corn in commercial mixed feeds to a much greater extent than usual. The bulk of the 1931 crop will be used largely in the areas where grown, but a relatively heavy inquiry for barley for late summer use can be expected from dairymen and cattle and hog feeders. Much of the expansion in hog numbers during recent years has taken place in certain areas in which barley acreages have been increasing and it seems likely that this grain will continue to supply a large part of the hog feed in those States.

Barley production in Europe in 1930 was about 9 per cent below the 1929 harvest; moreover Europe had corn and oat crops about 20 per cent below those of the preceding year and a potato crop nearly 7 per cent smaller. Total barley production in the foreign countries reported was 6.3 per cent below that of 1929. The increase of 56,000,000 bushels in the production in North American countries was more than offset by decreases of 72,000,000 bushels in Europe, outside of Russia, 31,000,000 bushels in north Africa, and 8,000,000 bushels in the Asiatic countries. In spite of the smaller European supplies of feed grains, increased competition from Danubian, Polish, and Russian barley in European markets reduced the demand for American barley, and Germany placed an increasingly high tariff on the importation of all foreign barley.

Since December 1, 1929, there has been a large increase in Russian barley exports, with the shipments from July 1 to December 31 totaling 34,355,000 bushels, but it is uncertain how long this movement will continue. It appears unlikely that the United States will again have a large foreign market for feed barley except possibly in the event of a serious feed-crop shortage in Europe.

Based on average yields and average farm prices in the North Central States, barley is computed to be a more valuable crop than oats. These two

crops have usually been considered interchangeable in most systems of farming. The area of greatest concentration for both lies within the North Central States. Closer examination, however, reveals a definite segregation of the one from the other. The area of maximum oat acreage corresponds rather closely to that of maximum corn acreage whereas the area of maximum barley acreage lies to the north of the maximum corn acreage. This geographic difference in the acreage of the two crops, evident in 1920, has become much more pronounced since that time. Relatively low prices for wheat compared with livestock prices have stimulated a reduction of wheat acreage in the older wheat-producing sections such as the valley of the Red River of the North and the eastern Corn Belt. Feed grains have taken the place of this reduced wheat acreage in these sections—barley replacing wheat in the Red River Valley of the North, and oats replacing wheat in the eastern Corn Belt. Oats in the Corn Belt are generally a supplementary feed to corn especially in a dairy ration or a growing ration. Barley in this region is a negligible quantity and is rather minor compared with oats in the dairy sections of Minnesota, Wisconsin, and Iowa. On the most fertile lands of the Corn Belt the abundance of corn and barley in proportion to hay and pasture give hogs and cattle feeding greater advantage than dairying. Corn, of course, displaces barley in districts that have a favorable climate for corn. Oats is included because of the supplementary nature of the crop from a feeding standpoint as well as from the standpoint of the entire farm organization involving the most efficient use of land, labor, power and equipment.

Primarily because of differences in the geographical locations of oats and barley, average farm prices for the two grains offer a poor criterion of the relative returns from these crops. Both crops are rather too bulky to ship very far, especially in periods of low prices such as in 1930-31. Therefore, the expansion of both crops should be limited to the expansion or needs of local livestock numbers. Some demand for early feed may warrant a slight increase of barley and oat acreage in the drought areas or in areas adjacent thereto. The low price of wheat will probably make desirable the further substitution of barley for wheat in the Northwest, and oats for wheat in the eastern Corn Belt.

CORN

If planting conditions are normal in 1931 a moderate increase in corn acreage is to be expected especially in those areas in which prices for competing crops have been unusually low. Should average yields per acre be obtained on the expected larger acreage, corn production in 1931 would be slightly larger than average and would constitute the largest crop since 1925. The numbers of livestock on farms during the 1931-32 feeding season will probably be about the same as during the present season. Some increase is to be expected in the commercial consumption of the 1931 corn crop in the United States, but foreign demand is not expected to be large unless the production of feed crops in Europe is less than average and the Argentine surplus is small. With prospects for only a slightly greater demand for corn and with much larger supplies in prospect it is probable that prices during the season beginning November, 1, 1931, will average somewhat lower than during the present season. Because of this year's short supply, some improvement in cash corn prices seems probable before the 1931 crop is available.

FEED SUPPLY FOR 1930-31 SEASON

The total supply of corn available at the beginning of the 1930-31 season (November 1) was the smallest since the 1901-02 season. It was estimated to be about 20 per cent or 537,000,000 bushels less than for the 1929-30 season and about 23 per cent or 650,000,000 bushels less than the average of the past five years. The combined supplies of oats and barley available at the beginning of this season (August 1) were about 12 per cent more than last season but the 1930 crop of grain sorghums was 14 per cent smaller than in 1929 and 32 per cent below the 5-year average. The large supply of wheat together with low prices is resulting in large quantities of wheat being fed this year and is tending to offset the shortage of corn and grain sorghum. Supplies of hay for the 1930-31 season are also less than usual being only 86 per

cent of last year and 89 per cent of the 5-year average. The mild weather so far this season has been a favorable factor in conserving the feed supply.

DISTRIBUTION OF THE CROP

The shortage of the crop in the Corn Belt is not quite so great as for the country as a whole, although yields were materially reduced along the Ohio and central Mississippi River valleys. Production in the East North Central States was about 80 per cent of that of 1929 and the crop in the West North Central States was about 83 per cent of the 1929 crop. In Wisconsin and Nebraska the crop was equal to that of 1929 and was above average, but production in all other States was smaller, the crop in Missouri being only 62 per cent, in Ohio only 69 per cent, and in Kansas only 71 per cent of 1929.

Supplies outside the Corn Belt are shortest in those districts in which the drought was most severe. In Maryland, Virginia, West Virginia, Kentucky, and Arkansas the crop of 1931 was less than half as large as last year and in Pennsylvania, Delaware, Tennessee, Mississippi, and Louisiana the crop was less than two-thirds of that of a year ago. In the New England States the crop was about equal to last year but was below average and in the Southeastern States supplies are only slightly below a year ago, and are below average. In the far Western States and Texas the crop was both above 1929 and above average.

CORN REMAINING ON FARMS JANUARY 1, 1931

The total quantity of corn harvested for grain which remained on farms on January 1 was estimated to be 21 per cent, or 300,000,000 bushels, less than a year ago and 350,000,000 bushels less than the average of the four years 1927-30. On January 1, 1931, there was still on hand about 60 per cent of the total supply at the beginning of the crop year, or practically the same proportion as was on hand on January 1, 1930, and the same as the average for the five years, 1927-31. The proportion of supplies remaining in the different areas was also about the same as a year ago. This indicates that farmers are not using their corn supply at a more rapid rate this year than usual, and, since prices of livestock and livestock products have been favorable for heavy feeding it is apparent that farmers are supplementing corn with other feeds including wheat wherever possible. Should this continue through the 1930-31 season it is not likely that an acute shortage of corn on farms will be felt except in local areas.

MARKET PROSPECTS

Some strengthening of the cash corn market appears probable before the 1931 crop is ready to be marketed. Country marketings of corn have fallen off sharply since the middle of December and light receipts are in prospect for the remainder of the season. Commercial stocks of corn are below average and this together with the prospect of light receipts is likely to cause the corn market to be unusually sensitive to receipts and result in greater price fluctuations than usual. Restricted commercial demand, low prices for other grains, and low prices of corn in foreign countries are tending to hold down corn prices in spite of small supplies. The extent to which wheat and flinty Argentine corn is likely to be substituted for domestic corn is limited, however, and if an acute shortage of market supplies should develop later in the season because of light receipts it would result in at least a temporary marked upswing of corn prices.

There has been a steady upward trend in the commercial consumption of corn during the last few years, but the high price of corn relative to substitutes during the latter part of 1930 resulted in a marked decline in consumption. Wheat and rye are being substituted to a considerable extent for corn and some Argentine corn is being used in manufacturing corn products. The low prices for sugar, flour, and other competing products are also discouraging the production of corn products this year. Should the corn crop be more nearly average in 1931, the upward trend in the commercial use of corn is likely to be continued.

OUTLOOK FOR 1931

In the Corn Belt proper there will probably be some tendency to increase the corn acreage in order to replace the reduced stocks. The southern portion

of the Corn Belt, which was seriously affected by drought, is facing the double problem of adjusting a disturbed cropping system and meeting a feed shortage. The new seedings of grass and clover in this area were either killed or greatly injured by the drought. The necessity for seeding grain in order to secure a stand of grass and clover, together with the need of early maturing feed crops and annual hay crops to meet next summer's feed shortage will tend to increase the small-grain acreage. This will prevent as much of an increase in the corn acreage in the southern part of the Corn Belt as might otherwise be expected. If the abandonment of winter wheat is greater than average throughout this area the tendency will be to increase the corn acreage.

The low price of cotton during the 1930-31 season will probably mean an increased planting of corn in Cotton Belt, particularly in those districts in which the land is well suited for corn and yields are normally such as to make it more of a competing crop. Lack of suitable storage space and marketing facilities, however, will tend to limit production in most parts of the South to local needs. The demand for corn in the Southern States during the 1931-32 season is likely to be somewhat greater than during the 1930-31 season as indications are that hog production will be expanded somewhat in this area during 1931-32.

The acreage planted to corn in the North Atlantic States has remained practically unchanged during the last four years. The trend of corn acreage in the far Western States has been upward since 1927. Since about 63 per cent of the total corn acreage is in the Corn Belt, however, even a material increase in those areas in which increased plantings are expected would result in only a moderate increase in the total acreage of corn and would result in even a smaller increase in production because of the low yields generally obtained in these areas.

Although the drought of 1930 has not yet been broken in all areas, the unusually low yields of 1930 are not likely to be repeated in 1931. Should an average yield be obtained on an acreage equal to that of 1930, a crop of about 2,825,000,000 bushels would be produced which would be considerably larger than the average crop of the last five years. Therefore, even a moderate increase in corn acreage will result in greatly increased corn supplies during 1931-32 unless yields are below average. The unusually short crop of 1930 will probably result in a very small carry-over of old corn and in early feeding of the new crop which will tend to offset somewhat the effect of the prospective larger production.

The number of hogs to be fed from the 1931 crop may be slightly less than from the 1930 crop. The numbers of horses and mules will continue to decline, but cattle numbers will probably continue to increase. No material improvement in foreign demand can be expected unless the crop of feed grains harvested in Europe in 1931, and the 1932 Argentine corn crop are below average. It is therefore likely that, with average planting and growing conditions for the 1931 crop, the price for corn during 1931-32 season will be lower both relative to the price of other grains and as compared with actual prices for the current crop.

Although the present prospects are for a larger corn acreage in 1931 than in 1930, there has been a slight downward trend in corn acreage since 1921. It is hardly to be expected that the corn acreage as a whole will continue to diminish appreciably, but there is no good reason for expecting the increase in acreage for 1931 to be maintained. In the States east of the Mississippi River the downward trend has been fairly general and may be expected to continue, because of the general decline in acreage devoted to all crops in this area. This will be offset to some extent by further increases in the western portion of the Cotton Belt and in the areas bordering the present Corn Belt on the north and west, although the increase in these latter areas are likely to be but slight.

HOGS

Slaughter supplies of hogs during the remainder of the present marketing year ending September 30, 1931, will probably be smaller than during the corresponding period of 1930, but with a weaker demand for hog products, prices of hogs for the period will probably average lower than for the same period of last year. The hog industry during the marketing year that begins October 1, 1931, is expected to be in a more favorable position than in the

current year, since indications point to slightly smaller supplies, lower feed costs, and some improvement in both foreign and domestic demand during that period.

HOG SUPPLIES

NUMBERS ON FARMS JANUARY 1, 1931

The number of hogs on farms January 1, 1931, was 52,323,000 head for the United States total, and 40,147,000 head for the North Central States. These numbers were 915,000 head, or 1.7 per cent, smaller for the United States and 69,000 head, or 0.2 per cent, larger for the North Central States than on January 1, 1930. There were decreases of 91,000 head in the North Atlantic States, 117,000 head in the South Atlantic States, 729,000 head in the South Central States, and 47,000 head in the Western States. A decrease of 289,000 head in the East North Central States was more than offset by an increase of 358,000 head in the West North Central group, which tends to reflect the feed supply situation in each of these areas.

MARKET SUPPLIES TO SEPTEMBER 30, 1931

In the nine months, January to September, 1931 (during which period most of the hogs on farms January 1 that go into the commercial supply will be marketed), slaughter will probably be slightly smaller than in the same period of 1930. Decreases in supplies from outside the Corn Belt States will more than offset the small increase in that area. In addition, it is not unlikely that a larger-than-usual percentage of brood sows and fall pigs now on farms will be carried over and finished out on new corn next fall, especially in areas in which corn production in 1930 was short. In view of this expected decrease from January to September, and with inspected slaughter for the three months, October to December, 1930, nearly 1,300,000 head smaller than during the corresponding period of 1929, total inspected slaughter for the marketing year October, 1930-September, 1931, is expected to be from 1,500,000 to 2,000,000 head smaller than for the marketing year 1929-30.

For the four months, January to April, 1931, slaughter may be somewhat larger than in 1930, since there apparently were more hogs from last year's spring pig crop still on farms on January 1 this year than last, and a fairly heavy marketing of early fall pigs may take place in late March and April as a result of the shortage in corn supplies being felt more acutely by hog producers at that time than at present. During most of this period, weights will probably continue to average above those of last winter, with the difference becoming less marked as the season advances.

The indicated reduction in the 1931 fall pig crop and the probability of early marketing of early fall pigs and a larger-than-usual carry-over of brood sows and late fall pigs into the next marketing year all point to a slaughter supply from May to September somewhat smaller than that of the corresponding period of 1930. Finish on hogs marketed during this period may be somewhat poorer than average.

MARKET SUPPLIES FROM OCTOBER 1, 1931, TO SEPTEMBER 30, 1932

Supplies during the marketing year 1931-32 will come largely from the spring and fall pig crops of 1931. The December 1, 1930, pig survey of the Department of Agriculture indicated that the number of sows to farrow in the spring of 1931 would be at least as large as in 1930 in the North Central States, and pointed to a considerable increase in other areas, especially in the South. In view of the exceptionally large average number of pigs saved per litter in the spring of 1930 it is hardly likely that as large an average will be saved in 1931. Hence, the number of pigs saved in the spring of 1931 may be somewhat smaller than in the spring of 1930.

The number of sows kept to farrow in the fall of 1931 will be influenced by the trend in hog prices, by the supplies and prices of feed during the first half of the year, and by prospects for corn and feed-grain production in 1931. Although no great change from 1930 now seems probable, a decrease rather than an increase is likely, unless indications early in the summer point to a large 1931 corn crop.

STORAGE STOCKS

Storage holdings of pork on January 1, 1931, amounting to 523,317,000 pounds, were about 16 per cent smaller than those of January 1, 1930, and 5 per cent smaller than the 5-year January 1 average. Lard stocks on January 1, amounting to 51,064,000 pounds, were the smallest for that date since 1927 and 38 per cent smaller than on January 1, 1930. The decrease in storage holdings of pork and lard under those of a year earlier is equivalent to about 800,000 hogs, and as compared with January 1, 1929, is equivalent to 1,100,000 hogs.

DOMESTIC DEMAND

Consumer demand for pork products during the marketing year 1929-30, was considerably weaker than the unusually strong demand which prevailed during 1928-29, but was not greatly different from the 6-year average, 1922-23 to 1927-28. The average price received for the total live weight of hogs slaughtered, and the average retail price paid for the total quantity of pork consumed were about the same as those indicated by the relationship that existed between quantities and prices during the six years preceding 1928-29.

Per capita consumption of pork and lard from Federally inspected slaughter during the year ended September 30, 1930, decreased 3.5 per cent from that of the corresponding year of 1928-29; while retail prices declined 2.6 per cent and hog prices 4 per cent. Demand during the last half of the marketing year was much weaker than the relatively high average level which prevailed during the first half. During the first two months of the present marketing year (October and November, 1930) per capita consumption was 14.4 per cent less than that of the same months a year earlier, while retail prices were 3.6 per cent and hog prices 3.7 per cent lower.

The decrease in the domestic demand for pork during 1930 from the high level of 1929 was brought about by a change in economic conditions as indicated by a marked decrease in business activity, a lower general price level, and a reduction in money incomes of consumers. This demand can be expected to improve soon after business activity increases, but it will probably average lower in 1931 than in 1930 even though some improvement in business conditions should develop during the last half of the year.

FOREIGN COMPETITION AND DEMAND

Continued heavy supplies of European hogs and pork products and a reduced foreign demand for American products during most of the hog-marketing year which ends September 30, 1931, are in prospect. United States exports of pork and lard for that period are expected to fall below the low 1929-30 levels. Exports from this country during the three months, October to December 1930, were about 45 per cent smaller than those of the corresponding months of 1929. European supplies during the year ending September 30, 1932, probably will be smaller than in the current year, and thus tend to improve the position of American hog products in European markets during the latter part of 1932.

Outstanding points in the European hog and pork situation are: (1) Unusually large numbers of hogs in most European producing countries in October, 1930, notably Germany; (2) a low-priced feed supply larger than that of last year, which, despite lower hog values, makes pork production profitable in most countries except Germany; (3) a downward tendency in the prices of hogs, cured pork, and lard; and (4) lack of any indication of any significant increase in buying power in the leading markets for American pork products during 1931.

In Great Britain, the leading foreign market for American pork products, record volumes of cured pork have been received from Denmark during recent months. The upward turn in Danish production got under way earlier than did production in other continental countries that supply the British market. The trend of Danish exports during recent months indicates that the peak of production in that country was reached in late 1930. The export movement from Denmark is expected to continue to be unusually heavy during the remainder of the present marketing year although probably showing a downward tendency. Thus far the decline in feed prices has been great enough to keep pork production on a profitable basis in Denmark. In the Netherlands, Poland, and other continental countries supplying the British market, pork production for the next few months may be expected to be heavier than a year ago, but

the feed situation in these countries is somewhat less favorable than in Denmark. Great Britain is expected to take about as much American lard this year as last, since continental production conditions appear to have little or no effect on British imports of the American product.

The continental market for American hog products is influenced largely by conditions in Germany, where hog marketings during 1930-31 are expected to be materially heavier than during 1929-30. Marketings during October and November were slightly larger than a year earlier. The German hog census as of December 1 indicated the largest number of hogs on record for that date. The distribution by age classes indicates that marketings in that country are likely to continue at high levels into the early part of the 1931-32 season. Although total marketings from December 1, 1930, to February 28, 1931 are expected to exceed only slightly those of last winter, those from March 1, through August, 1931, may be as much as 20 per cent larger than in the corresponding period of 1930. Marketings from September to November in 1931 are likely to average well above the large marketings of those months last year. The situation in Germany will react most unfavorably upon the continental demand for American lard. Demand for that commodity in Germany also is adversely affected by the growing competition of other fats.

PRICES

Hog prices during the marketing year ended September 30, 1930, were adversely affected by the weak foreign and domestic demand. The average price paid for hogs slaughtered was \$9.60, compared with \$10.01 during the marketing year 1928-29, although slaughter supplies in 1929-30 were 7 per cent smaller than those of a year earlier. During the first three months of the current marketing year prices made a greater seasonal decline and reached a lower level than they did in the same period last winter, even though marketings were 9 per cent smaller, and up to the third week in January, 1931, no seasonal advance had been made. With slaughter supplies during the three months, January to March, 1931, indicated to be at least as large as those of the corresponding period of 1930, only a moderate seasonal advance, if any, during this period, can be expected.

Price movements from April to September will be governed largely by the distribution of marketings of hogs from the 1930 fall pig crop, the trend of business activity, and the accumulation of storage stocks during the next four months. During the first part of this period, prices are expected to be below the levels of a year earlier, but with the probability of lower temperatures in July and August than prevailed during those months last year, and a holding over of hogs to be fed out on new-crop corn, the late summer advance is likely to get under way earlier, and prices from mid-July to the end of September will probably average higher than in the corresponding period of 1930.

PRODUCTION OUTLOOK

The hog outlook has changed materially since last September as regards both the marketing of the 1930 spring pig crop and the probable production of hogs in 1931. Instead of an unfavorable relationship between corn prices and hog prices and consequently an early movement of lightweight hogs in the period from November to March, as seemed a probable effect of the short corn crop, the corn-hog price relationship has been favorable and marketings have been delayed, with the proportion of the winter's total in January and February above, rather than below, average. Instead of the sharp reduction in hog production that usually takes place following a year of very short corn crop, it now seems probable that production in 1931 may be but little below that of 1930.

The prospect that only a slight reduction in hog production will take place in 1931, rather than a fairly large reduction as was indicated by the conditions prevailing last fall, is a favorable factor in the long-time outlook for the hog industry. A large corn crop in 1931, with the present indicated number of hogs to consume it, would result in smaller changes in hog production during the next few years than would be the case if numbers were considerably smaller. Hog production and slaughter for the last four years have fluctuated less from year to year than during any similar length of time in the last 20 years. This has tended to keep prices at a relatively stable level. A continuation of this policy of stability in production seems advisable.

BEEF CATTLE

Cattle prices during the first half of 1931, are expected to average considerably below those of the first half of 1930, but prices of most classes and grades during the second half will probably average about the same as those of a year earlier. Slaughter supplies in 1931 probably will be larger than those of last year, but the increase will be in unfinished cattle marketed during the last half of the year. Consumer demand for beef probably will remain near present levels until there is a marked improvement in business conditions. Imports of cattle, beef, and veal into the United States during 1931 are expected to be less than those of 1930.

The upswing of the present cycle of cattle production, which began in 1928, is expected to continue at a more moderate rate and result in a smaller increase in cattle numbers from the low point to the peak than the upswing of the preceding cycle which began in 1912.

Cattle numbers increased during 1930, and on January 1, 1931, the number of all cattle on farms was 58,955,000 head, an increase of 977,000 head over the number January 1, 1930. The increase in 1930 was the third annual increase since cattle numbers reached the low point of the production cycle in 1928.

As in both 1928 and 1929 the increase in numbers of all cattle in 1930 was in large part due to the increase in milk cows, the numbers of which were 532,000 head larger January 1, 1931, than on January 1, 1930. The total increase in cattle numbers between January 1, 1928, and January 1, 1931, was 3,279,000 head. Of this increase, 1,147,000 head, or 35 per cent, was in cows and heifers 2 years old and over kept for milk; 504,000 head, or 15 per cent, in yearling heifers being kept for milk cows; 591,000 head, or 18 per cent, in total calves; 758,000 head or 23 per cent, in beef cows and heifers 1 year old and over; and 259,000 head or 9 per cent in steers and bulls. The increase of 591,000 calves was in calves other than those saved for milk cows.

The increase in numbers since 1928 amounted to 8.6 per cent in the North Central States, about 5 per cent in the South Central and North Atlantic States, and 2 per cent in the Western States. Numbers in the South Atlantic States show practically no change. More than half of the total increase in all cattle and about 88 per cent of the increase in cattle other than cows kept for milk and heifers kept for milk cows took place in Iowa, Kansas, Oklahoma, Nebraska, and the two Dakotas.

SUPPLIES IN 1931

Inspected slaughter of cattle in 1930 of 8,170,373 head was 154,000 head or 1.8 per cent smaller than in 1929. Slaughter of calves totaled 4,595,000 head and was 106,000 head or 2.4 per cent larger than in 1929. The decreased slaughter of cattle in 1930 was due to a reduction in slaughter of 319,000 head in cows and heifers, and 16,000 bulls and stags, slaughtered, since steer slaughter was about 150,000 head larger than during the previous year.

The year 1930 probably marked the termination of the downward trend in cattle slaughter which has been under way since 1926. Under more normal conditions in the cattle market, slaughter in 1930 probably would have been at least as large as in 1929, but the sharp drop in cattle prices due to the business depression caused the holding over of considerable numbers of cattle, mostly cows, that would normally have been marketed. Regardless of whether prices of cows advance during 1931 or not, a similar holding back is hardly to be expected this year and material advance in prices will probably result in rather heavy marketings of all kinds of cattle.

Although total cattle slaughter in 1931 is expected to be somewhat larger than in 1930, the increase will come in the last half of the year. Calf slaughter will probably be larger throughout the year but with the largest increases during the spring and early summer. Inspected stocker and feeder shipments of cattle and calves from public stockyards during the last six months of 1930 were 8 per cent less than those of the last half of 1929, but shipments of calves during this period, which constituted about 18 per cent of the total movement, increased about 14 per cent. The feeder movement in 1930 was unusually late. December shipments were the largest since 1923. The number of cattle on feed for market on January 1 was estimated as 10 per cent smaller than a year earlier and the smallest for many years. Marketings and slaughter of cattle during the first quarter of 1931 are expected to be even smaller than the small number of 1930, but slaughter will be relatively larger than marketings

since feeder shipments are likely to be smaller. During the second quarter of the year supplies of fed cattle will continue relatively small, but there is likely to be a larger movement than last year of grass steers from Texas and of grass butcher cattle from dairy areas. During the second half of the year, fed-cattle supplies will be smaller than in 1930, but a material increase in grass cattle of all kinds from all areas seems probable.

FOREIGN SUPPLIES

Cattle imports totaled 232,000 head in 1930, compared with 505,000 in 1929. Of the 1930 total, 172,000 came from Mexico and 60,000 from Canada. No definite information is available concerning cattle numbers in Mexico, but there are indications of reduced production in the northern sections of that country for which the normal outlet is the American market. Practically all of the cattle imported from Mexico entered during the first six months of the year and prior to the increase in import duties. Of the imports from Canada, 71 per cent entered before June 30. In 1929 only 56 per cent of the total was received from Canada during the first half of the year.

Canned beef inspected for entry into the United States during 1930 amounted to 48,533,000 pounds, a decrease of 28,948,000 pounds or about 37 per cent from the total of 1929, according to records of the Bureau of Animal Industry.

Total imports of fresh and frozen beef during the first 11 months of 1930 were less than one-fourth as large as during the corresponding period in 1929, amounting to 9,266,000 pounds in 1930, compared with 41,840,000 pounds in 1929. This decrease was due largely to decreased imports from New Zealand. From June 30 to November 30 only 1,905,000 pounds of fresh and frozen beef and veal entered the United States from all sources.

Imports of cattle, beef, and veal during 1931 are expected to be less than those of 1930, largely because of the import duties now in effect. The amount of the reduction will be influenced to some extent by the prices prevailing in both the American and foreign markets.

DEMAND FOR CATTLE AND BEEF

Consumer demand for beef and veal was considerably weaker during 1930 than the unusually strong demand of 1928 and 1929, largely because of the unfavorable economic situation as reflected by declines in business activity, money incomes of consumers, and the general price level. Unusually high temperatures during July and August also materially reduced the demand for beef. Per capita consumption of federally inspected beef amounted to 35.7 pounds during the first 11 months of 1930, compared with 37 pounds during the corresponding period of 1929, a decrease of 3.3 per cent. This decrease was accompanied by average declines for the period of 2.8 cents per pound, or 8.2 per cent, in retail prices of beef, and 2 cents per pound, or 18.8 per cent, in live-cattle prices. Demand for beef in 1931 will be governed largely by the trend of business conditions during the year. With industrial activity and money incomes of consumers at an unusually low level at the beginning of the year and with no definite evidence of immediate improvement, consumer demand in 1931 is likely to average lower than that of the year 1930 as a whole, being considerably lower during the first six months and possibly somewhat higher during the last six months.

Demand for feeder cattle was stronger during the first quarter of 1930 than for the same period of 1929, but was considerably weaker during the remainder of the year as a result of unfavorable returns from fed cattle marketed from March to October, and the sharp reduction in feed supplies brought about by the drought. Present indications point to a demand for feeder cattle during the next few months below the strong demand of the same period last year. Feeder demand during the summer and fall of 1931 will be governed by the prevailing prices for grain-fed cattle, the trend of prices for such cattle during the spring and summer, and the production prospects for feed crops. Probable developments with respect to these causal factors point to a stronger demand for feeder cattle during the second half of the year than prevailed during the last half of 1930.

CATTLE PRICES

Cattle prices remained fairly steady during January and February of 1930 and averaged higher than during the same period in 1929. In early March,

however, prices of all grades of cattle began a decline which continued until mid-August and was one of the sharpest declines on record. Mid-August prices of all grades were below the low levels of 1926, the year of largest cattle slaughter since 1918. A sharp recovery occurred during the last half of August and was followed by a gradual price advance for the better grades of steers, a stable level of prices for the lower grades of steers, and a decline in prices of butcher cattle during the remainder of the year. Stocker and feeder prices, which usually decline during the fall months, reached their low point in mid-August, and after a sharp recovery during the last half of that month, advanced moderately during the last four months of the year.

The decline in prices of slaughter steers at Chicago from December, 1929, to December, 1930, amounted to \$2 for Choice and Prime grades, \$2.40 for Good grade, \$2.68 for Medium grade, and \$2.63 for Common grade. During the same period, stocker and feeder steer prices declined \$2.50 and the decline in butcher cattle prices ranged from \$2.25 to \$3.50. The price spread in December, 1930, between Common and Choice slaughter steers was about 13 per cent greater than that of December, 1929, and 5 per cent greater than the 5-year average for that month.

The average price of slaughter cattle during 1930 was \$8.54 as compared with \$10.59 during 1929, and \$7.32 in 1926. The average price of calves was \$9.67 in 1930 compared with \$12.59 in 1929 and \$9.83 in 1926. Lightweight slaughter steers of the better grades averaged higher in price for the year than did heavy steers, the spread being most pronounced during the fall months.

The level of cattle prices in 1931 will be governed largely by developments in the business situation and by feed-crop prospects. Assuming, however, that improvement in the business situation will not be reflected in the cattle markets to any appreciable extent before the latter part of the year, the general level of cattle prices during the first half of 1931 will average considerably lower than during the corresponding period of 1930.

Prices of the better grades of slaughter steers will probably make a seasonal decline during the first half of the year, with most of the decline occurring during the second quarter. Prices of the lower grades of slaughter cattle and of stocker and feeder cattle, however, are expected to score a seasonal advance, although it probably will be less than normal. It will be influenced by the number of dairy cattle and calves that go to market during that period and by the demand for unfinished cattle for grazing purposes during April and May.

During the second half of the year several conditions may develop which would tend to strengthen cattle prices. These are: (1) A marked scarcity of grain-fed steers; (2) improving consumer demand for beef because of increasing industrial activity, cooler temperatures than prevailed in July and August, 1930, and smaller supplies of fresh pork to compete with beef; and (3) a stronger feeder demand than prevailed a year earlier as a result of fairly favorable returns from 1930-31 feeding operations and prospects of a much larger production of feed in 1931 than in 1930.

A price-depressing influence that would at least partly offset the foregoing favorable factors is the probability of larger marketings of grass cattle than those of the second half of 1930. This would have its greatest effect on prices of the lower grades. In general, these factors indicate that prices of the better grades of steers during the last half of 1931 will average higher than during the last half of 1930 and prices of the lower grades will average about the same as those of a year earlier.

LONG-TIME OUTLOOK FOR BEEF CATTLE

With total cattle production now definitely on the upswing of a new cycle, the questions of major interest to beef-cattle producers are: What will be the character of this upswing and what will be the relative position of cattle production to other agricultural activities that are possible alternatives, during the next few years?

A consideration of the present situation as to the proportion of the different kinds of cattle in the present total number on farms, their regional distribution, and the factors that will be of most importance in determining future trends, leads to the conclusion that the present upward trend in production will not reach so high a peak and that the rate of expansion will be more moderate than

in the preceding cycle which began in 1912 and reached its peak in 1918. During the former cycle cattle numbers increased 7,500,000 head in the first three years, and 16,000,000 head from the low point to the peak, whereas in the first three years of the present cycle numbers have increased only 3,279,000 head. It is to be remembered that expansion in numbers during the former cycle was stimulated by war-time demands for about three years beyond the point at which it would normally have been checked by the influence of increased market supplies on prices.

At the beginning of the previous cattle-production cycle, sheep production was declining rapidly in the Western States and this made range and feed available for expanding the cattle numbers; from 1912 to 1916 cattle numbers in this area increased very rapidly. Although some decrease in sheep production from present levels seems likely, there is little probability that this decrease will be at all comparable in magnitude with that from 1911 to 1916. Cattle production in this area is expected to increase only moderately within the next few years.

The principal expansion in cattle numbers will come in the Corn Belt States, and especially in the area west of the Mississippi River. The possibilities for expansion in this area are very considerable, but it seems likely that the trend of cattle prices in relation to other prices, rather than potential capacity, will be the factor determining this expansion. The large decrease in horse production, with the consequent increase in pasturage and feed for other livestock, the unprofitableness of the poorer lands for grain production and their greater possibilities for cattle production if consolidated into larger units, the need for more legumes, and the probability that the relative unfavorableness of cash-grain production as compared with livestock production will continue, all furnish incentives for increasing cattle production in this area.

Cattle production has been increasing for three years, but the increase has been greater in dairy cattle than in beef cattle. The numbers of dairy cattle will probably not change materially during the next few years. Beef-cattle production will continue to increase, but only so long as the returns from such cattle appear relatively favorable to those of alternative agricultural activities. The sharp drop in cattle prices in 1930 eliminated much of the price incentive to expand production, but some recovery from the present price level seems likely. Since further expansion in production will be closely associated with agricultural readjustments in the Corn Belt area it will proceed at a moderate rate, and slaughter will probably more nearly follow the increase in numbers than during previous periods of expansion. For a few years near the peak, when output of slaughter cattle is large, returns from cattle production may be unfavorable, but it is probable that during this next decade cattle prices will average relatively higher than the average prices of all agricultural products combined.

SHEEP AND WOOL

Sheep numbers in the United States have increased 43 per cent since 1922 and on January 1, 1931, probably were the largest for that date in the history of the country. Marketings of lambs last year also reached record levels and are expected to continue relatively large through 1931. Although an increase in demand is expected during the next year or two, sheep producers are faced with the problem of reducing breeding-stock numbers and disposing of a larger proportion of their annual lamb production through slaughter channels, in order to improve materially the economic position of the industry.

World wool production continues near record levels, whereas consumption has been reduced by business depressions throughout the world. The present low level of wool prices is expected to curtail production, but no material reduction is likely in the coming year. World stocks are still large.

SHEEP AND LAMBS

NUMBERS JANUARY 1, 1931

The number of sheep in this country increased slightly in 1930 despite the heavy slaughter of lambs during the year; the increase was the smallest for any year since 1925. The estimated number on farms and ranges January

1, 1931, was 51,911,000 head compared with 50,503,000 head January 1, 1930, and 36,186,000 head January 1, 1922, at the last low point in the domestic sheep cycle.

The increase in 1930 was in breeding and stock sheep. This was in contrast to 1929 when a large part of the increase was in numbers on feed for market. The number of lambs and sheep on feed January 1, 1931, was 775,000 head smaller than on January 1, 1930. The small slaughter of ewes in 1930 tended to increase breeding stock. The federally inspected slaughter of sheep and lambs in 1930 was 16,697,000 head. This was 2,700,000 head larger than in 1929. The increase in 1930 resulted from an increase of about 3,000,000 head in the slaughter of lambs, since there was actually a decrease of about 300,000 head in the slaughter of sheep. The reduction in the slaughter of sheep resulted from the very low prices for slaughter ewes during most of the year. In fact, prices for thin, old ewes were so low they would hardly pay freight and marketing charges.

SUPPLIES FOR 1931

Total slaughter supplies for the first four months of 1931 are likely to be smaller than during this period in 1930, because of the reduction in the number of sheep and lambs on feed January 1. Since the reduction in feeding is largely in the late marketing districts of Colorado and western Nebraska, it is to be expected that the greatest decline in slaughter from last year will be in March and April. The reduction in slaughter during these months, however, may not be so large as the reduction in numbers on feed. Relatively large numbers of ewe lambs now being held in some Western States, may be marketed if prices advance sufficiently; and a material advance in prices might also be expected to result in the marketing of other lambs and sheep not now on feed.

In the early lambing sections of California and Arizona conditions to the end of January have been more favorable this season than last and present indications are that the early crop in these States will be at least as large as a year ago. The early lambing States of the Southeast were in the center of the 1930 drought area, and feed supplies have been low, but weather conditions to the end of January have been exceptionally favorable. It seems hardly likely that the percentage lamb crop in these States will be as large as in 1930, and there was a small reduction in the number of breeding ewes.

Marketings of sheep and lambs from May 1 to the end of 1931 will depend in part upon the size of this year's lamb crop and in part upon the reaction of growers to prevailing levels of lamb, sheep, and wool prices. The estimated increase of 2,000,000 head in the lamb crop of 1930 was not the result of unusually favorable lambing conditions. The number of lambs saved per 100 ewes in 1930, was about equal to the average of the preceding five years. The percentage of lambs saved depends upon conditions at breeding time, feed and weather through the winter, and weather and care at lambing time. For the country as a whole, conditions at breeding time and weather to the end of January this winter, have been at least as favorable as the average. Even if conditions at lambing time are no more favorable than in 1930, the number of lambs saved per 100 ewes should be about as large in 1931 as in 1930, provided equal care and attention are given flocks from now through lambing. But the financial situation of many sheep men will probably make it impossible for them to give flocks as satisfactory attention this year as was given last year. The increase of about 5 per cent in the number of breeding ewes would result in an increase of about 1,500,000 head in the number of lambs saved in 1931 if the crop is proportionately as large as that of 1930.

With a lamb crop in 1931 as large as in 1930 the number going to slaughter either as grass or fed lambs in the marketing year May, 1931, to April, 1932, will, without much doubt, be larger than the number of the 1930 lamb crop that will be slaughtered in the present marketing year. Even if lamb prices are no higher in 1931 than in 1930 it hardly seems likely that the carry-over of ewe lambs will be so large as the carry-over from the 1930 crop and if prices should make a substantial recovery during 1931, heavy marketings would probably result. Marketings of grass sheep from Texas and old and dry ewes from all areas will probably be larger during the marketing year 1931-32 than during the present year.

DEMAND

Demand for lamb and mutton is likely to remain around the present level until consumer incomes improve. With larger marketings the consumption of lamb and mutton increased materially in 1930, but this increase was accompanied by marked reductions in the prices of live lambs, and retail and wholesale prices of dressed lamb.

Per capita consumption of federally inspected lamb and mutton during the first 11 months of the year, increased from 4.18 pounds in 1929 to 4.83 pounds in 1930, or 15.6 per cent. The average wholesale price of Medium and Good grade dressed lamb at New York declined from \$26.26 per 100 pounds for the first period to \$19.93 for the second. The United States average price for leg of lamb at retail as reported by the Bureau of Labor Statistics fell from 40.3 cents to 35.4 cents per pound. The average price paid for slaughter sheep and lambs dropped from \$13.36 to \$9.11 per 100 pounds. The reductions between the two periods amounted to 4.25 cents per pound, or 32 per cent, in the price of live sheep and lambs; 6.33 cents per pound, or 24 per cent, in the New York wholesale price of carcass lamb; and 4.9 cents per pound, or 12 per cent, in the retail price of leg of lamb.

PRICES

Sheep and lamb prices in 1930 continued the downward trend that began in April, 1929, and in the last quarter of the year reached the lowest levels since 1914. The low prices for sheep and lambs in 1930 resulted from increased market supplies; unfavorable business conditions; a marked decline in the general price level; and low prices of wool, pelts, and competing meats.

The average price of sheep and lambs slaughtered during the fed-lamb marketing season, December, 1929, to April, 1930, was \$10.56 per 100 pounds as compared with \$15.03 paid during the corresponding period a year earlier, a decline of 30 per cent. Inspected slaughter during this period was 18 per cent or 967,000 head larger than that of the corresponding period of 1928-29. The price paid for sheep and lambs slaughtered during the marketing season for the 1930 crop of grass lambs, May to November, 1930, averaged \$8.43 per 100 pounds as compared with \$12.21 per 100 pounds during the corresponding period in 1929, a decline of 31 per cent. Inspected slaughter from May to November, 1930, was 16 per cent, or 1,409,000 head larger than that of the corresponding months of 1929.

An unusually wide spread between prices of feeder lambs and slaughter lambs prevailed during late summer and early fall, but the spread became about normal before the year ended. The price of good and choice feeder lambs at Chicago averaged about \$7 per 100 pounds during the last half of the year as compared with \$12.75 during the last half of 1929.

The value per head of sheep and lambs on farms on January 1, 1931, averaged \$5.35, compared with \$8.92 a year earlier, and was the lowest since 1922. Total farm value was \$277,708,000, a decrease of 38 per cent from that of 1929.

WOOL

PRODUCTION

World wool production is still near the peak reached in 1928, and although production in 1931 may not be much below that of 1930, prices now prevailing are likely to reduce production materially in the next few years. Production in 15 important countries in 1930 was approximately 1 per cent higher than in 1929, but about 1 per cent lower than in 1928. In the pronounced upward trend of the present cycle, world production (exclusive of Russia and China) rose from 2,566,000,000 pounds in 1923 to 3,232,000,000 pounds in 1928. Most of this increase occurred in countries of the Southern Hemisphere and in the United States. Both in the United States and in foreign countries as a whole, the production of fine wools increased proportionately more than that of medium and coarser wools. The greater increase in the production of fine wools came in response to the relatively high prices for such wools following the World War. Decreases in total wool production in the next few years will probably come mostly in fine wools.

Production of shorn wool in the United States rose from 222,000,000 pounds in 1922, the low point of the last decade, to 328,000,000 pounds in 1930. The

number of sheep on farms, January 1, 1931, was 2.8 per cent higher than on January 1, 1930, and conditions indicate no material reduction in average fleece weights in 1931. Moreover, the curtailing of fall shearing in 1930 in certain sections where the custom of fall shearing is normally followed will result in additional supplies of twelve month's wool in the spring of 1931.

Production in Australia apparently reached its peak for the present cycle in 1928 when it amounted to 968,200,000 pounds. In 1929 it fell to 910,000,000 pounds and for 1930 is now estimated to be 875,000,000 pounds. Heavy sheep losses have been reported for New South Wales in 1930, and these may reduce production still further in 1931. However, the season is unusually favorable at present and lambing returns have been reported as very satisfactory. In New Zealand wool production reached the peak of 242,000,000 pounds in 1929 but declined to 237,000,000 pounds in 1930.

In Argentina production reached a peak of 363,000,000 pounds in 1926, and has been trending downward since, but in 1930 production amounted to 333,000,000 pounds compared with 324,000,000 in 1929. Production in Uruguay has been increasing steadily since 1924, and in 1930 amounted to 154,000,000 pounds, practically the same as in the record year of 1911. Slaughtering in New Zealand, Argentina, and Uruguay have been unusually heavy in 1930 but it is improbable that slaughterings have been sufficient to reduce total sheep numbers in those countries. Wool production in the Union of South Africa has increased very rapidly since 1924 and in 1930 amounted to 337,000,000 pounds, the record to date. It is not to be expected that such material increases will continue much farther, especially in view of present low prices.

In the United Kingdom production has had a downward trend since 1928 and in France it has declined since 1927, whereas in Germany the trend has been downward since 1923. However, none of these countries exert a very material influence on changes in the world total clip. Russian production will obviously show a decrease in 1931 since there was a wholesale slaughter of sheep by peasants during the extensive campaign for collectivization in 1930.

STOCKS

Although figures are not available showing stocks of wool now on hand, previous figures of stocks, together with imports, consumption, and production, indicate that stocks of combing and clothing wool in the United States are considerably greater than they were a year ago. It also appears that stocks of wool are larger than a year ago in foreign consuming countries and nearly the same in important foreign producing countries.

Reported stocks of combing and clothing wool in the United States on April 1, 1930, were 195,000,000 pounds or 29,000,000 pounds less than on April 1, 1929, and imports of combing and clothing wool from April 1 to November 30 were 9,000,000 pounds less in 1930 than in 1929. Consumption of these wools by reporting mills from April 1 to November 30, however, was 59,000,000 pounds less in 1930 than in 1929, and domestic production, including pulled wool, was about 30,000,000 pounds larger in 1930 than in 1929.

The marketing season for the 1930 clip of the Southern Hemisphere will extend over into the period in which the United States clip of 1931 will start to market. The 1930 clip in five Southern Hemisphere countries amounted to 1,936,000,000 pounds, compared with 1,933,000,000 in 1929, and the record clip of 1,981,200,000 pounds in 1928. At the beginning of the present marketing season in these countries, large stocks remained from the previous year's clip, but exports were heavy early in the season and on December 1 the apparent total supply in these countries was about the same a year earlier. These larger exports from the Southern Hemisphere caused imports into the United Kingdom, France, Germany, Poland, and Japan, to be larger for the full months in 1930 than in 1929. Unemployment in the British wool textile industry and the quantity of wool tops passing through conditioning houses in Great Britain, France, and Belgium, point to levels of consumption materially lower than for the preceding year.

IMPORTS AND CONSUMPTION

Increasing wool production in the United States has been accompanied by a downward trend in imports during recent years. In 1930 imports of combing and clothing wool fell to 69,000,000 pounds, the lowest level in 17 years, and 33,000,000 pounds below 1929.

Consumption of wool in the United States has also been on a downward trend and in 1930 was the lowest in several years. The reduction in consumption in 1930 came despite lower prices and was a result of the decreased consumer buying power accompanying the present major business depression. The total quantity of combing and clothing wool consumed by reporting mills for the months January through November amounted to 316,000,000 pounds grease basis in 1930 compared with 395,000,000 pounds in 1929. These mills consume 75 to 80 per cent of the total for the country. For the months of September, October, and November consumption was 89,000,000 pounds in 1930 compared with 111,500,000 pounds in 1929. Consumption increased more than seasonally in September and October, but fell more than seasonally in November. Wage earnings and business conditions do not point to any immediate recovery in domestic consumer demand of material proportions.

PRICES

Wool prices in the United States continued the general downward movement during 1930 that had been in progress since 1928. After falling steadily for the first five months of the year, they remained about steady until autumn, then started downward again and were still falling in January, 1931. Prices declined on all grades, but the greatest declines were in prices of medium wools. The decline for the calendar year 1930 on strictly combing wools amounted to 16 per cent for 64s, 70s, 80s (fine); 28 per cent for 56s (three-eighths blood); and 30 per cent for 48s, 50s (one quarter blood).

The decline in foreign prices was temporarily checked in the spring of 1930 and a short-lived recovery occurred. As the new season's sales got under way, however, important declines again took place. December prices were at the lowest levels of the year and prices fell still farther in January, 1931. Except for a brief period in early summer, the margin of domestic over foreign prices has been relatively wide throughout the year. In fact the further widening of this margin in late November and December is accountable for the recent declines in domestic prices.

The declines in world wool prices in 1930 accompanied the large supplies available, the continued high level of production, the reductions in consumer buying power and the world-wide decline in commodity prices. For a large part of 1930 domestic prices held about as far above foreign prices as they could without attracting large imports, and with the declines in London prices at the opening of the January, 1931, sales, the margin on some grades became the widest in several years.

PRODUCTION OUTLOOK

If general economic conditions had been more nearly normal in 1930 it is probable that there would have been no increase in sheep numbers in the United States on January 1, 1931, and that January 1, 1930, would have been the January peak in the present sheep-production cycle. A considerable part of the hold-over of ewe lambs and old ewes in 1930 was a reaction to the low price situation rather than an indication of a desire to further increase breeding flocks. Regardless of the price situation in 1931 a similar hold-over is not to be expected. Marketings may be delayed for one year by this method, but hardly for two.

Strong efforts are being made in the range States to reduce operating costs, but success in this direction is not likely to be sufficient to make returns from the business profitable to the majority of growers if wool and lamb prices remain around levels prevailing in 1930. With increased beef production probable for some years, and an upswing in hog production likely within two years, any further increase in the production of lamb and mutton for the present does not seem advisable. For the next few years the situation for the industry as a whole would be improved if breeding flocks were reduced and stabilized at a level at which the lamb crop in excess of replacement requirements would be at least no larger than slaughterings in 1930.

MOHAIR

Mohair producers of the United States at present are confronted with a difficult situation. Activity in the mohair-manufacturing industry during 1930 was greatly restricted and consumption of mohair was small. At the beginning

of 1931 a large proportion of last year's clip is still on hand, largely in the hands of growers' agents, another large clip is in sight for 1931, and there is little evidence as yet of increased volume of consumption in 1931.

Demand has declined, partly because the principal users of the finished product—furniture and automobile manufacturers—have curtailed operations and are not in the market for usual supplies of upholstering fabrics, and partly because style changes, for several years past, have been shifting to other fabrics. Until demand from these industries picks up, or until other outlets can be found, mill activity will continue on a greatly reduced scale. In the present situation, apparently, further adjustments in prices, by themselves, will not stimulate consumption sufficiently to reduce materially the accumulation of stocks.

From 1921 to 1926 production of mohair in the United States increased rapidly in response to a growing demand at advancing prices. Not only did this demand take all of the domestic production, but relatively large quantities were imported, and the manufacture of upholstering for furniture and closed automobiles expanded greatly. Beginning in 1927, however, a shift toward other upholstering fabrics started in these industries, and consumption in this country has declined. This decline was first reflected in decreasing imports and then in accumulation of domestic mohair. The depression of 1930 further reduced the rate of consumption, with the result that only a small part of the 1930 clip has yet been used and imports have almost ceased.

Domestic production of mohair, which increased from 8,500,000 pounds in 1920 to 11,800,000 pounds in 1926, continued to expand until in 1930 it was nearly 16,000,000 pounds. The 1930 production was larger than the indicated average yearly consumption of both domestic and foreign mohair from 1920 to 1925 and probably equal to the yearly consumption in 1929. Imports for consumption, which in 1921 were about 4,000,000 pounds, increased to 9,000,000 pounds in 1926, declined to 4,700,000 pounds in 1927, and to about 1,200,000 pounds in 1930.

The trend of mohair production in Turkey and South Africa, which, together with the United States, furnish most of the world's commercial supply, was somewhat different from that in the United States. In South Africa, which was formerly the largest producer, production decreased from 20,000,000 pounds in 1922 to 9,000,000 pounds in 1927. Since 1927 it has tended to increase and in 1930 it amounted to 10,000,000 pounds. Turkish production has been tending upward since political conditions in that country became stable. In 1924 it was 5,000,000 pounds and had increased to 10,000,000 pounds in 1928. Because of heavy death losses in the winter of 1928-29 it fell to 7,000,000 pounds in 1929, but in 1930 it had increased to 8,000,000 pounds. The 1930 clip in these three countries reached the largest quantity in recent years, amounting to about 34,000,000 pounds. The United States proportion of the total increased from about one-fourth in 1922 to about one-half in 1930.

Foreign mohair has also tended to accumulate since 1928. A total apparent supply about May 1, 1930, for the 1930-31 season in Turkey was about 12,300,000 pounds compared with 10,500,000 pounds the preceding season and about 9,900,000 pounds in 1928-29. As the movement of foreign mohair to the United States declined after 1926 another outlet had to be found and an increasing quantity of it has gone to Great Britain either for manufacture or reexport. Mill consumption of mohair in Great Britain in 1930 is reported to have been much reduced.

Mohair prices in the United States, after reaching a high point in the winter of 1927-28, declined sharply in 1929 and again in 1930. Quotations on sorted domestic mohair declined from 5 to 10 cents a pound at Boston during 1930. Domestic first-kid hair declined from 78 cents a pound in January, 1930, to 68 cents in January, 1931. Domestic medium mohair declined from 58 cents a pound to 48 cents during the same period. Turkey fair average mohair (in bond subject to duty) was quoted at 42 cents a pound in January, 1930, and at 16 cents in January, 1931. Cape firsts in bond declined from 44 cents a pound to 17 cents during the same period. The low demand for mohair by mills in the United States is shown by the fact that imports declined during 1930 in spite of the margin favorable to imports between quotations on domestic mohair in Boston and quotations on foreign mohair in producing countries.

Production of mohair in the United States in 1931 will probably be near the 1930 level and present information points to no decrease in the production

in Turkey and South Africa. Even with foreign prices at present low levels, imports in 1931 will continue negligible but the domestic production will have to find an outlet in the United States at prices that will be fairly competitive with the in-bond price at Boston, plus the duty.

HORSES AND MULES

The long-time horse and mule outlook at the beginning of 1931 is but little different from that at the beginning of 1930. The number of horses and mules on farms decreased further in 1930 and decreasing numbers are in prospect for the next few years. The colt crop of both horses and mules in 1930 was smaller than in 1929. The decline in the index of horse and mule prices in 1930 was less than the decline in the index of all agricultural products. Although the use of power equipment on farms expanded in 1930 it is possible that lower purchasing power, lower wages, and cheaper work stock will tend to restrict this expansion in 1931.

The number of horses and mules on farms continued to decline during 1930. The number of horses on farms January 1, 1931, was 12,803,000 head and the number of mules was 5,131,000 head, compared with 13,304,000 and 5,279,000, respectively, on January 1, 1930. The decline in mule numbers was particularly marked in some of the mule-producing States. There are no indications of a tendency to check the decline, since the number of both horse and mule colts raised in 1930 was less than the number raised in 1929. The total number of all horses and mules which was 25,000,000 in 1920 will be reduced to about 10,000,000 by 1940, providing births continue at present rates. Since the number of suitable breeding animals now on farms is greatly reduced, the maximum number of colts that could be raised from this breeding stock during the next eight years could not prevent the total number of horses and mules from declining to less than 15,000,000 head by 1940.

Market and farm prices of both horses and mules for the United States during 1930 averaged materially lower than during 1928 and 1929, both of which were slightly above 1927. There was an upward trend in the farm value per head of all horses and mules during 1928 and 1929 in spite of the fact that old animals were a growing proportion of the total. The upward trend was checked in 1930 by the fall in the price of horses and mules, which accompanied the drop in the price level of farm products. Total receipts at key markets indicate only slightly smaller receipts of horses and mules in 1930 than in 1929. Early season movement at these markets exceeded that of 1929, however, but there was a drastic reduction in both numbers and prices during the later part of the year. The sharp drop in numbers received during the three months, October to December, compared with the same period in 1929 reflect the greatly reduced farm purchasing power in the South and East. Shortages of feed and pasture were also factors in the smaller demand.

The inventory value of colts 1 year old but under 2 years, on January 1, 1931, was generally lower in all sections of the country than on January 1, 1930, averaging for the United States about 15 per cent lower for both horse and mule colts. The 1930 inventory values were somewhat higher than the 1929 values for this class of colts in areas that normally buy their work stock.

The use of tractors, combined harvesters, and other power-operated farm equipment continued to expand in 1930. On most farms that have been equipped with mechanical power, especially the larger farms, less dependence is being placed upon horses and mules for power. Even in the Southern States where the mule has always been the mainstay for field work, some shift to mechanical power is under way on the larger plantations. The generally reduced purchasing power of farmers in 1931 will probably tend to check temporarily the shift from animal to mechanical power.

The useful life of the old and the lighter horses is being prolonged both by tractors and trucks. Formerly draft animals were necessary for the heavy field operations and road hauling, much of which are now being done by mechanical power. The old and light animals are utilized for such operations as cultivating, haying, and threshing, which are neither heavy nor of long duration.

PRODUCTION OUTLOOK

Demand for horses and mules will not make much improvement during 1931 and prices will continue at present reduced levels. It is probable that an improvement in the agricultural situation in 1932 will be reflected in improved demand and strengthening prices, especially for mules.

It is expected that the upward movement in prices evidenced in 1928 and 1929 will be continued. The comparative cost of mechanical power and of animal power and the available supply of work animals will be the determining factors in setting the limits to such upward movement.

Substitution of mechanical power for mules in the South will be relatively slow. There has been a sharp decrease in mule breeding in the States from which the Cotton Belt secures its work mules. Hence, a shortage of mules may develop within the next few years. Farmers who are in position to produce mules under favorable conditions probably will find a good market for young mules within the next four or five years.

DAIRY PRODUCTS

The number of milk cows on farms is 2.4 per cent larger than the number a year ago, and the number of yearling heifers being kept for milk cows, although about the same as the number on hand a year ago, is above the number normally required for replacement. Fewer cows have been moving to market than in either of the last two years and more beef-type cows are being milked.

Milk production per cow during 1930 averaged about 2 per cent lower than in 1929, chiefly because of the drought and poor pastures, but production per cow on January 1, 1931, was nearly 2 per cent heavier than a year ago. With more cows on farms and the number still increasing, and with milk per cow running above last year, an increased production of dairy products during 1931 must be expected. The volume of the increase will depend in part on pasturage conditions and feed supplies, and in part on the extent to which the plans of producers are changed by recent declines in prices of dairy products, by such further price declines as may be caused by the steadily increasing production, or by possible recovery in the prices of other farm products in the less-specialized areas of dairy production. A substantial reduction in the number of heifer calves on farms January 1, 1931, below the number a year earlier seems to indicate the beginning of a slowing up in the recent increase in dairy stock.

The output of all manufactured dairy products was slightly lower in 1930 than in 1929, mainly because of the severe drought and poor pasture over large areas. However, the rate of production rose significantly during the latter months of the year indicating a tendency toward an increased rate of production in 1931. This is particularly evident in the western Corn Belt and similar territory where dairy production is closely associated with the beef-cattle industry. In these areas the reduced returns from other products have led a larger number of farmers to resort to dairying as a source of much-needed supplementary income. There is no evidence as yet that dairy production from these sources will be less during the year ahead.

One reason for the expansion of dairy herds is the fact that until December, 1930, the prices of butter, fluid milk, and other dairy products averaged above the general agricultural price level, and are still in a favorable position with reference to grain prices. Although the margin between the price of dairy products and the price of dairy feeds enables many commercialized dairymen to continue feeding at some profit, the farm income of dairymen generally has been reduced, because the great bulk of the cost elements entering into the dairy industry are farm and family labor and home-produced feeds and pasture.

The demand for dairy products has been distinctly reduced by the business depression. This is manifested by the curtailed consumption of fluid milk, and the failure of lower prices to induce any appreciable increase in butter consumption. Undoubtedly when business recovery comes demand will improve but the improvement throughout 1931 is expected to be comparatively slight. Imports and exports of dairy products were below normal in 1930. Domestic dairy prices have now declined nearly to the world level, but foreign markets do not afford an advantageous outlet for the American dairy industry. The outlook is for continued low prices for 1931.

NUMBER OF MILK COWS AND MILK PRODUCTION

The estimates of the number of milk cows, including all cows and heifers 2 years old or older kept for milk, show an increase of 2.4 per cent during 1930, the number on farms on January 1, 1931, being estimated at 22,975,000, compared with 22,443,000 on the same date in 1930, and about 21,800,000 in

each of the previous two years. During 1930 the number of cows on farms increased in all except about six scattered States and, in comparison with two years ago, numbers are now larger in all States except California and Wyoming. The number of milk cows is still increasing and will probably continue to increase through most of 1931 and possibly well into 1932, but the rate of increase is apparently declining. The number of yearling heifers being kept for milk cows on farms on January 1, 1931, is estimated at 4,688,000, or about the same as the number on hand last year, the increases in most of the cotton-growing States and in the area from Ohio west to Minnesota being offset by decreases in the northeast and in the western half of the Corn Belt. The present number of yearling heifers being kept for milk cows is about 10 per cent above the average number on hand at this season during the last six years and appears to be not far from 10 per cent above the number normally required to maintain dairy herds at their present size. Ordinarily, this rather large number of heifers in comparison with present numbers of milk cows would cause the number of milk cows to increase about 2 per cent per year.

There was apparently a smaller number of cows than usual culled out during 1930. Although the number of cows slaughtered on the farms or by local butchers is not accurately known and may have increased recently, it is worth noting that the number of all cows and heifers killed under Federal inspection in 1930 was 3,623,000 compared with 3,942,000 in 1929 and an average of 4,607,000 during the five years, 1925-1929. The figures for recent months would seem to indicate that extensive culling of dairy cows has not yet begun. Until it does begin, the numbers remaining on farms will continue to increase.

The number of yearling heifers being kept for milk cows is likely to decline for several years, for the number of heifer calves under 1 year old on farms in the dairy sections on January 1, 1931, appears to be about 8 per cent below the number on hand in 1930 and the number of heifer calves saved in 1931, to be raised for milk cows, will probably be further reduced because the number of heifers raised has tended to vary with the price of cows. In sympathy with rising prices for beef and butter, the average price of milk cows, as reported by dealers, rose steadily to a peak of over \$96 per head in the summer of 1929, slightly above the previous high record set in 1919. In some of the Eastern States where many dairymen maintain their herds by purchase instead of by raising calves, prices reached a peak above \$160 per head. These prices caused farmers to save increasing numbers of heifer calves for dairy purposes until 1929, the increases being particularly marked in the Eastern States, and in areas that raise cows for sale. Since the summer of 1929 the prices of milk cows being sold have dropped steadily, and on December 15 were reported as \$62, with some further decline probable. The inventory value of milk cows on farms on the first of the year has also declined from \$83.43 in 1930 to \$57.57 this year. Values are now only about \$9 per head higher than they were in 1925. These low prices of milk cows reflect the lower value of the old cows sold for slaughter, the increased number of heifers coming into production, and the decreased demand for cows to expand dairy herds further, as well as the general decline in prices. So long as the price of cows is low, a relatively small number of heifer calves of dairy breeds will be saved. The number of such calves saved in 1930 appears to be about the number normally required for the replacement of aged cows. The number saved in 1931 will probably be substantially lower, and this will begin to be reflected in a smaller number of heifers coming into production late in 1933.

The quantity of milk produced per milk cow was sharply reduced during last summer's drought, but since November 1 has been running above the production on the same dates of the previous year, and on January 1, 1931, averaged about 2 per cent above, most of the increase being in the North Central States. In much of this area oats, barley, rye, and wheat are selling at prices that are relatively lower than the price of butterfat, and farmers appear to be feeding fairly heavily and to be milking more of their cows in an effort to piece out their greatly reduced incomes.

The high level of production thus far in the winter of 1930-31, along with further weakening in demand, caused sharp breaks in the prices of dairy products. These breaks in the prices of dairy products apparently had no effect upon production up to January 1, 1931. Although the lower prices will tend to check the rate of dairy expansion, the price relationships prevailing thus far apparently have not had such an effect. In the South most feeds

are relatively high, and although farmers are keeping more cows, milk production has not increased much as yet. Even in the southwestern portion of the Corn Belt, where producers on December 15 were receiving as low as 19 cents per pound for butterfat in certain localities, there is as yet no apparent tendency for farmers to let the calves do more of the milking. Although the price of butter is below the 5-year pre-war average for this time of year, this will not prevent dairy farmers from feeding liberally in States in which the prices of oats, barley, and rye, for example, are only about half as much as in the period 1910-1914. The December 1 prices of these grains in some States were the lowest reported in any years except 1895 and 1896. So long as income from all other sources is greatly reduced, it is to be expected that farmers will continue to increase the number of cows milked until the spread between the value of the dairy products sold and the value of the feed is reduced materially below that usually prevailing.

DAIRY FEEDS

The sharp decrease in the production of corn and grain sorghums in 1930 does not appear to have materially reduced the quantity of grain and concentrate fed to milk cows, except in the half dozen States most severely affected by the drought. Outside of the drought area, the decrease in corn production has been or will be largely offset by the large 1930 production of oats and barley, by the feeding of a very large quantity of wheat, by reducing the quantity of grain carried over into next season, by decreased exports and increased imports of grain, and by reduction in the numbers of beef cattle and lambs fed for market. The mildness of the winter to date has also permitted some economies in feeding. In the drought area, production per cow has been low since early in the summer but the area chiefly affected has only about 10 per cent of the total milk cows, and the decreases in the intensity of feeding there appear to have been offset by fairly heavy feeding elsewhere. This is particularly true of some of the surplus-grain areas. The total supply of corn and other grains is disappearing from the farms at about the usual percentage rate per month, and there are as yet no signs of any material change in the feed situation before the end of the present feeding period. By the time new grain is available, stocks will probably be drawn rather low and some scarcities may develop locally, but with an increased production of feed grains probable in 1931, there seems no reason to expect any prolonged scarcity of feeds for dairy cattle, and a year from now most producers may still find a margin between the price of dairy products and the value of the feed which will justify feeding grain rather than selling it.

COMPETITION OF DAIRYING WITH OTHER ENTERPRISES

Throughout the eastern margin of the Great plains wheat region, the western part of the Corn Belt, and a considerable stretch of territory south and south-east of the Corn Belt, the dairy enterprise is closely associated with beef production through the use of cattle for both meat and milk. The tendency toward increase in the number of cattle throughout the country makes this sort of dairy production of growing importance as an additional factor leading toward too abundant supply and lowered prices. This effect is particularly of consequence in periods like the present, when farm incomes generally are low.

Throughout the older portions of both the spring and winter wheat regions the recent drastic reduction in wheat prices is stimulating a still further shifting from wheat to feed and forage crops, with a consequent further emphasis upon cattle production with its inevitable expansion of the actual and potential dairy output. This affects western Minnesota, eastern North Dakota and South Dakota, eastern Nebraska, Kansas, and Oklahoma, the southern portions of Illinois, Indiana, and Ohio, together with Missouri, Kentucky, Pennsylvania, and West Virginia. A rather steady increase in the output of dairy production from these areas may be looked for. This tendency has been particularly manifested during the last year and may well be expected to continue important during 1931.

Growing interest in dairying is being manifested in many parts of the Cotton Belt. Although the output as yet represents a small fraction of the total dairy output, it is important as revealing a tendency to adjustment away from the production of low-priced cotton. The present price situation of cotton

appears to offer a strong incentive to turn toward dairying, and is likely to result in a growing interest in dairy development in such portions of the South as are fitted by soil and other conditions for the growing of forage and other feed crops suitable for dairying.

MANUFACTURED PRODUCTS

The production of creamery butter for 1930 is estimated to have been 1,537,764,000 pounds, a decrease of approximately 60,000,000 pounds, or 3.7 per cent under that of 1929. During the first few months of the year production dropped under the production of the corresponding months of 1929, because of a marked decline in butter and butterfat prices, without feed prices showing the same relative decrease. Improvement in butter prices, together with more favorable weather conditions throughout the spring months, caused production to increase considerably. In May, conditions were exceptionally favorable for a liberal milk flow, so that a new high level of output was established for that month. High temperatures, dry weather, and short pastures in the summer months, however, caused production again to drop sharply below that of 1929. With this short summer production reflected in improved prices, and with decreases in prices on concentrated dairy feeds and farm-grown grains, the production of butterfat became relatively more profitable than other farm enterprises, and creamery butter production recovered quickly. Although during July and August production was 11 to 12 per cent less than during the corresponding months of the previous years, during the fall this margin gradually narrowed, until in November and December production was actually greater than in 1929. The present relation of butterfat prices and prices of farm-grown grains, which is expected to continue well into 1931, apparently offers no incentive for any curtailment in the rate of production during the next few months.

Regional production in 1930 showed considerable variation. This variation was due primarily to conditions that were more or less local in nature, such as the intensity and duration of the drought and regional variations in butterfat prices. In some States, principally Kansas, Nebraska, Missouri, the Dakotas, and Montana, decreases in production may be accounted for in part by the low levels to which butterfat prices dropped last winter without a similar drop in bought feed or home-grown grain prices, making heavy feeding for butterfat production relatively unprofitable, and in part to the unfavorable pasture and weather conditions during the late spring and summer months when dairy prices were higher. Low grain and feed prices during the last few months of the year, and the need to piece out the rather meager farm cash income depleted by the effects of the drought and the lowered returns from alternative enterprises, caused farmers in those States to devote more attention to dairying, so that the reduction of production under that of last year gradually narrowed as the year drew to a close, and in some States disappeared altogether. Other States, including Wisconsin, Michigan, and Indiana, actually produced more butter in 1930 than they did in 1929. In these States, however, as elsewhere, production per cow since June was less than in 1929, except towards the close of the year when it rose slightly above the 1929 level. Available evidence indicates a rather marked expansion in the production of creamery butter in the fluid-milk-producing sections during October, November, and December, as illustrated by New York and Pennsylvania, an expansion which is expected to be temporary.

Cheese production was heavier during the first half of 1930 than in 1929, but early in July declined more sharply than usual, and at present is well under a year ago. Condensed and evaporated milk production averaged about 8 per cent less in 1930 than the previous year.

STORAGE STOCKS

The carry-over of creamery butter in cold-storage warehouses at the beginning of the new 1930 storing season on May 1, was 23,000,000 pounds compared with an average carry-over of approximately 7,000,000 pounds, but the marked decline in production during midsummer caused the season's into-storage movement to slow down sharply, and August 1 approximately 6,000,000 pounds less butter was in storage than on August 1, 1929. Faced with uncertain fall and winter markets, dealers early indicated a willingness to move

their stocks into trade channels, which, combined with a lighter production through October, caused the movement out of storage to increase over that of the corresponding period in the previous year, so that on November 1, storage holdings were nearly 29,000,000 pounds less than on November 1, 1929. Following this production was heavier, without a corresponding increase in consumption, even at materially lower retail prices, and on January 1, 1931, total stocks of butter in storage amounted to 63,349,000 pounds, compared with 81,935,000 pounds on January 1, 1930. This was 18,586,000 pounds under a year ago, but was an increase of 11,521,000 pounds above the January 1, 5-year average.

Cheese stocks on January 1, 1931, were reported as 63,362,000 pounds, practically the same as last year, but approximately 5,000,000 pounds greater than the 5-year average. Stocks of condensed and evaporated milk in the hands of manufacturers on January 1, 1931, amounted to 239,393,000 pounds compared with 261,247,000 pounds on the same date in 1930, and a 5-year average of 173,490,000 pounds. Stocks of all dairy products on January 1, 1931, in terms of milk equivalents, were 14.4 per cent lighter than on January 1, 1930.

FOREIGN COMPETITION

Depression about equally severe now prevails in domestic and foreign markets for dairy products. In foreign, as well as domestic markets, the decline in prices of dairy products has been affected more by the falling general price level and weak demand than by any abnormal conditions of supply. Supplies reaching European deficit areas during 1930 did not exceed materially those in either of the previous two years. The total importation of butter into Great Britain and Germany amounted to 1,058,000,000 pounds in 1930 against 1,014,000,000 pounds in 1929 and 963,000,000 pounds in 1928, and the total volume of international trade has shown similar slight expansion. Cheese imports into these same deficit areas amounted to 480,000,000 pounds in 1930 against 478,000,000 pounds in 1929 and 469,000,000 pounds in 1928. With comparatively stable supplies, butter prices at the beginning of the year 1931 are 25 per cent lower than a year ago in both domestic and foreign markets. For Cheddar cheese, prices are nearly 30 per cent lower in London against 23 per cent at Wisconsin primary markets.

In the international trade of the United States, the net imports have declined, if comparison is made on the basis of the milk equivalent of dairy products in all forms, from approximately 1,000,000,000 pounds in 1928, and 780,000,000 pounds in 1929 to 606,000,000 pounds in 1930. The net decline has resulted largely from the decrease by one-half in imports of Canadian cream from 2,970,000 gallons in 1929 to 1,585,000 gallons in 1930. Imports of cheese, mostly of foreign types, for which the market in the United States is comparatively well established, continue to be well maintained at 68,311,000 pounds for 1930 compared with 76,382,000 pounds in 1929. Our foreign trade in butter in 1930, as in 1929, was closely balanced, imports in both years having been exceeded slightly by exports. In 1930 imports amounted to 2,472,000 pounds, and exports to 2,954,000 pounds. Butter imports into the United States are normally confined chiefly to our winter and early spring season. An import basis of prices appeared to have been reached earlier than usual in the fall of 1930, but the recent sharp decline in domestic prices has affected price relationships to such an extent that at the beginning of 1931 best Danish butter is quoted in London at prices equivalent to slightly more than 92-score butter in New York. Accordingly, there is little prospect of price relationships that would give rise to material importation during the remaining winter or spring months. With present indications of increased domestic production, some exportation of butter now appears more probable than importation. Exports of condensed and evaporated milk which have been falling off gradually during recent years, will tend to be stimulated by the lower domestic prices.

DEMAND

The depression of 1930 was accompanied by marked decreases in the amount of money spent by consumers for dairy products. Estimated consumption of butter in 1930 was slightly less than in 1929, regardless of the fact that retail prices were 15 per cent lower.

During the first 11 months of 1930, trade output of cheese declined 1.7 per cent and retail prices were 7 per cent lower than in the preceding year. The consumption of condensed and evaporated milk during 1930 decreased 3.8 per

cent, with prices about 10 per cent lower. Consumption during the last quarter of 1930, however, tended to increase, probably because of a shift from fluid milk and cream to concentrated milk for household purposes. Current trade reports during the later part of 1930 indicate a considerable decrease in fluid-milk sales.

Low prices of butter during the summer of 1930 stimulated the storage of butter, even though the previous season was unprofitable. The unusual price declines during the period following the into-storage movement, however, made storage operations again unprofitable. Because of this it seems probable that storage operators will be reluctant to store butter during the coming storage season except at decidedly lower prices than prevailed during the 1930 into-storage season. With the depression in business continuing, no marked increase in demand is in prospect for the next few months.

PRICES

The decline in butter prices, which started in the latter part of 1929, continued during 1930. The average price of 92-score butter at New York during 1930 was 36.5 cents per pound, compared with 45 cents in 1929, and a 5-year average of 45.9 cents. The decline in price was most drastic in December, 1930, when the price declined about 8 cents in four weeks, reaching the low point of the year. Average prices in December were the lowest for that month since 1910, and the 1930 average was the lowest since 1916. Cheese prices were low throughout all of 1930, averaging 3.8 cents lower than in 1929, and 4.9 cents lower than the 1925-1929 average.

Producers who supply fluid milk for city trade also received lower prices in 1930 than in 1929, and retail milk prices are now lower than a year ago in most of the important consuming centers. Many of the principal milk sheds report unusually heavy surpluses at present for this season of the year. With declining butter prices, butter substitutes have been reduced in price and output. With more dairy cows on farms, with larger numbers of heifers coming into production, and with production of milk per cow maintained by low feed prices, the outlook is for increased production of dairy products and continued low prices through most of 1931.

LONG-TIME DAIRY OUTLOOK

Adjustment in dairy output to meet changes in demand normally comes from regulating culling and replacements and in certain areas by changing the degree to which dual-purpose and beef cattle are used for milk. Several conditions apparent in American agriculture will probably tend to prevent, in the present situation, the usual prompt reduction in supply to meet curtailed demand and to keep the total output relatively larger during the next few years than during recent years. First of these is the lower return from a number of other farm enterprises, which has been in large measure responsible for the recent expansion in dairying. With the apparently contracting outlet for American pork products abroad, with sheep prices low, and with an expanding beef-cattle enterprise, livestock production for meat is likely to be more generally supplemented by dairy production as a means of getting added income. Similarly, new developments in the production of wheat tend to reduce its importance in the older wheat-producing areas and again to turn more of the farm resources into dairying. Throughout the eastern half of the Cotton Belt, as well as the more hilly parts of the western portion, competitive conditions are such as to cause farmers to look for new enterprises to replace or partly to supplement the older cash crops.

Another condition making for the continued larger dairy output is the general turning, throughout the eastern part of the United States, toward a larger acreage of forage crops, particularly those used as pasture and hay. Depleted soil fertility, the growing problem of erosion, and the cheapening of such grain crops as oats, tend to make a distinctly larger place for legume crops. This development inevitably brings a greater emphasis upon cattle with a correspondingly higher capacity for dairy production.

The steady reduction in the number of work stock during the last 12 years is expected to continue, thus reducing still further the demand for feeds for their support. This will tend to counteract any reduction in feed-grain acreages caused by the shift to forage crops, and to keep dairy feeds at low prices.

In view of all of the above factors, the resistance to the dairy enterprise, because of its heavy demands for labor and the confining nature of it, will, until wages and profits rise again, probably be less important in restricting dairy output than it has been in the past.

On the demand side the considerations are somewhat more encouraging. Population growth will make for a steady, although slow, expansion in the domestic demand for dairy products. This expansion, however, is nearly offset by the evident increase in the output per cow. We may reasonably expect, also some further increase in the per capita domestic consumption of milk and other dairy products during times of normal business conditions, particularly in certain parts of the country where the rate of consumption is now low.

The readjustment in other farm enterprises, which may be expected during the next few years, should in a measure relieve the present serious competition in the domestic dairy industry. If more satisfactory prices for other farm products are realized, we may look for a shift out of dairying on the part of many producers who have entered the field as an emergency measure. However it is very doubtful whether, during the next few years, domestic butter prices will be maintained at the substantial margin above the foreign market that has obtained through most of the last 10 years. In all periods of depression, additional effort is forthcoming to reduce costs of production through the introduction of efficiencies. This may well be expected to happen in the next 10 years on our American dairy farms. Those interested in the welfare of the industry may well make this a major consideration. This means greater care in the selection of milk cows, a greater amount of culling out of low producers, and much more skill in the feeding and general management of the dairy herd.

POULTRY AND EGGS

Although the number of layers and the production of eggs in 1931 promises to be somewhat less than in 1930, the prices of eggs during the first half of the year will be lower than for the same period in 1930. The demand for eggs for storage this spring is likely to be weak, in view of the losses to storage operators during last year; and a decrease in egg requirements from hatcheries and a weaker demand from breaking plants may be expected. Improvement in the price trend for eggs may be expected, however, for the last half of the year. In view of the prospective smaller number of pullets that will be raised this year, egg production will probably be lighter next fall and winter. As storage stocks in 1931 will also be lighter than in 1930, egg prices should show at least the normal fall seasonal rise, although they will probably not reach the high peaks of recent years.

With a short supply of poultry in storage at the beginning of 1931, and with the likelihood that market receipts of poultry for the coming spring and summer will be less than a year ago, poultry prices for the first half of 1931 should be somewhat above those for the first half of 1930. Lighter marketings in the fall of 1931 as a result of the smaller number of chickens that will be raised this year, supported by a rising level of egg prices, should give additional improvement in the 1931-32 poultry markets.

NUMBER OF CHICKENS RAISED

The number of chickens raised in 1930 up to July 1, judging from the reports of crop correspondents for that date, was about the same or a fraction less than in 1929. The preliminary returns as of January 1, 1931, indicate that the total number raised during the entire year 1930 was somewhat less than in 1929, and that the number of all chickens on farms on January 1, 1931, may be slightly less than a year earlier.

HENS AND PULLETS

The average number of hens and pullets of laying age in farm flocks on January 1, 1931, according to the monthly report of crop correspondents, is 89.6 compared with 90.6 last year, for the United States as a whole. There were decreases of 1.2 birds per flock in the North Central States (which carry about half of the hen population of the United States), and decreases of 3 birds per flock in the North Atlantic States, and 2.2 in the South Central States. Increases were shown of 0.5 bird in the Southeastern States and 4.4 birds in the

far Western States. The January 1, figures of layers are consistent with the earlier reports, of August 1 which showed about the same number of hens as the previous August; and with that of December 1 which showed 61 pullets per farm on that date compared with 61.4 in December, 1929. The trend of numbers during recent months and the present (January, 1931) low price relation of eggs to poultry as well as of egg prices to feed prices suggest that the number of laying birds in farm flocks during the spring and summer laying season in 1931 will be slightly less than last year.

The total number of chickens in farm flocks at the beginning of 1930 was about 5.6 per cent more, and the number of hens and pullets of laying age about 3.5 per cent more than a year earlier. The relative number of hens and pullets compared with the corresponding months of the previous year declined gradually until on September 1, they were slightly less than on that date in 1929. Although a sharp increase over 1929 in the number of hens and pullets of laying age was reported for October 1, 1930, this was apparently due to the earlier entry of pullets into the laying flock in 1930. The number of hens and pullets compared with numbers in 1929 again declined each month from October; on December 1 it was only 0.3 more per flock, and on January 1 it was 1 less per flock, than a year earlier.

LAYINGS IN 1930

The layings during 1930, per hen and pullet in farm flocks, were 1 or 2 per cent less than during the previous year. With the number of layers somewhat greater during the first half of 1930 than in 1929, the total layings for the year 1930 were about 1.3 per cent greater. But they were 3.8 per cent greater in the important producing area of the North Central States. Although only 4 months out of the 12, in 1930, showed heavier layings per flock than in 1929, the exceptionally heavy layings reported on March 1, 1930, over that date in 1929 overbalanced the tendency to slightly lower layings during most of 1930. Beginning with November, layings per flock have been as high as or higher in each month than a year earlier, and for December, 1930, and January, 1931, they were one or two eggs per flock higher than for either the previous year or for the 5-year average for these months.

Although this increase in relative layings in December and January may be to some extent due to the greater maturity of the laying pullets in the flock, and to some possible influence of a larger proportion of wheat in the poultry ration, it also reflects the influence of a mild and open early winter. With a small decrease in number of laying birds compared with 1930 as shown by the January preliminary returns of crop reporters, and with some further decreases in number probable, the farm production of eggs this season should be less than last, if layings per bird are average.

FARM EGG PRICES

The farm price for eggs was below the 1923-1927 monthly average every month of 1930 except during a temporary shortage in February, with the lowest December price since the beginning of the record in 1910. Owing to low feed prices, however, the relation of the price of eggs to the price of feed for poultry was more favorable than the 1923-1927 average up to June; but from June onward the relation was below average, with the lowest December relation in the 21-year record except in 1917. With the probability that an unfavorable relation of egg prices to feed costs will continue, at least during the early part of 1931, there appears to be but little incentive for more than ordinary care and feeding during the remainder of the winter and the early spring of 1931.

MARKET RECEIPTS OF EGGS

The increased production of eggs on farms in 1930 was reflected in the receipts of eggs for the year at the four principal terminal markets, which were 15,401,000 cases compared with 14,943,000 cases for 1929—an increase of about 3 per cent. The larger proportion of the increased receipts came during the spring and early summer months when production was unusually heavy. In July receipts began to decline rather sharply, as a result of the adverse effects of the drought and accompanying high temperature upon egg production in the most important commercial egg-producing States in the Middle West. Market receipts in August were the smallest for that month since 1920.

Some recovery occurred in September because of an increase in farm layings as a result of more favorable production conditions, and with an early lay from the 1930 crop of spring pullets, receipts for the remainder of the year were considerably in excess of corresponding months for 1929.

CONSUMPTION OF EGGS IN 1930

The urban consumption of eggs during 1930 was generally unsatisfactory, especially when considered in relation to the total supplies available. The consumption of eggs was around 6 per cent less during the first part of the year because of the restricted purchasing power of consumers and the failure of retail egg prices to decline as rapidly as wholesale prices. With the later big drop in retail egg prices below seasonal levels, and, in spite of the increasing restriction in general purchasing power of consumers toward the close of the year, consumption of eggs during October, November, and December exceeded that of the same months of 1929 by about 8 per cent.

STORAGE STOCKS OF EGGS

Relatively heavy production during the late winter and early spring of 1929-30, weak demand at prevailing prices for immediate consumption, and the prevailing impression that the general economic situation would improve during the last half of the year resulted in a rapid accumulation of eggs in storage during the first half of 1930. On August 1, a total of 11,202,000 cases of shell eggs was reported in storage, the largest ever recorded. The slowing-up effects of the drought upon egg production during July and August caused the out-of-storage movement of eggs in 1930 to begin a little earlier than usual but with an improvement in production conditions in September, the out-of-storage movement during that month failed to show the normal seasonal rate of increase over August. With a fall production that exceeded expectations, owners of cold-storage eggs found more than the normal fall competition from fresh eggs, and in order to move their stocks were forced to reduce their prices radically, which resulted in a material increase in consumption during the last three months of the year. Stocks of eggs in storage on January 1, 1931, were still exceptionally large for that date amounting to 1,891,000 cases as compared with 704,000 cases on the same date the previous year and 1,156,000 cases for the 5-year average.

No data are available regarding the total quantity of eggs frozen in the United States each year. The seasonal peak of cold-storage holdings of frozen eggs on August 1, 1930, amounted to 116,000,000 pounds as compared with 91,000,000 pounds on the same date in 1929, and 70,000,000 for the 5-year average.

The net reduction in storage stocks of frozen eggs from August 1, 1930, to January 1, 1931, amounted to 33,000,000 pounds as compared with a reduction of 38,000,000 pounds for the same period during the preceding year. The smaller net reduction of stocks may be accounted for by the fact that some manufacturers of food products that use eggs because of the exceptionally low prices at which shell eggs were available, turned to the use of shell eggs in place of frozen eggs; also because of economic conditions there was undoubtedly some decrease in the demand for mayonnaise and bakery products that contain eggs. (Thirty-five pounds of frozen eggs are equivalent to one case of shell eggs.)

EXPORTS AND IMPORTS

The total export of eggs is relatively unimportant. Exports of shell eggs in 1930 were 619,000 cases as compared with 402,000 cases during the preceding year. Although this represented an increase of 54 per cent over exports in 1929, the 1930 exports did not equal those for 1928 and amounted to less than seven-tenths of 1 per cent of the total United States production. In addition to the exports to the usual American destinations (mainly Cuba, Mexico, and Argentina), a few shipments were made to European markets during the last three months of the year but as prices in those markets were also low, such shipments did not prove especially profitable.

Imports of frozen eggs for the year 1930 declined sharply. From January to May, inclusive, imports were unusually heavy, but from June onward they were well below 1929 for the remainder of the year. For the year 1930

imports of frozen whole eggs amounted to 2,612,000 pounds as compared with 9,180,000 pounds for 1929. Frozen yolks were imported to the extent of 1,684,000 pounds as against 4,401,000 pounds in 1929.

Imports of dried eggs were not very different from those of 1929. Imports of dried whole eggs were less by approximately 400,000 pounds. Imports of dried yolks were about the same quantity as in 1929.

Imports of shell eggs for the year 1930 were about the same as in 1929 and were of no special significance.

EGG PRICES

Wholesale egg prices during the spring and summer of 1930 were low primarily because of low consumption. With large storage stocks and plentiful supplies of fresh eggs in the fall and winter, prices failed to make the normal seasonal advance during the last half of 1930.

The 1931 spring prices are likely to be much below those of the spring of 1930. Present conditions indicate a weak demand on the part of storage operators during the coming spring, because of heavy losses incurred during the fall of 1930 and this winter on eggs stored last spring. With relatively heavy stocks of frozen eggs on hand as of January 1, 1931, the demand for eggs by breaking plants will be less urgent than last year. Further, it is expected that there will be a considerable decrease in hatchings this year by commercial hatcheries.

The outlook for the fall and winter of 1931-32 is a little more encouraging. With the prospective decrease in number of pullets raised this year, laying flocks next fall will probably be smaller than in the fall of 1930. Smaller cold storage holdings will also afford less competition to the fresh egg receipts. Prices, should therefore, be above those of the corresponding period in the preceding year. Any improvement in the economic situation during the last half of the year will be an added factor in strengthening egg prices.

POULTRY RECEIPTS

Receipts of dressed poultry at the four markets, New York, Boston, Philadelphia, and Chicago, for 1930 were about 3 per cent less than for 1929. But receipts from January to June, inclusive, were unusually heavy—about 12 per cent larger than for the corresponding period of the preceding year. After July 1, however, receipts were less than for comparable months in 1929. This does not necessarily imply any particular shortage in fall receipts, for although less than a year earlier, they are similar to the fall receipts of 1927 and 1928, which were comparatively heavy. Although the consumption of chickens on farms was evidently considerably heavier in 1930 than in 1929, the shortage in receipts was due in considerable part to the variation in weights per bird when marketed. The stunting effect of the drought making it difficult to put on a satisfactory market finish, is believed to have been a primary factor in causing the market receipts of dressed poultry, on the basis of weight, for the last half of the year to be less than in 1929.

COLD-STORAGE POULTRY

The cold-storage year of 1929-30 was a rather disastrous one for those who stored poultry. Poultry taken from storage during 1930 as a rule sold several cents per pound below its cost when put into storage. With heavy losses behind them and with uncertain economic conditions before them, many operators who ordinarily store large quantities of poultry were very conservative in their purchases during the fall of 1930. Net increase of poultry in storage to January 1, 1931, from the low point of September 1, 1930, amounted to only 62,000,000 pounds as compared with an increase of 100,000,000 pounds for the same period in 1929. Total stocks of frozen poultry on January 1, 1931, amounted to about 105,000,000 pounds as compared with 141,000,000 pounds on the same date in 1930, and a 5-year average of 125,000,000 pounds. Receipts at the four markets during January, 1931, have been relatively light, so that in all probability there will be but little increase in total stocks by February 1, the normal high point of storage stocks for the year. Considerable encouragement therefore is offered poultry producers that in the marketing of their 1931 crop they will not have to compete with as large a carry-over of frozen stock as they did in 1930. This is particularly true of broilers, of which the storage stocks are nearly 40 per cent less than last year and about 20 per cent less than the 5-year average.

CONSUMPTION OF POULTRY IN 1930

Consumption of poultry during 1930 was heavy. It is estimated that approximately 8 per cent more poultry was consumed by the urban population than in 1929. This substantial increase was due to a radical reduction in prices, both wholesale and retail, so that poultry competed to a greater extent with other meats. The adjustment in prices enabled the trade in the four markets to handle a heavy increase in current receipts during the first six months of the year and to dispose of approximately 62,000,000 pounds of frozen poultry during the out-of-storage season of 1930 as compared with only 41,000,000 pounds during the out-of-storage season of 1929.

FARM PRICES OF CHICKENS

During most of the months in 1930 the farm price of chicken averaged about 4 cents below that of the corresponding months of 1929. In the first half of the year the seasonal price advance was neither so great nor so sustained as is usually the case, largely because of heavy farm marketings and exceptionally large storage stocks accumulated in the fall of 1929. The losses previously suffered by storage operators weakened the demand from that source during the last half of the year, at a time when much of the total yearly production must necessarily be stored, and fall prices remained low. The prices of competitive meats, such as beef, veal and lamb, were also depressing factors in keeping poultry prices low throughout most of last year.

POULTRY PRICE OUTLOOK

It now seems likely that prices of these competitive meats will continue low during the early part of 1931, but with storage holdings of poultry relatively low and receipts probably about average or less, the normal seasonal price advance this spring should occur. Indications are that a profit will be made on present stocks of stored poultry, so that demand for storage in the fall of 1931 should be stronger than in 1930. As receipts are not likely to be excessive, fall prices should continue relatively high. Any recovery in business conditions would improve the demand for meats, including poultry, but it is not to be expected that prices of other meats will give any such support to chicken prices during the next few years as during the favorable years 1928 and 1929.

TURKEYS

Notwithstanding the decrease in numbers of turkeys produced in 1930 compared with 1929, the tendency during recent years toward an upward trend in turkey production seems destined to continue, because of the increasing number and size of specialized flocks handled on a commercial scale by producers who use modern methods. Improved methods of incubating and brooding are reducing the cost of raising turkeys and making it possible to sell them at prices nearer to the market price of chickens. This narrowed price differential, if continued, will increase the consumption sufficiently to absorb a material increase in production.

Regarding the 1931 outlook, no definite conclusion can be drawn because of the general lack of information, coupled with the particular uncertainties of turkey raising due to weather conditions. Although largely overcome by those using the improved methods of brooding the losses from unfavorable weather are still an important element in the number of turkeys raised from the ordinary small flock of poults allowed to range with the hen. The extremely light storage reserve of turkeys and the prospects of light imports are favorable for the 1931 turkey producer.

Farm prices for turkeys for the 1930 Thanksgiving market were about 7 cents lower per pound than in 1929 in spite of the decrease in the size of the crop. The lower wholesale buying prices for the Thanksgiving market were caused partly by apprehension regarding probable weakness in consumer demand because of prevailing industrial conditions and partly by somewhat inferior quality. Retail Thanksgiving prices were at a slightly lower level than in 1929. At these prices consumer response was good and market supplies moved well. The result of the Thanksgiving transaction increased confidence for the Christmas trade. Although country buying prices for the country as a

whole were about the same in the first half of December as in November, the reduction below the previous year was less than in November, being only 3 or 4 cents lower, and improvement in prices being paid was evident in the important producing States of the Southwest by mid December. Improvement in some other commercial areas was recorded later in the month. Retail prices also advanced in December but the advance did not appear actively to reduce buying, as sales were satisfactory and supplies were closely cleaned up. Some markets reported actual shortages in wholesale channels just before Christmas.

As a result of this close clean-up, reserve stocks in storage were very light on January 1, amounting to only 4,581,000 pounds. This is the lowest figure for this date since 1917 (the first time that a January 1 figure became available), and the quantity is less than half of the January 1 average for the last five years. One reason for the light stocks was the fact that imports in 1930 were small, being little more than half of the 1929 figure and not more than 1 or 2 per cent of the total United States production. Imports for 1931 will also probably be limited.

The higher prices now prevailing in the market may result in a larger proportion than usual of the turkey hens now on farms being held as breeding stock for the 1931 crop.

Shortage of reserve supplies is likely to mean that less effort will be made to push the retail sale of turkeys during the in-between season. To this extent it may prove to be an unfavorable factor, since one of the most evident ways by which the consumption of turkeys can be increased is by lengthening, particularly into the new year, the period in which turkeys are in demand. A market demand is developing especially in the East for early-hatched "squab" turkeys weighing 5 to 9 pounds, for sale in the early fall prior to Thanksgiving.

The 1930 turkey marketing season was more satisfactory in its outcome than prevailing sentiment at the time indicated, if the prices received for other farm products are considered. Although the average farm price received for turkeys during November and December was only about 70 per cent of the 5-year average for the years 1923-1927, the price considered in relation to the price of feed for poultry was about 90 per cent of the 5-year average for these months. Although recent turkey prices appear abnormally low when compared with the relatively high price trends for poultry during the 1923-1927 period, they appear much less discouraging when considered in comparison with trends over an earlier and possibly more representative period. Turkey prices in both November and December, 1930, were almost 50 per cent higher than the pre-war average (1910-1914) for these months, and December general farm prices were about the same as pre-war prices. Again, although the farm price index for turkeys in November and December was about 20 per cent below the corresponding months in 1929, chicken prices were also down about 20 per cent, and the general index of all farm prices was down about 26 per cent during the same months.

In about three years out of four, the farm price of turkeys has been higher for Christmas than for Thanksgiving. This suggests that ordinarily producers should market only their better matured birds for Thanksgiving. By holding the others for later market the birds will be heavier and of better quality and producers are likely to receive a better price.

In general it appears that if there is any increase in the 1931 crop as compared with 1930 it will be the result, mainly, of further increases in specialized turkey growing which has continued to gain in favor. The new methods of raising turkeys on a commercial scale have been very successful and further improvements are continually being made, such as improved feeding and in increased number of hatching eggs per hen. Day-old poults, produced by hatcheries in increasing numbers, can be shipped long distances, can be sold at lower prices than formerly, and are becoming more of a factor in increasing size of flocks and total production. The further introduction of these methods should lead to a decrease in cost of raising and to increases in production as long as obtainable prices prove profitable. It is probable, therefore, that the present upward trend in production will continue for some years, but growers should guard against rapid expansion of production unless due consideration is given to the extension of market demand.

HAY AND PASTURE

A continuation of the replacement of timothy and other tame grass hays with alfalfa, clover, and other legumes is suggested in the outlook for farm and market hay. The 1931 production of timothy and clover will be reduced somewhat more than usual as the result of the 1930 drought, and this shortage, particularly of clover, will tend to strengthen the market for alfalfa and clover for the coming year at least. Increased seedings of annual legumes and grain hay for local consumption will be necessary this year to overcome the shortage of hay in the drought area. The increase in the world acreage devoted to grain crops and in large-scale farming is making it more difficult to obtain satisfactory returns from grains produced on rough and hilly lands or other high-cost-of-production lands in the United States. In view of the shortage of pastures in many of these high-cost-of-production areas conversion of these lands to permanent pasture, whenever possible, seems desirable.

The 1930 hay crop of 94,767,000 tons was the smallest harvested since 1918 and was only about 80 per cent of the relatively large crop of 1929. The drought was particularly severe on the 1930 timothy and clover crops, which were the smallest for any of the last 13 years for which comparable statistics are available. The 1930 alfalfa and wild-hay crops, although not far below those of 1929, were the smallest since 1926. The total 1930 crop of all hay, together with the carry-over of old hay on May 1, made a total supply for the 1930-31 feeding season of only 89 per cent of average, whereas the numbers of livestock to be fed were about 98 per cent of average. These comparatively short hay supplies, together with the unusually early feeding of hay in the drought area in the fall of 1930 indicate a relatively small carry-over of hay on May 1, 1931.

The December 15 average farm price in the United States for all hay was slightly higher in 1930 than in 1929. Timothy advanced from \$11.57 per ton on December 15, 1929, to \$14.58 on December 15, 1930, and clover from \$11.97 to \$13.52. Alfalfa declined during the same period from \$14.41 to \$12.52, and prairie from \$8.31 to \$7.31. The quality of timothy hay in 1930 was somewhat better than in former years, upland prairie was about the same, and alfalfa hay was somewhat poorer.

Reductions in freight rates between certain producing and consuming areas, already made or in prospect, may modify marketing channels for hay during 1931. Considerable reductions have been made this winter from some parts of California and Arizona to all points east. This may result in alfalfa from those States competing with hay from other areas in all southern States from Texas to Florida, but probably still will not enable them to compete for northern markets. Some important freight-rate changes in the territory east of the Rocky Mountains and north of an irregular line running east and west through St. Louis probably will become effective in the spring or early summer under recent decisions of the Interstate Commerce Commission. No increases in rates are permitted but reductions are provided from points west of the Mississippi River to points east of the Ohio-Pennsylvania line which, in some instances, amount to \$4 or \$5 per ton. This will permit alfalfa grown in the Great Plains to compete more advantageously in eastern markets with that from the producing territories east of the Mississippi. Rates from the entire territory involved also will be reduced to points in central New York, Pennsylvania, Maryland, and Virginia, thus enabling this region to make purchases at relatively lower prices than in the past.

There has been a marked downward trend in the acreage planted to grass hays, particularly timothy, during the last 10 years, and the acreage of prairie and marsh hays has declined about 10 per cent during the same period. This decreased acreage of grass hays has been offset, however, by increased acreage of legumes, especially alfalfa, in the important dairying sections. Thus the total hay acreage has remained fairly constant during the last ten years.

Seeding for the 1932 hay crop will probably be such as to continue the shifts in acreage that have been going on steadily during the last several years. It will be necessary to supplement these seedings with a considerable increase in the acreage of annual hay crops in the drought areas to balance the loss of 1930 seeding. Such an increase in annual hay crops, however, is not likely to cause any material change in the tendency to shift to the increased production of legume hays.

Alfalfa acreage in the northern dairy belt, consisting of the States of New York, Michigan, Wisconsin, and Minnesota, has increased from 392,000 acres in 1920 to 1,863,000 acres in 1930, or an increase of 1,471,000 acres. On the other hand, the alfalfa acreage in Kansas, Oklahoma, and Nebraska has declined from 2,819,000 acres in 1920 to 2,118,000 acres in 1930, a decrease of 701,000 acres. This decline appears to have been checked during the last year or two in Nebraska and Oklahoma; but no immediate appreciable recovery of the productive acreage in any of these three States is likely because of difficulty in the control of bacterial wilt and the gradual reduction of subsoil moisture by the alfalfa plant in many of the drier areas to a point below which the plant does not thrive.

The outlet for timothy and prairie hays has diminished steadily during the last several years with the substitution of mechanical for animal power and changes in feeding methods. The increase in price for these kinds of hay this season is probably due to the general shortage of these types of hay, and a return to normal production would result in lower prices and a draggy market. Therefore, no increase in acreage of these hays is warranted. But an increase in alfalfa, clover, and other legume hays is warranted, in most sections, because of the increase in the number of cattle and sheep during recent years. Some increase of alfalfa, clover, and other legume acreage can be made in the Central States and in limestone valleys in the Northeastern States where better returns may be expected from legumes than from corn or wheat. In many localities in the North Central and Northeastern States large numbers of dairy cows are undersupplied with legume hays which could be used to replace a large part of the more expensive high-protein commercial feeds. At present the far Southwest, including California, is raising considerably more hay than is needed for local consumption, and high freight rates to other regions, together with uncertainty regarding vessel space for movement by water to the east coast make prospects of obtaining satisfactory markets rather uncertain if the hay acreage is increased materially.

The conversion of the poorer timothy and grass-hay acreage into pasture or legume hay meadows, especially in dairy sections and those sections that produce hay for southern or city markets, is suggested by the long-time outlook for both farm and market hay. Many farmers who have cattle or sheep may also find it more profitable to seed some of their crop land to permanent or temporary pasture. These shifts should be especially desirable in those States east of the Mississippi River where much rough or hilly land is now farmed to general crops. In these States many dairy farmers have a tendency to overgraze their pastures, and, therefore, feed large quantities of high-priced concentrates during the pasture season. The large increase in world acreage devoted to wheat, corn, and other grains and the relatively low cost of production through increased mechanization of farming in the level areas of the Central West are likely to result in prices which will make it increasingly difficult to produce crops on these hilly lands in competition with low cost of production areas. Throughout these areas pastures that are properly fertilized, and not overgrazed, will usually give better returns than when planted to grain crops.

FEED CROPS AND LIVESTOCK

During the 1931-32 crop season feed crop-livestock ratios will probably be favorable to producers of livestock and livestock products, since feed-crop production will probably be on a high level in relation to the numbers of livestock on farms.

Total production of the principal feed crops in 1930 was greatly reduced by drought, but a near-record acreage was devoted to these crops. Although the combined 1930 production of feed grains was 15 per cent below the 1924-1928 average, the acreage devoted to these crops in 1930 was larger than the 1924-1928 average by 4,800,000 acres, or 3.6 per cent. Production of hay was 12 per cent below average, and the acreage was smaller by 800,000 acres, or 1.1 per cent. The combined acreage of grain and hay was the largest since 1923.

The number of livestock on farms on January 1, 1931, expressed as animal units, was practically the same as a year earlier. Reductions in the numbers of horses, mules, and hogs were offset by increases in the numbers of cattle and sheep. The combined livestock population has tended downward practically without interruption since 1919, and on January 1, 1931, was 2 per cent below the 1925-1929 average.

Production of corn, oats, barley, and grain sorghums, the principal feed grains in 1930, was 2,196 pounds per animal unit, which is 13 per cent below the 1924-1928 average. Production per animal unit in 1930 was greater than in 1919 or 1924, the first a drought year and the second a year of heavy frost damage to corn. Production of hay was 2,613 pounds per animal unit, 12 per cent below the 1924-1928 average, but larger than in 1919, 1920, or 1921. There has, however, been a distinct upward trend in production of grains and hay per animal unit since 1919, reflecting the changes in the type of feeding and in the kinds of animals being fed, as exemplified by the increasing proportion which milk cows constitute of the entire cattle population and the larger quantity of feed utilized by a cow in milk than by one not in milk.

The level of prices of the 1930 feed crops from the beginning of the crop season to January 1, was 96 per cent of the pre-war (1910 to 1914) average while the corresponding level for livestock and livestock products was 125 per cent. For the 1929 crops the level was 110 per cent, and for the 1919 livestock the level was 146 per cent. The ratio of feed crops prices to livestock prices is, therefore, 76 per cent which is somewhat more favorable than the 80 per cent ratio for the crop season 1929.

The present favorable feeding ratio, will probably result in heavy feeding during the remainder of the winter, considering the short supplies. Although the mild winter has permitted economical use of feeds and maximum substitution of straw and rough forage, and similar economies have taken place in the drought area, it appears probable that the carry-over of old crops into the new season will be relatively low. Early feeding of 1931 crops will be necessary in many localities. As a result it is to be expected that, weather permitting, a large acreage of feed crops will be seeded or planted in 1931. With average yield, production should be much greater than in 1930 and above average because of the prospective increase in acreage. Even with the prospective reduced carry-over of old crops, and early feeding of some new crops, the supplies of feed crops should be large in relation to livestock numbers and the ratio of livestock prices to feed-crop prices for the 1931-32 feeding season should be even more favorable than during the current season. Although the total livestock population may be increased by a cyclical upswing in hog numbers and a continued increase in cattle numbers, there is every reason to expect continued reductions in work stock, and the beginning of a cyclical decline in the number of sheep followed a few years later by a similar decline in cattle numbers.

A continuation of the relatively favorable feeding ratios seems dependent to a material extent upon the course of hog numbers. If the tendency of the last few years to minimize the changes in numbers of hogs is continued into the next two years, a more stable income from the livestock-feeding industries should result.

FEEDSTUFFS

Price of by-product feeds are expected to continue at about present levels during the remainder of this winter season as but little improvement in demand is anticipated. Short supplies of corn, grain sorghums, and hay may become more apparent and more keenly felt as the winter season progresses, but it is improbable that feedstuff prices will advance materially from their present low levels because of the material reduction in agricultural income. Oats, barley, wheat, and other home-grown grains will continue to be fed in relatively large quantities to offset the shortage of corn and grain sorghums, and silage, fodder, and straw to make up for the shortage of hay. Unusually severe weather, during late winter and spring, low carrying capacity of spring pastures, or poor condition of early feed-grain crops, might strengthen market demand and bring about some advance in prices of by-product and commercial feeds.

The market for by-product feeds during the remainder of the feeding season will be affected somewhat by the demand and supply situation in feed grains and hay. The 1930 aggregate supply of the major feed grains, corn, oats, barley, and grain sorghums at the beginning of their respective crop seasons was about 12 per cent smaller than on the corresponding dates last year and 15 per cent under the 5-year average, 1924-1928. The shortage was principally in corn and grain sorghums and was in districts in which only a small proportion of the cattle and hog numbers, or milk supply is generally produced. Utilization of wheat as feed has been much heavier than a year ago, and the

consumption of corn, oats, and barley (considering aggregate supplies) was relatively no greater this fall and early winter than during the same period a year ago. A continuation of this rate of farm consumption is not likely to result in an acute shortage of home-grown grains.

A short 1930 hay crop was produced because of low yields on a smaller acreage. The reduction was largely in tame hay, principally timothy and clover. Market takings of all hay have been unusually heavy, because of reduced pasturage this fall. Supplies of timothy and clover remaining for market during the remainder of this season are relatively smaller than of other classes and in many of the larger producing States are the smallest in years. Supplies of alfalfa and prairie hays yet available are apparently not much different from those of the past several seasons.

Supplies of by-product feeds this season will probably be slightly smaller than those of a year ago. Production of wheat mill feeds has been about as large as last year with the increased outturn of offal per barrel of flour produced about offsetting the small wheat grindings. The supply of domestic linseed meal is expected to be much larger than last season, because of the larger flaxseed crop.

Production of cottonseed for the 1930-31 season has been placed at 6,328,000 tons compared with 6,590,000 tons for last season. Of the total supply last season 5,021,657 tons were received at mills and on the basis of the usual relationship between supplies and marketings about 4,580,000 tons of seed would be available for crushing this season. So far this season, 3,135,000 tons have been crushed and 991,000 tons were on hand at mills January 1, so that marketings or receipts by mills from January through July, 1931, may be only about 800,000 tons compared with the actual marketings of 1,038,000 tons in the corresponding period of 1930. Despite the smaller seed outturn, production of cottonseed meal from August through December has been heavier than a year ago because of the earliness of the crop and a better meal demand, especially from the drought area. Assuming a 1931 carry-over about as large as last August, supplies of meal available from mills for the remaining seven months this season will be somewhat smaller than for the same months of 1930.

Wet-process corn grindings, from which gluten feed and meal are the principal by-product feeds, declined sharply in the season ended with October, 1930, and totaled only 77,500,000 bushels compared with the record grindings of 88,200,000 bushels in 1928-29. The November, 1930, grindings were the smallest for that month since 1924, and the December grindings, since 1922. Grindings for 1930-31, however, may not be greatly different from those in the 1929-30 season. The production of alfalfa meal has been slightly smaller than that of a year ago and the unusually wide spread between bran and alfalfa meal prices, which tends to reduce market inquiry for alfalfa meal, may continue to cause grindings during the remainder of the season, January through June, to be somewhat smaller than during that period last year.

A part of the deficiency of about 12 per cent in feed supplies has been offset by heavier imports and smaller exports. United States, for the first time in many years, is on a domestic basis. The quantity of corn, oats, and hay imported exceeds by large amounts the quantities brought in last year. Exports of feedstuffs have been light, but imports, with the exception of oil cakes and meals, have been heavier than last year. Rather mild weather during the fall and early winter of the 1930-31 season has made possible more dependence on pasture and range, resulting in some saving of feed. The good condition of winter wheat has afforded some grain grazing, and a larger rye acreage has been seeded, especially in those areas in which pastures were short last fall and in which the young growth may be utilized for early spring pasture.

The slow market demand for feed grains and feedstuffs this fall and winter reflects, probably more than any other single factor, the depressed condition of agriculture and allied industries. Hay prices, however, reflect a fair demand for the reduced supplies. Feed crops were produced at relatively high costs and have sold mostly at steadily declining prices. Farm income, which largely determines the purchasing power of those who buy by-product feeds, is only about three-fourths of last season, and is the smallest since the 1921-22 season. The lowering of farm income and, in some districts, stringency of credit and bank failures, have forced many feeders to practice numerous economies with home-grown and purchased feeds and have reduced buying to immediate needs. Present prices of farm products are so low as to suggest but little improvement in farmers' ability to buy feeds until new crops are marketed.

Prices of by-product feeds have made even greater declines than feed grains and hay. Prices of feedstuffs as a group at the larger distributing markets declined in December to the lowest levels since before the World War. Prices of bran at the principal markets at mid-January were 60 per cent of last year and of the 5-year average 1925-1929. Cottonseed meal was quoted at 72 per cent of last year and 73 per cent of average. Linseed meal was selling at 67 per cent of last year and 73 per cent of the average. Corn, oats, and wheat are being sold at 85 per cent, 71 per cent and 52 per cent of average, respectively. Hay prices reflected the short supplies (more so than the by-products and feed grains) with timothy hay selling close to average, and alfalfa and prairie hay slightly under the 5-year average price.

SOYBEANS FOR OIL AND MEAL

Prices of soybeans may be expected to rule at lower levels in 1931 than in 1930. Although there is room for almost indefinite expansion of the production of soybeans for crushing purposes, so far as their adaptability to soil and climatic conditions go, the actual expansion must depend upon the extent to which their products (oil and meal) find a profitable market in competition with similar commodities already in the field. The oil must compete with linseed and other oils and the meal competes with linseed and cottonseed meal in the feed market. The excellent quality of the meal as a high-protein feed is making it a strong competitor although its volume is as yet very small as compared with similar feeds from other sources. Farmers who contemplate the production of soybeans for crushing and for seed should keep in mind the present limited market outlet.

PRODUCTION

The commercial production of soybeans has increased rapidly since 1924. Of the 12,905,000 bushels of soybeans gathered in 1930 practically 90 per cent were contributed by six States—Illinois, Indiana, North Carolina, Missouri, Iowa, and Ohio. Illinois contributed 40 per cent of the total production of soybeans gathered in 1930, Indiana and North Carolina about 14 per cent each, Missouri 11 per cent, Iowa 6 per cent, and Ohio 5 per cent. In these States as a whole the production in 1930 was 280 per cent of that of 1924. By States, the increase since 1924 has been about fourfold in Illinois, threefold in Indiana and Ohio, over twofold in Missouri, and about one-half greater in North Carolina. The number of acres of soybeans planted in the United States to be gathered for beans has increased from 474,000 in 1924 to 1,105,000 in 1930, and in the six important producing States from 355,000 to 926,000 acres in the same period.

The soybeans produced in the North Central States are mainly used for oil and meal; those in North Carolina are mainly for seed purposes, primarily for distribution in the Cotton Belt. Yields in the commercial producing States as a whole have averaged usually from 12 to 14 bushels per acre. Yields in 1930 were slightly below average owing to low yields in North Carolina.

Soybean growing has expanded in South Central Illinois where soil is such as to give somewhat lower corn yields than is true of the better corn soils. The rotation of corn, soybeans, wheat, and clover, saves costs since the seeding of wheat on soybean ground is possible with only a minimum of seedbed preparation. In the eastern district of Illinois soybeans have supplanted oats to a limited extent on farms on which the cropping was primarily one of corn and oats. An area in southern Iowa and northern Missouri has developed as a center of commercial soybean concentration. Here the comparative advantage of soybeans is high, relative to corn and the other farm grains, since on the areas of acid soils and impervious subsoils, soybeans are less affected by drought and other adverse conditions.

Further expansion of soybeans in these areas is physically possible and will be economically feasible when price relationships are favorable. In the area of east-central Illinois, expansion of soybean acreage will hinge upon the extent to which depleted fertility will be reflected in declining yields of corn. The maintenance of corn yields must eventually involve the inclusion of some legume forage crop in rotation. The use of sweetclover in building up fertility and thus encouraging high acreages of corn in that area seems to indicate that the expansion of soybean acreage will be extremely limited.

UTILIZATION AND DEMAND

Prior to 1925, less than 10,000 tons of soybeans were crushed annually. During the year ended September 30, 1930, 48,000 tons were crushed. This figure compares with 26,400 tons in 1929 and 16,700 tons in 1928. Records of cars inspected on the basis of United States standards, supplemented by other data, indicate that receipts of the 1930 crop at mills during the last quarter of 1930 alone greatly exceeded those of any previous crop year.

The products of the soybean (oil and meal) must be sold in competition with other vegetable oils, principally linseed, and high-protein meals such as cottonseed meal and linseed meal. Most of the soybean meal up to this time has been used by the manufacturers of mixed dairy and other feeds and the oil by the paint and varnish, linoleum, soap, and edible-oil industries. The extent to which these industries will use soybean products seems to depend largely on the supply and price of other vegetable oils and protein concentrates.

PRICES

Prices paid for the 1928 crop were mostly on contracts at \$1.35 per bushel, basis United States No. 2 grade, bulk, delivered at the mills. A similar price and basis for the 1929 crop was in effect prior to harvest. This price advanced during the harvest period to \$1.50 per bushel or higher by October, 1929, and a large percentage of the crop was sold at these prices. For the 1930 crop some contracts were made at \$1.25 per bushels f. o. b. country points, the freight differential being approximately 7 to 8 cents. On September 15, 1930, mills were offering \$1.15 per bushel but prices declined to \$1.05 per bushel by November 1, 1930, and to about \$0.83 by January 22, 1931, basis f. o. b. country points.

The future course of prices for soybeans is problematic, depending mainly on the demand for pressing stock for the oil mills and affected vitally by the supply and demand for other vegetable-oil seeds. The strength of this demand and the relative profitableness to growers has been expressed in the past largely by contract prices offered by the pressing mills in advance of seeding.

Stocks of crude soybean oil on September 30, 1930, were more than 10,000,000 pounds compared with 9,000,000 pounds on the same date 1929 and the average of 5,354,000 pounds for the 5-year period 1924-1928. Tank-car prices for domestic crude soybean oil f. o. b. mills, declined from 12 cents per pound in October, 1929, to 8.4 cents per pound in October, 1930, and were quoted at 6.5 cents per pound on January 17, 1931.

FOREIGN SITUATION

World production and trade in vegetable-oil-bearing materials including soybeans continues to expand. Preliminary reports of the 1930 crop of soybeans in Manchuria, the principal foreign producer, point to the largest production on record. Importation of vegetable oils and oil-bearing materials into the United States is also increasing. The imports of soybean oil in 1930, however, were but a little more than one-third of those in each of the two preceding years. The increase in the United States tariff from 2½ to 3½ cents per pound (but not less than 45 per cent ad valorem) which went into effect June, 1930, may account for some of this decline but the general business depression and increased competition of other vegetable oils have also played a part. The imports of soybean cake and meal, which had been on the free list prior to June, 1930, were, in terms of soybeans, much greater than oil. A duty of \$6 per ton on soybean cake and meal has been in effect since June, 1930, and imports have been much smaller. Mixtures of soybean meal containing small quantities of corn meal, wheat, and rice bran until recently admitted on a basis of 10 per cent ad valorem are now to be taxed at \$6 per ton.

OUTLOOK FOR PLANTING

There is likely to be a strong demand for soybeans during the spring months for seeding in the areas in which drought has reduced the acreage of other legume crops, thus cutting down the acreage of clovers and other crops for hay.

Further profitable expansion of soybeans for milling purposes is dependent upon the demand for the products. At present prices the meal derived from the crushing process represents about 60 per cent of the manufactured value and oil represents the other 40 per cent. The outlet for meal seems to be dis-

tinctly broader than that for oil. It is an excellent high-protein feed that has as yet a limited output; practically all of it thus far has been taken by manufacturers of commercial feeds. It is likely to find a ready outlet in competition with linseed and cottonseed meal. The oil comes in direct competition with linseed oil in a limited number of uses. Any sudden expansion of the soybean industry based upon its manufactured products would be likely to reduce prices sharply. It remains to be seen how readily the products can be absorbed into industry.

Further expansion of soybean acreage is more likely in the poorer soil areas than in the better. Relative yields of beans as compared with corn are distinctly higher on poor soils than on the best corn soils. To the extent therefore that beans are to displace corn and other feed grains in Corn Belt cropping systems, it is likely to be in the territory of poorer corn yields.

CLOVER AND ALFALFA SEED

Supplies of clover and alfalfa seed are expected to be ample for spring sowing requirements, as the large carry-over of these seeds offsets the marked decrease in the 1930 production of red, alsike, and sweetclover seed. Because of the unusually large percentage of new seedlings of clovers, alfalfa, and grasses that were killed by the drought, a larger quantity than usual of clover seed will be required if the acreage of the clovers is to be restored. In view of the relatively favorable prices for hay as compared with other crops, and the short supplies of hay in many sections, farmers may be expected to bring their clover acreage to be cut for hay in 1932 up to that of 1929.

Unless unforeseen conditions occur, such as prolonged drought in the spring or early summer that would not permit of sowing clover seed, available supplies will probably be drawn upon heavily and thus leave only a small quantity to be carried over. This, together with the fact that the 1931 acreage of red clover available for seed is indicated to be relatively small, points to a favorable outlook for growers of red and alsike clover seed.

Although the outlook for growers of alfalfa and sweetclover seed is not so bright as for growers of red and alsike clover seed, the acreage of these crops may be maintained equal to that harvested in 1930 without seriously affecting the present level of prices.

Total production of red and alsike clover seed in 1930 was about 87,576,000 pounds, compared with 151,380,000 in 1929, a record crop, and 64,860,000 pounds, the average annual production for the preceding five years, 1924-1928. The drought cut down the acreage for seed nearly 40 per cent and the yield per acre less than 10 per cent. Imports of red-clover seed have been declining sharply for five years. For the fiscal year ended June 30, 1930, they were 2,154,300 pounds, or less than one-fourth the average of the previous five years. Large imports in the near future are not expected. A preference for domestic seed over imported seed is manifested by a premium of \$5.75 per 100 pounds being paid for the former. Furthermore, import duties were increased from 4 to 8 cents a pound in the tariff act of 1930. Wholesale prices now prevailing are higher than last year by about \$6 per 100 pounds (30 per cent) but are lower than the average at a corresponding date for the last five years (1927-1929) by about \$6 (20 per cent).

The decrease in production from that of 1929 was not so marked for alsike-clover seed as for red clover, the 1930 crop of alsike clover being about 30 per cent larger than the average for the preceding five years. Imports for the fiscal year ended June 30, 1930, totaling 7,220,300 pounds, were about 50 per cent larger than the year before, but about 15 per cent below the average for the preceding five years. Imports since July have been almost negligible, dropping to only 1 per cent of the 5-year average for the period July 1-January 15. The unusually small production in Canada, chief alsike-clover seed exporting country, together with the tariff, accounts mainly for the great decline in imports. Prevailing prices are about \$3.35 (15 per cent) higher than last year but about \$5.85 (20 per cent) lower than the 5-year average.

For several years a reduction in acreage of sweetclover for seed had been advocated because of the surplus that had been accumulating. The reduction that occurred in 1930 was due more to factors (chiefly drought) beyond the control of growers than to the growers themselves. Although there is likely to be the closest clean-up of this seed in recent years, it would seem inadvisable to increase the acreage for seed because past experience has shown

how easy it is to produce a large surplus, as sweetclover generally seeds freely over a wide territory. The 1930 crop was the smallest in six years, being 25 per cent smaller than that of 1929 and 35 per cent below the 5-year average. Imports have been on the decline for five years, and of late have almost reached the vanishing point. Prevailing wholesale prices are about \$1.15 (15 per cent) higher than last year but about \$1.70 (15 per cent) lower than the 5-year average.

Alfalfa seed production was about 15 per cent larger than in 1929 and about 5 per cent above the 5-year average. The main producing districts were outside the areas hardest hit by the drought and consequently there was little need in those districts to sacrifice a seed crop for one or two hay crops. Furthermore, in States to the east of the central producing districts, the drought favored the setting of seed to such an extent that a few of these States produced the largest crops ever recorded by them. This will affect somewhat the demand for seed, especially of the Grimm variety, the production of which was larger than usual.

Imports for the fiscal year declined sharply, culminating in the smallest quantity since 1918 and amounting to less than one-third the exports for the same period. Supplies are expected to be more than ample to meet the spring and early summer demand unless relatively more of this seed than of the clovers is used. No increase in acreage for seed production is advocated. Prevailing wholesale prices are about the same as last year, but about \$1.50 (7 per cent) higher than the 5-year average.

POTATOES

Increased supplies of potatoes in prospect in the 1931 crop year will probably more than offset any improvement in demand if growers respond as they usually do to potato prices or if they plant the increased acreage now reported as intended. If average weather conditions prevail during 1931, potato growers are likely to receive lower prices for the 1931 crop than were received for the 1930 crop.

The acreage of potatoes harvested in 1930 was only a little more than 1 per cent greater than the acreage harvested in 1929. As in 1929, yields were greatly reduced by adverse weather conditions. Only a moderate crop was harvested, the total being estimated at 361,000,000 bushels compared with 359,000,000 in 1929 and 465,000,000 in 1928. The increase in acreage occurred in the 13 Southern States. In the rest of the country, after allowing for acreage not harvested on account of the October freeze, the 1930 acreage was practically equal to that of 1929.

According to reports by growers, the 1930 crop brought an average price of \$0.90 per bushel on December 1, compared with \$1.31 per bushel secured on December 1, 1929, although the two crops were of about the same size. The difference in price represents chiefly the reduced purchasing power of consumers and the lower general level of food prices. In the chief surplus-producing States, December f. o. b. shipping point prices per 100 pounds for United States No. 1 potatoes during 1929 and 1930, averaged as follows:

At Presque Isle, Me., the price in 1929 was \$2.01 per bushel compared with \$1.25 in 1930. At Rochester, N. Y., in 1929 the price was \$2.40 compared with \$1.54 in 1930. At Waupaca, Wis., the price was \$2.12 in 1929 compared with \$1.24 in 1930. At Idaho Falls, Idaho, the price in 1929 was \$1.92 compared with \$0.93 in 1930.

The greater reduction in Idaho reflects the relatively large production in the far Western States compared with unusually low production in the Central States. Prices for the remainder of the 1931 production will be determined largely by southern crop conditions and by the size and marketing of the early 1931 crop. Stocks on hand on January 1, 1930, indicate that marketings after January 1, 1931, may be about equal to those after January 1, 1930. Competing supplies from the South are likely to be greater than those of 1930.

SEED PRICES

The production of certified seed potatoes amounting to approximately 6,284,000 bushels was about 25 per cent smaller than the 1930 crop of 8,411,000 bushels and 40 per cent smaller than the 1928 record crop of 10,375,000 bushels. The chief reduction in the 1930 crop occurred in the Green Mountain

and Irish Cobbler varieties, particularly in Maine. Seed prices to growers averaged about 40 cents per bushel lower in 1930 than in 1929 in spite of the greatly reduced supply.

The 1931 acreage is likely to be 6 per cent greater than in 1930, if growers carry out their present intentions. These intentions are apparently the result of better-than-average prices received for both the 1929 and the 1930 crops and are in line with the usual response of potato growers to prices received. In the 19 so-called surplus-producing late potato States the intended increases average 4 per cent; in the 16 deficit late potato States, 7 per cent; and in the 13 other States, including North Carolina, Oklahoma, and States to the south, 11 per cent.

Such increases, if carried out, would mean a total of 3,583,000 acres, and with normal weather total production would be approximately 421,000,000 bushels. This would be practically equal to the large crop of 1924, but under the record crop of 1928 of 465,000,000 bushels.

A large crop in 1931, would result in lower prices for both the early and late crops than those generally received in 1930. The marketings of the early crop from the South will take place during a period of unusually depressed business conditions which, together with a larger supply, will tend to keep prices during the spring and summer well below those of the same months of 1930. The marketing of the late crop will also begin in a period of low, though possibly somewhat improving, demand conditions, but should a crop of 421,000,000 bushels be produced in 1931, this supply together with a general lower level of food prices, and only a moderate material improvement in demand, is likely to result in prices in the winter of 1931 about a third below the 1930 level. Such a level of prices for the country as a whole would mean a greater percentage decline in such States as Michigan and Wisconsin, where 1930 prices were relatively high because of small crops, and a smaller percentage decline in such States as Maine and Idaho where the 1930 prices were relatively low because of large local crops.

SWEETPOTATOES

A large increase in sweetpotato production is probable and, locally, through the Cotton Belt, there is likely to be some surplus that can be used for feeding livestock.

In those portions of the Cotton Belt in which sweetpotatoes are grown primarily for local consumption the acreage varies from year to year according to the price of cotton, a low price for cotton resulting in an increased acreage of sweetpotatoes the following season. The low price now being received for cotton and the widespread effort to encourage the substitution of an increased acreage of food and feed crops will tend to cause a sharp increase in the acreage planted to the moist-fleshed type of sweetpotatoes grown in the Cotton Belt. The yield per acre is also likely to be much above the abnormally low yield obtained in 1930. The outlook is for a large crop of sweetpotatoes in 1931, with probably some surplus over food requirements which can be advantageously used as feed for live stock. This situation should not prevent southern growers from providing an ample supply to meet their own needs, but those who plan to raise sweetpotatoes for market on an extensive scale will do well to recall the low prices received for sweetpotatoes in such seasons as 1915, 1921, 1922, and 1927, when the price of cotton was unusually low at planting time.

In eastern Virginia and other sections in which the dry-fleshed type is grown for northern shipment, prospects are somewhat better than they are farther south for there seems to be no reason to expect an unusual expansion of the sweetpotato acreage next season in States that produce the dry-fleshed type. Producers of the dry-fleshed type, however, will probably have to sell their sweetpotatoes in competition with both a substantially large United States crop of potatoes than has been harvested from the 1930 crop and a surplus supply of the moist-fleshed sweetpotatoes grown in the Cotton Belt.

BEANS

Although the consumption of beans in this country is increasing, as indicated by the annual disappearance from trade channels, the 1930 crop is considerably larger than would be needed this year at a normal rate of increase in consump-

tion. Unless consumption is greatly increased by the prevailing low prices and the economy of using beans as a food, the carry-over will be heavy. If the excess of domestic production continues to increase, the resulting surpluses will tend to reduce domestic prices more and more toward the low levels of foreign markets.

The acreage of beans harvested in 1930 was 11 per cent greater than that of 1929 and 35 per cent greater than the 5-year average 1924-1928. This increased acreage with a yield lower than the 5-year average produced over 22,100,000 bushels, compared with 20,700,000 in 1929 and the 5-year average annual production of 17,300,000 bushels. The increase in production in 1930 was confined largely to great northern, pintos, baby Limas, and black eyes. The total supply of all white beans including pea beans, small whites, great northern, large whites, and marrows, however, was 250,000 bushels less than in 1929. This reduced supply was due to low yields in the pea-bean producing area where the crop was affected by the drought.

The abnormally heavy production in 1930 was followed by generally declining prices. The value of this crop based on the December 1 farm price is only about \$53,000,000 compared with \$78,371,000 for the 1929 crop and an average of \$58,880,000 for the 5-year period 1924-1928.

Exports of about 163,000 bushels during the same period are about half the usual exports for these months. The average annual net imports for the last five years have been about 1,000,000 bushels, coming largely from the Danubian countries and from Chile and Japan. Imports both this year and last have been stimulated by the shortage of pea beans and red kidneys. Prices of beans produced abroad are so low that they have continued to move to this country in considerable volume up to this time (late January). Japanese Otenashis (large whites), hand-picked Government export grade, are being quoted as low as \$1.85 per 100 pounds c. i. f. United States seaboard markets for as late as February, 1931, shipments. This grade is selling in competition with the highest grade of domestic whites. Annual exports of American-grown beans range from about 300,000 bushels to 600,000 bushels, and are largely limited to certain colored types shipped to Cuba and other Caribbean countries. A large foreign outlet is possible only under exceptional conditions of a very short world supply or at prices far below ideas of values commonly held in this country.

OUTLOOK BY CLASSES OR TYPES

PEA BEANS

Because of the effects of the drought in 1930 over a large part of the bean-producing areas in Michigan and New York, the production of pea beans was only 4,800,000 bushels compared with 5,500,000 bushels in 1929 and an average of 6,000,000 bushels for 1924-1928. The harvested acreage in Michigan and New York, composed largely of pea beans, was 18 per cent larger in 1930 than in 1929 and 35 per cent larger than the average for the years 1924-1928 inclusive. A yield equal to the 5-year average in these States would have resulted in a crop of 8,500,000 bushels of pea beans in 1930 compared with the previous record of 7,700,000 bushels in 1925.

GREAT NORTHERN BEANS

Production of great northern beans in 1930 was about 3,000,000 bushels compared with 2,617,000 bushels in 1929 and an average for the previous five years of 1,665,000 bushels. The total acreage harvested in the three great northern bean-producing States—Idaho, Montana, and Wyoming—increased 72 per cent from 1927 to 1930. The increase in 1930 over the previous year is 14 per cent. Notwithstanding the heavy production, prices for great northern beans have been maintained on a favorable level compared with prices for pea beans. The December 15 farm price of great northern beans this season was about 26 per cent below the average December 15 price of the previous five years.

PINTO BEANS

There has been a marked upward trend both in harvested acres and in total production of pinto beans during recent years. The 1930 crop is estimated at 4,652,000 bushels compared with the previous record crop of 4,026,000

bushels in 1929 and an average of 2,246,000 bushels for 1924-1928. The acreage harvested in Colorado and New Mexico, the principal pinto bean-producing States, increased 10 per cent in each of the years 1928 and 1929 and 6 per cent in 1930. The heavy production, both in 1929 and 1930, is due, in a large measure to the unusually high average yields per acre obtained in each of these years. The 1930 December 15 farm price of pinto beans was \$2.19 per 100 pounds as compared with \$4.68 per 100 pounds in 1929 and \$4.98 for the previous five years.

RED AND DARK-RED KIDNEY BEANS

The estimated production of red and dark-red kidney beans was only 662,000 bushels in 1930. This is about 25 per cent below the average annual production of 878,000 bushels during the preceding five years. The low production in 1930 was due to a smaller acreage caused by the scarcity and high price of seed and to the drought which reduced the yield in some areas. The short crop is being reflected in prices considerably above those obtained for other types of beans. Growers should not be influenced by these prices to plant an excessive acreage of these classes as the demand is somewhat limited.

LIMAS AND BABY LIMAS

The total production of Lima and baby Lima beans has increased materially during the last two years. The 1930 production of all Limas was 3,052,000 bushels compared with 2,572,000 bushels in 1929 and 2,258,000 bushels in 1928. This increased production has been stimulated by relatively high price levels for these classes but this year's heavy production has been followed by a sharp decline in prices.

PINK BEANS

The 1930 production of pink beans was about the same as that for 1929 and the supply seems to be in excess of requirements, especially as the outlet for this type has been somewhat restricted by the competition of the unusually low priced pintos.

Production of black eyes was very heavy and a reduction in acreage of that type is to be expected in 1931.

CABBAGE

Had cabbage yields not been so low in many areas in 1930, the acreage would have produced an excessive supply in the second-early, intermediate, and late groups of States. Considering the strong possibility of higher yields, there is little prospect that growers in the late States will receive higher prices in 1931 unless acreage is reduced and there is an appreciable improvement in general business conditions.

Uncertainty of the effect of drought upon the late crop of Danish type cabbage caused southern growers to look forward to early 1931 as another season of extremely light storage holdings in the North. However, with a much larger acreage, production of Danish cabbage was nearly 9 per cent greater than in 1929. Storage stocks of the 1930 crop of late cabbage are somewhat below the usual average for this time of the year but are heavier than last winter's stocks.

The early cabbage acreage this year in California, Florida, Louisiana, and Texas, has been increased by about one-third, a record planting for this group. This increase in acreage was further influenced by the exceptionally high prices received last season for a crop one-third smaller than the record crop of 1929. Yields in these early States this year are indicated to be nearer the usual average. Production is forecast at 231,700 tons or more than half again as large as in 1930 and slightly greater than the record 1929 crop, for which growers received an average price nearly 60 per cent below the 1930 price.

In the second-early States, a reduced acreage and low yields in 1930 resulted in rather encouraging prices for growers. This group extends north of Florida along the Atlantic coast through Virginia and west along the Gulf coast through Louisiana. Exclusive of a decrease in 1928, the acreage in these States climbed steadily from 1924 to 1929. In 1930, the acreage was reduced about 30 per cent or about midway between the 1925 and 1926 acreage. The

average yields per acre for the last five years have been on a fairly low level, tending to counteract part of the effect of acreage increases. Growers in the second-early States report an intention to decrease their 1931 acreage by about 2.5 per cent. Considering the possibility of serious overlapping with a large early crop, this slight decrease in acreage may not be sufficient to prevent a lower scale of prices in 1931 than in 1930, unless accompanied by yields lighter than usual.

Cabbage marketing is usually most difficult when the intermediate States are active during the summer months. This group includes most of the other Southern States, and Washington, New Mexico, Missouri, Iowa, Illinois, New Jersey, and Long Island, N. Y., and areas in Ohio and Virginia. Cabbage acreage in these intermediate States rose gradually but steadily from 1924 to 1928 but in the last two years has decreased to about the 1926 and 1927 levels. Yields during the last three years have dropped lower and lower. Drought was particularly severe on the summer cabbage crop in the eastern and central areas in 1930. In general the outcome was discouraging in both production and price. Because of relatively low returns in 1930, a further reduction in acreage appears probable next season. With better yields than those obtained in the last two seasons, an acreage as large as that of 1930 is likely to result in a greater supply of summer cabbage than growers can market at satisfactory prices.

In the northern late States in 1930 production of domestic-type cabbage for market was 8 per cent larger and prices were nearly 30 per cent lower than the year before. Production of Danish-type or storage cabbage in these States was nearly 9 per cent larger, and prices reported to December 1 averaged only about one-half those of 1929. A smaller acreage of northern cabbage in 1931 seems advisable considering the possibility of yields as high as in the years preceding 1929.

LETTUCE

Lettuce continues to be an outstanding example among those truck crops which have shown a steady expansion during recent years. But growers should not assume that this expansion can be continued indefinitely and that sufficient market capacities can be developed to keep pace with this increasing lettuce supply; consequently the need for comprehensive marketing plans has become more pressing each season. Moreover increased attention should be given to distribution to avoid serious overlapping with competing districts and careful planning is increasingly necessary to effect as nearly as possible the maturing of the crop so as to prevent this overlapping.

Increased demand for lettuce, which has been evident for a number of years, was not so apparent during 1930. An important factor in the marketing of 1930 lettuce was the large quantity of poor quality stock. This, together with an excessive supply at times, resulted in lower average prices to the growers than in 1929. Lessened demand for lettuce was also attributable to the general business depression.

The annual expansion of the lettuce acreage during recent years was continued during 1930, the increase in that year amounting to almost 16 per cent. Notwithstanding a decrease in the average yield of 18 per cent, which resulted in a slight reduction in total production, the 1930 crop was marketed at lower average prices. However, a larger proportion of the crop was shipped, the movement to market exceeding by more than 2,000 carloads the shipments of 1929, and totaling more than twice as many as in 1922.

Practically all of this increased production continues to be in those States that produce the Iceberg-type lettuce, particularly California and Arizona. Acreage in California in 1930 was 20 per cent greater than in 1929, through production, because of lower yields, was only about 3 per cent larger. Acreage in Arizona was over 16 per cent larger, but, because of reduced yields, production decreased about 9 per cent. In New York State, where Big Boston type lettuce is grown, acreage was reduced slightly in 1930. A lighter yield resulted in a 14 per cent lower production and prices were about 9 per cent lower than in 1929.

The early 1931 acreage in the early districts (Arizona winter crop, Imperial Valley of California, Florida, and Texas) is estimated at 61,330 acres as compared with 54,370 in 1930. Arizona has just completed the marketing of an early winter crop 35 per cent larger than last year and at prices somewhat lower than last year. Imperial Valley of California is the principal source

of supply for lettuce during January and February. An early forecast of production in this district estimates the crop at 6,273,000 crates, which, if realized, will be the largest crop in the history of lettuce production in this district, totaling over 1,000,000 crates more than the previous record crop of 1927.

TOMATOES

FRESH TOMATOES FOR MARKET

The harvested acreage of tomatoes grown for market reached its highest point in 1930 with a total of 165,000 acres. This was an increase of 11 per cent over the 1929 figure and about 22 per cent above the previous 5-year average. The average yield per acre for the country as a whole decreased from 117 bushels in 1929 to 104 bushels, partly because of prolonged drought. This was the lowest yield per acre in the last 13 years.

Total car-lot shipments of fresh tomatoes during 1930 broke all records. About 33,900 carloads moved by rail and important boat lines, in addition to heavy shipments by truck and wagon. The sharpest increases over the 1929 record were made in Texas, New Jersey, Indiana, and northern and central California. Texas alone forwarded 7,500 cars, of which 4,000 moved during June, which demoralized the market at that time, when Mississippi and other States were active. Prices were influenced not only by heavy production but by business depression which lowered the price level of farm products generally. The average price received by growers for tomatoes in 1930 was the lowest in the last 11 years, except in 1927. It is evident that plantings have been expanded too rapidly during recent seasons. With the probability of higher yields in 1931 than last year, a reduction in the total acreage seems advisable.

The fall-crop acreage of tomatoes in Florida and southern Texas was 71 per cent greater than that harvested in the fall of 1929 and production was increased 82 per cent. Early reports from the important south-Florida counties, which furnish the late winter crop, indicated that plantings this year would be at least 6 per cent larger than plantings last year and slightly greater than the acreage two years ago. However, heavy rains again caused losses of plantings as in 1930, and at present the acreage is 6 per cent less than that harvested in 1930. This may or may not result in heavier production in south Florida depending upon weather conditions.

Total 1930 production in the other early sections which supply the early spring market was the lightest in several years and the average farm price increased to about one-fourth over the 1929 average price. Prices in 1930 were favorable enough to encourage acreage increases in 1931. It is uncertain what effect the higher tariff will have on imports of tomatoes to this country shipped in competition with our late winter and spring production. Imports so far this winter have exceeded those of a year ago.

In the second-early States—South Carolina, Georgia, Mississippi, Louisiana, and parts of Texas other than the lower valley—there has been a marked upward trend in acreage since 1923. Production in 1930 was the heaviest on record, even exceeding the large crop of 1927 by 5 per cent. It appears that the supply of tomatoes available from these States in a normal year on the present acreage basis is more than can be marketed at prices satisfactory to the grower.

In the intermediate States, comprising New Jersey, Maryland, Virginia, North Carolina, Tennessee, Arkansas, Missouri, and parts of Ohio, Illinois, and California, the 1930 season proved disappointing. A record acreage was planted, but yields were greatly reduced by the prolonged drought. In spite of a 15 per cent lighter crop than in 1929 the average farm price declined.

In the late States—Delaware, Pennsylvania, New York, Kentucky, Indiana, Michigan, Iowa, Colorado, Utah, Washington, Oregon, northern California, and parts of Illinois, and Ohio—the 1930 tomato acreage was increased sharply over that of the two preceding years. The increase over 1929 was about 22 per cent. However, reduced yields per acre resulted in a crop slightly below the 1929 production, but nearly one-fifth larger than the 1928 crop. Higher prices in Illinois, Indiana, Kentucky, Delaware, and Pennsylvania helped to raise the average farm price for this group to about 8 per cent over the 1929 average price.

The late fall acreage in the southern district of California was increased nearly 50 per cent over that of 1929. The large crop resulted in a sharp reduction in the farm price.

The total estimated farm value of tomatoes grown for market in the second-early, intermediate, and late States together decreased from about \$21,200,000 in 1929 to approximately \$16,500,000 in 1930. If unfavorable growing conditions last year had not reduced the average yield per acre in most of these States, a very excessive production would have resulted, and prices doubtless would have been even lower than they were. On the assumption of average yields in 1931, the plantings in second-early, intermediate, and late States could well be reduced, except in localities in which growers enjoy a favorable situation with respect to their markets.

TOMATOES FOR MANUFACTURE

Production of tomatoes for manufacture in 1930 reached the high total of 1,653,000 tons and has been exceeded only in 1925. The crop for manufacture was 17 per cent greater than that of 1929 and 73 per cent above the 1928 total. The 1930 acreage showed an increase of 23 per cent over the preceding year.

In view of the increased tonnage put into cans last season the maintenance of the 1930 acreage of tomatoes for canning and manufacture in the 1931 season may result in excessive supplies.

ONIONS

The 1930 season was characterized by the largest crop of onions ever produced, and by a record low price received by growers. In view of the difficulty in marketing a crop as large as that of 1930, total acreage in the late-crop States particularly, should be reduced.

In the early Bermuda and Creole onion States—California, Louisiana, and Texas—which in 1930 produced 15 per cent of the total onion crop, the preliminary estimate of acreage now planted for harvest in 1931 is 12 per cent above the 1930 acreage, and 11 per cent above the 5-year average, 1925-29. Of the 22,000 acres estimated for this group, Texas has 19,600 acres with a 20 per cent increase over 1930, which accounts for the entire increase. All of this Texas increase is on dry-land areas, where yield per acre will be large dependent upon rainfall. Even should the average yield for the early group be 10 per cent below the average for the last five years, however, the production would still be approximately the same as in 1930, when the lowest price on record was realized. With storage holdings at high levels, the profitable marketing of a large crop of Bermuda and Creole onions will probably be difficult.

The mid-season or intermediate shipping States, consisting of California, Iowa, Kentucky, New Jersey, North Texas, Virginia, and Washington, are likely to face the competition of a large early crop. The 1930 production of intermediate onions was about equal to that of 1929 and comprised about 8 per cent of total production. The average price to the grower was 18 per cent below that of 1929 and was one-third lower than the average price for the five preceding years. The 1931 intermediate season is likely to open at a lower price level than in 1930, because of the previous effect of heavy supplies of storage onions and the prospective large crop of early onions.

In the late domestic onion States, which in 1930 produced 77 per cent of the entire crop, growers for the second successive year increased their acreage to a new high mark, and again broke all previous records. The production of more than 20,000,000 bushels in the late States was 10 per cent larger than the big crop of 1929, and 33 per cent larger than the average of the previous five years. All important States in this group except Colorado, Ohio, and Massachusetts increased their acreage. The heavy production in 1930 has been accompanied by disastrously low prices. Up to December 1, 1930, the average price received by producers of late onions was 43 cents per bushel, compared with a seasonal price of 63 cents per bushel in 1929, and an average seasonal price of 84 cents for the five previous seasons. During five of the last six years, the average price received by growers of late onions has been closely related to the size of the crop. If this relationship holds good for 1931, production of late onions must be reduced at least 20 per cent below the 1930 level before growers can expect as much as the 5-year average price of 84 cents per bushel. With average yields, a 13 per cent reduction in acreage would be necessary to bring about a 20 per cent smaller crop.

CITRUS FRUITS

The bearing acreages of oranges and grapefruit are steadily increasing. In addition many trees now in bearing have not reached the age of maximum yield and large increases in production, particularly of grapefruit may be expected in years when favorable growing conditions prevail. Practically all the existing lemon acreage is now in bearing and aside from irregular variation due to weather condition, little change from the present high level of lemon production is expected in the near future.

The trend of orange production is upward. About 66 per cent of the total shipments of oranges in the United States move from November to April, inclusive. This movement constitutes practically all of the crop except the California Valencias. Assuming an average of 70 trees per acre and including satsumas and tangerines, the total acreage in orange groves in Florida is close to 230,000. Most of this acreage is now in bearing but many of the trees are small and the production in Florida is still increasing about 4 per cent a year. Texas with an acreage of 20,500 has only about 24 per cent in bearing. California has recently planted very few oranges of the Washington Navel variety which meet the most competition from Florida and Texas, and only 3 per cent of the 100,500 acres of Washington Navel were classified as non-bearing in 1929. On the other hand there are indications of a further increase in the bearing acreage and production of California Valencia oranges which are marketed chiefly during the summer and early fall. In 1929, 19 per cent of the 112,200 acres of California Valencias were classified as under the bearing age. During recent years there has been a marked upward trend in both production and prices of California Valencias which indicates substantial increase in demand. Producers of winter oranges can expect an outlet on European markets for only a relatively small quantity of the higher grade fruit in view of the keen and growing competition from Spanish and Palestine fruit. There is a somewhat better outlook for the disposition of California Valencias in foreign markets although the shipment of South African and Brazilian oranges in the same season is increasing.

The trend of grapefruit production is sharply upward in all producing sections. Florida has about 80,000 acres in grapefruit. Most of the trees are in bearing but many are not yet of full size. The California bearing acreage is reported as 10,000, with a forecast of 11,800 acres in bearing by 1932. Texas has over 60,000 acres of grapefruit and only 17 per cent of the trees are of bearing age. The April, 1930, survey of plantings in the lower Rio Grande Valley, the chief producing area of Texas, made by the Federal plant quarantine and control administration, indicated some 713,000 grapefruit trees 5 years old or older, 300,000 trees 4 years old, 445,000 trees 3 years old, 814,000 trees 2 years old, 1,214,000 trees 1 year old, and 716,000 trees under 1 year of age. Although the freeze that occurred in 1930 nipped back many of the younger groves in Texas and reduced the size of the crop for harvest during the 1930-31 season, the setback to production appears to be temporary. In Arizona recent plantings have been heavy. Seven years ago there were only about 2,000 acres of grapefruit in that State, but estimates now place the acreage somewhere between 8,000 and 9,000, with less than half of the trees of bearing age. Latest reports from Arizona indicated that sufficient nursery stock was available to plant an additional 3,400 acres in the spring of 1931. In Porto Rico, where there were about 6,000 acres in 1928, an upward trend of production is expected.

It is impossible as yet to forecast accurately the prospective production of grapefruit in Texas and Arizona. Such factors as possible losses from freezing, planting on unsuitable soils, errors in estimating water requirements and supplies, and grove neglect may curtail yields. However, if by 1936 the production from trees now standing in Texas and Arizona averages two boxes per tree, or the same as the 10-year average in Florida for trees 5 years old or older, total United States production of grapefruit from present plantings would show a total of 23,000,000 boxes. Previous to the season of 1929 no grapefruit crops totaling over 9,000,000 boxes have, on the average, netted the growers as much as \$1 per box on the trees.

Canning of grapefruit has been increasing rapidly during the last five years. About 1,316,000 cases were packed in Florida from the 1929-30 crop as against 400,000 in 1925-26. Reports from Florida point to a marked increase in the pack for the 1930-31 season. Porto Rico reports a pack of approximately 400,000 cases from the 1929-30 crop.

Increasing consumption of grapefruit in foreign countries may be expected to continue, but production in other parts of the world, as in Palestine, West Indies, Brazil, and South Africa, is also increasing to meet this growth in foreign demand. Florida and Porto Rico have previously supplied the bulk of the grapefruit shipped to European markets, but United States growers must expect more competition in these markets in the future than has been felt in the past.

The bearing acreage of lemons, located almost entirely in California, has not materially changed since 1921. Practically all of the existing lemon acreage in Italy, United States, and Spain is now in bearing and there are no reports of significant additions to these plantings. Italy is still the world's leading producer of lemons and substantial imports of Italian lemons into this country must be expected whenever a small crop in this country coincides with a large crop in Italy.

APPLES

With almost 25 per cent of the apple trees in commercial orchards not yet of bearing age or producing little fruit, and 60 per cent of the trees under 20 years of age, the average commercial production of the last few years apparently can be maintained for some years and might be easily increased. An increase seems the more probable in view of the more general adoption of improved production practices which have tended to increase yields in some important sections. From the short-time standpoint, there may be some temporary reduction in production because of economic and weather conditions of last year which have discouraged many growers, especially in the central and eastern drought areas. But at this time there is no definite indication that these conditions will permanently affect, to an important degree, the potential producing capacity of commercial orchards, as a whole.

The general situation is such that keen competition among growers and competition from heavy supplies of other fruits may be expected to continue. Great losses to apple growers have occurred from setting out trees that were not profitable because of location. New plantings should be confined to soils and sites that are likely to produce a crop in years of generally light production as well as in years of generally heavy production. Caution should be taken also to see that new plantings consist of varieties and combinations of varieties that will insure proper pollination. In response to market demand there is a pronounced trend toward higher quality with respect to both variety and grade, but yield as well as price is to be considered in deciding on varieties to plant.

Although total apple production averaged 9 per cent less during the last six years than during the six years, 1909-1914, a bushel of apples has purchased approximately the same quantity of things bought by farmers as it did just previous to the World War. This has happened notwithstanding an increasing population and an increasing export trade. At least a part of this may be explained by increasing supplies of other fruits. Thus, during the period 1914-1924 the annual production of oranges, pears, and peaches amounted to about 107,400,000 bushels and during 1925-1930 it averaged about 137,300,000 bushels, an increase of almost 28 per cent. From 1919 to 1930 banana imports increased from 35,000,000 bunches to 66,000,000 bunches. During recent years the production of grapefruit and dried prunes has increased greatly. In addition, winter vegetables and pineapples have assumed greater importance in the diet. Commercial acreage of vegetables and truck crops other than potatoes and sweetpotatoes has increased at an average rate of nearly 9 per cent a year since 1918.

Of the bearing apple trees in commercial orchards, a large part are those that survived a long period of readjustment following overplanting 20 to 25 years ago. The net decrease in numbers of apple trees between 1910 and 1925, amounting to 79,000,000 trees, or 36 per cent, had much to do with placing the industry on a sounder basis, since most of the orchards that survived were in the more favorable sections. The large number of young trees now in orchards is the result of stimulated planting of certain varieties for a few years after the end of the World War. At the beginning of 1928, 25 to 30 per cent of the trees in commercial orchards were under 9 years old. Reports from the apple sections indicate that plantings since 1928 have been light and confined largely to replacements and to some new orchards where special

advantages in production or marketing prevail. Sales of trees have varied little during the last two years and no general increase in sales of trees for the 1930-31 season is expected. Some tendency toward a decrease in the number of family orchards is apparent, although roadside markets are proving a stimulus to rejuvenation and better care of some small orchards. The quantity of apples produced in the small orchards will continue to have considerable influence on apple trees, especially in seasons when growing conditions are good throughout the country.

Production in the Northwest appears to be near its peak for the present cycle. The rate of increase in production has been very low as compared with 10 to 15 years ago. At the beginning of 1928, only 13 per cent of the trees reported in the survey of commercial orchards of the four principal western apple States—Washington, Oregon, Idaho, and California—were under 9 years of age. Plantings since 1928 in the Northwest have been light and largely of the Delicious variety.

In the barreled-apple States about one-third of the trees in commercial orchards in 1928 were under 9 years of age, which with movements toward improved orchard management should maintain and possibly increase commercial production, providing prices are high enough to prevent abandonment and neglect of the orchards. Reports for the last two seasons indicate that only moderate plantings are being made. In the Central States, such plantings as are being made are largely of the Delicious, Jonathan, Grimes Golden, and Stayman Winesap. In the Cumberland-Shenandoah district, the Delicious, Stayman Winesap, and York Imperial are the main varieties being set. In New England, the McIntosh and Delicious are the leading varieties being planted.

In 1928, the tree survey for 41 States indicated that of 80,800,000 trees, 8.4 per cent were Delicious; 8.2 per cent Winesap; 7.8 per cent Jonathan; 6.8 per cent Baldwin; 6.3 per cent Stayman Winesap; 5.6 per cent Ben Davis; 5.2 per cent Rome Beauty; 4.5 per cent York Imperial, and 4.1 per cent McIntosh. These nine varieties constituted about 57 per cent of the total trees. Other leading varieties in order of the number of trees indicated by the survey were, Grimes Golden, Yellow Newtown, Wealthy, Yellow Transparent, Rhode Island Greening, Northern Spy, and Gravenstein.

Extensive commercial plantings of Delicious trees, 73 per cent of which were under 14 years of age in 1928, point to increasing supplies of this variety for several years. Production of the McIntosh and the Stayman Winesap varieties is expected to increase, since 60 per cent of the trees of these varieties are under 14 years old. Another group of varieties in which there are prospects for increasing production over a period of years is composed of the Winesap, Jonathan, and Grimes Golden. In 1928, 43 per cent of the trees of these three varieties were under 14 years of age. Plantings of Ben Davis trees have declined for several years and in 1928 only 12 per cent of the trees reported of this variety were under 14 years of age. Only moderate plantings of Baldwin, Northern Spy, Rhode Island Greening, and York Imperial have been reported in the last 10 years. Many less-important varieties are giving way to the more popular.

The importance of an export outlet has been demonstrated again this season. It is probable that apple exports this season (1930-31) will be the largest on record. The large apple crop in the Pacific Coast States, the relatively low prices prevailing in the American market, and reduced competition from smaller supplies of Canadian and European apples have been the principal factors contributing to increased exports. Exports through December, 1930, were the largest on record for that period and prospects for large foreign shipments for the remainder of the season are good in view of the favorable situation with respect to competitive supplies. The Spanish orange crop is smaller than last year and the competition from Australian and New Zealand apples toward the end of our marketing season will probably not be so keen as it was in 1930.

The prevailing depression and consequent reduction in purchasing power in European countries, however, will tend to keep prices lower than would otherwise be the case.

On the domestic markets supplies of competing fruits as well as apples are heavier than they were a year ago. The 1930 commercial apple crop was 16 per cent greater than in 1929, and 4 per cent greater than the 5-year average 1925-1929. Cold-storage holdings on January 1, 1931, were 20 per

cent greater than on January 1, 1930, and 14 per cent above the 5-year average. Larger domestic crops of citrus fruits will offer stronger competition than last season.

From the long-time point of view, the outlook is for a continuation of a relatively good foreign demand for the higher grades of American apples. Increasing difficulties will be encountered, however, in the disposition of the lower grades of fruit in European markets. European countries are making every effort to increase production of their home orchards. The increase in competition from these sources may be slow but it will affect first the lower grades of our export apples. An additional factor limiting the market for our low-grade apples is the prohibition on imports into the United Kingdom from the United States from the beginning of the season to November 15 of apples lower in grade than Fancy for boxed apples and United States No. 1 for barreled apples. This restriction is of particular importance to the growers and exporters of eastern barreled apples.

PEACHES

In the South, the peak of production from peach trees now in orchards was apparently reached in 1928. Even with favorable weather conditions the size of the southern crop during the next few seasons is likely to be considerably less than in 1928, although larger than in 1929 or 1930, when for the South as a whole, production was somewhat below the average of the last five years. In California, the upward trend in production of clingstone varieties is nearing its peak and for freestone varieties the trend will probably continue downward. In most other peach-producing areas prospective changes in bearing acreage are moderate. The indications are that peaches will continue to face strong competition on the markets from other fruits and melons.

The commercial peach tree survey in the spring of 1929 included five leading southern peach States—Georgia, North Carolina, South Carolina, Tennessee, and Arkansas—which in the last two seasons originated 96 per cent of the southern car-lot movement; they largely supply the fresh peach markets up to the first part of August. The survey indicated that 18 per cent of the trees in commercial orchards in these States were under 5 years old and that 65 per cent were from 5 to 9 years old. This latter group, representing almost two-thirds of the trees, is now near the age of maximum yield and will soon decline in potential productivity. Reports from the various Southern States indicate that plantings in 1930 were relatively light and winter damage to trees was rather extensive. Considerable winter killing and injury occurred in Arkansas and in other south central States. The mortality and abandonment in the Southeast, due to various causes, have been rather heavy since the spring of 1929. For the South as a whole the number of young trees planted in commercial orchards annually since 1925 has probably averaged under 5 per cent of the present number of commercial trees. Assuming the average life of southern peach trees to be 13 to 15 years, the average rate of planting during the last six years would not be sufficient to maintain the present number of trees.

Although the present potential bearing capacity of southern peach orchards is sufficiently great to make possible large crops during the next few years, a moderate increase in the average rate of planting of the last five years would probably not result in excessive production five to eight years hence. It would appear to be a sound program for the southern peach industry to plant moderately and at a uniform rate during the next few years, and to avoid periods of extremely heavy planting which may later result in over-supply and low prices. Prices in the South during the last two years have been somewhat above those of recent heavy crop years and in general growers are inclined to give their orchards better care.

The 1929 survey showed that in Georgia, where nearly 40 per cent of the crop in 11 Southern States was produced during the last four seasons, 17 per cent of the commercial peach trees were under 5 years old, and 63 per cent were from 5 to 9 years old. For the three districts in Georgia these percentages were, respectively: Northern, 15 and 55; central, 15 and 72; southern, 19 and 56. In central Georgia the proportion of trees that are now in their prime is larger than in other parts of the State. In the southern part of the State where tree mortality has been higher during recent years and plantings have been relatively greater, the percentage of young trees is higher than in the other districts. This southern district has but little competition in the markets until the latter part of its shipping season.

In North Carolina, which produced 12 per cent of the southern crop during the last four seasons, only 11 per cent of the trees were under 5 years old in 1929 and 79 per cent were from 5 to 9 years old. In South Carolina, where the production has been about half that of North Carolina during the last four seasons, there are relatively more young trees than in North Carolina, since 25 per cent were under 5 years old in 1929. Tennessee, with an average production during the last four seasons of 8 per cent of the crop in 11 Southern States, had 14 per cent of the trees under 5 years old in 1929, compared with 75 per cent which were 5 to 9 years of age. The figures for both North Carolina and Tennessee indicate a sharp decline in potential production within a few years. In Arkansas, a larger proportion of the trees are young than in the other States in the survey, 36 per cent being under 5 years of age in 1929. If the average rate of planting during the 5 years preceding the 1929 survey is continued in Arkansas, the present number of bearing trees might be approximately maintained. Both Arkansas and Tennessee shipments usually encounter competition from Illinois peaches in mid-western markets after August 1, which is a factor to be considered by growers in these States who contemplate new plantings.

A comparison of the surveys of 1925 and 1929 indicates an increase in planting of some of the early maturing varieties in some southern districts. Although these early varieties have usually brought good prices at the beginning of the season, experience has demonstrated that there is a generally limited demand for them. These early varieties when planted in districts where they must compete on the markets with later maturing varieties produced farther south are likely to prove unprofitable.

In some districts in the South, as well as in other areas, many growers are confronted with serious problems of production due to difficulties in financing, disease of trees, and insect damage. The oriental fruit moth is a menace in the eastern, midwestern, and some southern peach districts. Most of the trees affected with phony peach disease in Georgia have been pulled out and the outlook for limiting the damage from this cause in Georgia and other Southern States is encouraging.

In the North Atlantic States only moderate changes in the bearing acreage are in prospect. The trend in New York and New Jersey appears to be slightly downward. In the Cumberland-Shenandoah area indications are that the number of bearing trees will continue at about the present level.

Illinois has become the leading peach State in the Middle West. The heavy 1929 crop in this State apparently marked the production peak from trees now planted. Tree mortality in Illinois is estimated at 8 to 10 per cent during the last season with plantings of about 2 per cent. The tree mortality was greatest in the lower east-central part of the State. No pronounced changes in the production trend are reported for other Middle Western States, although there has been some increase in plantings in southwestern Michigan.

In Colorado and Utah the rate of planting during the last five years indicates a considerable increase in bearing acreage. In the Pacific Northwest a small increase in bearing acreage is expected.

Continued very heavy production of clingstone peaches in California is expected for the next few years, although production is nearing the peak from trees now in the orchards. In 1930 approximately 6,376,000 bushels, or 27 per cent of the California clingstone crop, which is used largely for canning, were not harvested on account of market conditions. The number of young freestone trees is not sufficient to replace the loss that will normally occur among the old trees, and a continued decline in the production of freestone varieties is expected.

GRAPES

Grape growers face difficult marketing conditions for the next several years. Although production has definitely passed the peak, the bearing acreage is still so large that with normal weather conditions there is such a surplus of grapes in prospect as to cause difficulties in marketing and a continuation of low prices. There are no indications, therefore, of profitable returns to those vineyardists who are poorly located with respect to soil, who are growing undesirable varieties, or whose vines are infected with phylloxera. A considerable acreage of grapes in California has already been removed or abandoned, and indications point toward a further decrease in acreage during the next few years. There is an increasing recognition of the impossibility of obtaining profitable returns from the more poorly located vineyards.

Production of grapes in 1930 was considerably in excess of market requirements. Nearly 90 per cent of the total crop was again produced in California, with most of the remainder in New York, Pennsylvania, Ohio, Michigan, Missouri, and Arkansas. Yields in California were about normal and production amounted to 2,091,000 tons, compared with the record crop of 2,366,000 tons in 1928. About one-fifth of the entire California crop, or some 430,000 tons, is estimated to have been unharvested. But even with this part of the crop left on the vines, shipments of fresh grapes still met with much distress in marketing and very low prices prevailed. With present utilization of the crop, production approaching the 1930 levels can only result in the continuation of very low prices, since there are indications of a reduced demand both for raisins and for juice grapes. Several of the varieties produced in California are used either as juice, table, or raisin stock, and therefore the marketing of each type is closely affected by the demand for other types.

RAISIN VARIETIES

Production of fresh grapes of raisin varieties in California doubled from 1919 to 1928, rising from 700,000 tons to 1,400,000. Normal yields in 1930 resulted in the production of 1,222,000 tons, of which approximately 25 per cent are estimated to have been left on the vines. Raisins have since 1929 met severe competition in foreign markets and exports have been declining from the peak reached during the marketing season of 1928-29. Exports during 1929-30 were about 45 per cent under those of the preceding season, and foreign shipments for the first three months of the 1930-31 marketing season also show a decline from those of the corresponding period of 1929-30. Increased competition, particularly from larger crops of Australian raisins for which prices were reduced, together with decreased demand resulting from depressed economic conditions abroad, account largely for the reduction in our raisin exports. From a long-time point of view, it seems certain that competition from foreign raisin-producing areas will continue keen. There is no indication of a downward trend in the older raisin-producing areas in the Mediterranean Basin of Europe, while production in Australia, which is largely a post-war development, has been definitely upward during recent years.

JUICE VARIETIES

The estimated production of juice varieties in California in 1930 was 451,000 tons, of which some 20,000 tons were unharvested. During the 1930 season, juice grapes averaged lower on eastern auction markets than in any previous season, and also brought less than any other class of grapes. Acreage and production of juice varieties are so large that with present utilization they are likely to sell at low prices for several years.

TABLE VARIETIES

Production of California grapes designated as table varieties was somewhat less in 1930 than the previous 5-year average, but nearly 30 per cent of these were unharvested. Prices for Malaga and Flame Tokay on eastern auctions were lower than in any recent year. However, the Sultanina (Thompson Seedless), which is classed as a raisin variety, has been meeting with increasing favor for table use, and during the past season averaged higher on the auctions than any other variety.

AMERICAN TYPES

In the States east of the Rocky Mountains in which American-type grapes are produced, the combined production in 1930 was slightly larger than in 1929, but there is very little new acreage to come into bearing in these States and no indication of continued increases in production. However, heavy competition from low-priced California varieties continues to be one of the principal factors affecting the marketing of eastern grapes, and prices were much lower during the past season than in any previous year. New plantings of American-type grapes, except to maintain present bearing acreage or where near-by markets offer a good outlet, may well be postponed until there are more definite indications of an improvement in prospects.

STRAWBERRIES

The commercial strawberry acreage for harvest in 1931 promises to be considerably smaller than the acreage harvested in 1930 and decidedly lower than in any other year since 1926. The relatively small acreage for harvest in 1931 is largely the result of successive heavy acreage reductions since 1928 in the second-early and intermediate groups of States. In the early shipping States a 9 per cent reduction from the high acreage of 1930 is indicated. In the late-marketing and Western States as a whole, little change from the fairly constant acreage of the last three seasons is expected.

In the second-early and intermediate groups of States the indicated low acreage for picking and the poor condition of plants in the drought areas point to the probability of low yields and low production in 1931, and moderate increases of acreage may be justified for harvest in 1932 and 1933. In the early and late Eastern States and in the Western States acreages for picking in 1931 appear to be in line with the present needs of the country, although yields and production in 1931 may be relatively low in the drought areas of these States.

The estimated total of 156,300 acres for harvest in 1931 is 19,400 acres less (11 per cent) than the acreage harvested in 1930. It is approximately 77 per cent of the very large acreages of 1928 and 1929. Almost 80 per cent of the total acreage reduction is reported for the second-early and intermediate States. In the three States—Arkansas, Tennessee, and Alabama—a total reduction of 12,000 acres is reported for 1931.

In the early shipping States—Alabama, Florida, Louisiana, Mississippi, and Texas—the commercial strawberry acreage increased nearly 300 per cent during the last 10 years, and reached the peak of 42,900 acres in 1930. In 1920 these five States had only about 11 per cent of the total commercial strawberry acreage, but in 1930 the percentage had increased to 24. It is estimated that the 1931 acreage for picking in these States will be about 9 per cent below that of 1930.

In 1929 total production in the early shipping States amounted to 63,600,000 quarts, which was the largest production on record. Average prices for the 1929 crop were the lowest in many years and were 17 per cent less than the average price received by growers for the previous crop of 54,000,000 quarts. With average yields of the last five seasons, 1926–1930, the indicated acreage for picking in 1931 would produce 53,700,000 quarts of berries.

During much of the recent period of expansion of strawberry acreage in the early States, favorable business conditions prevailed and there was generally sufficient urban buying capacity to absorb the early supply of berries at relatively good prices. If there are average yields and an average ripening period in 1931, the estimated acreage for picking would not appear to be excessive unless the demand for early berries is considerably lower than it was during last season. With prospects for low production in the second-early States, the early States probably will meet with less competition than during recent years. It seems probable, however, that planting will be resumed in the drought areas of the second-early States in due time, and it is doubtful whether an increase in the present acreage of the early group of States as a whole is now justified.

In the second-early States of Arkansas, Tennessee, North Carolina, South Carolina, Virginia, and Georgia the 1930 production was about 45 per cent below that of 1929, although the acreage was reduced but 22 per cent. The unusually low yields in 1930 were to a large extent caused by drought conditions before and during the harvest season. In most of these States returns to strawberry growers have been discouraging during the last three years.

The reduction from 57,200 acres in 1928 to 41,400 acres in 1930 was largely the result of low prices received by growers during 1928 and 1929. In this group of States a further reduction to 30,400 acres for picking is indicated for 1931, which is the lowest acreage reported since 1920. The indicated acreage reduction for 1931 probably is due largely to involuntary reductions because of the extreme drought. Prospective acreage reductions are especially heavy in Arkansas, Tennessee, and Virginia, where a total of about 25,000 acres is estimated for 1931, compared with 49,600 in 1928 and 35,800 acres in 1930. In Arkansas the 1931 acreage is estimated at 6,300 acres below the 1930 acreage.

Owing to loss of plants and injury to established fields during the 1930 season, it is believed that average yields can not be obtained in many sections of the second-early States during the coming season. The 1931 acreage appears to be at a lower level than is desirable, and it seems advisable to look toward increasing the acreage to about the 1930 level of 41,400 acres which, with average yields of the five years, 1924-1928, would produce about 68,000,000 quarts.

In the intermediate States of Missouri, Kansas, Illinois, Oklahoma, Kentucky, Delaware, Maryland, and New Jersey, the 1929 harvested acreage of 57,500 acres was reduced to 43,600 acres in 1930, a reduction of 24 per cent. Preliminary estimates point to a further reduction in 1931 to a total of 39,200 acres which is 42 per cent less than the high figure of 1928.

The large acreage of 1928 produced a huge crop of 96,400,000 quarts, which brought the growers two-thirds as much as they received during the six years previous to 1928 when production averaged 77,000,000 quarts. Reports from most of the important intermediate States indicate that fields are in poor condition and stands are reduced, which suggest low yields for the coming season. This indication, together with an indicated net reduction of 4,400 acres from the 1930 low acreage, points to exceptionally low production in this group of States in 1931. The coming season appears to be a good time for a moderate increase over normal plantings and for putting the old fields in good condition, looking toward the 1932 crop.

In the late-producing States of Pennsylvania, New York, Ohio, Michigan, Indiana, Iowa, and Wisconsin, the 1931 acreage for picking apparently will be about 4 per cent less than that of 1930. In 1930 about 26,000 acres were harvested in these States, and production amounted to about 37,400,000 quarts. This acreage was the highest since 1924, although in no year between 1924 and 1930 did it fall below 23,800 acres. In 1930, yields were relatively low and the production of that year was the third lowest since 1921. The average 1930 price to growers was 2.8 cents per quart more, (19 per cent), than the yearly average price for the preceding four years. In this group of States as a whole, the strawberry acreage appears to be fairly well stabilized at a satisfactory level.

In the Pacific Coast States and in Utah the commercial strawberry acreage increased from 9,700 acres in 1922 to a peak of 24,000 acres in 1928. In 1930, the harvested acreage amounted to 21,900 acres, and in 1931 it is estimated at 22,700 acres. Production increased from 21,200,000 quarts in 1922 to 53,900,000 quarts in 1928 and then declined to 41,400,000 quarts in 1930. Berries in these States are sold as fresh fruit in western markets and to local plants. Berries were first preserved by the frozen-pack method about 20 years ago in Oregon when a few hundred barrels were so preserved. Use of the method increased in the Northwest to a peak output of 81,000 barrels of 50-gallon capacity in 1928 but declined with the smaller crops of 1929 and 1930. During the last few years frozen-pack berries from these States have been sold in retail markets. The indicated 1931 acreage in the Northwestern States does not appear excessive in view of the growth during recent years of the frozen-pack industry.

CANTALoupES

With average yields in the early cantaloupe sections in 1931 an acreage equal to that of 1930 would probably result in decidedly lower prices. The prospects in the intermediate States are similar to those in the early sections, but are slightly less serious. In the late States an acreage as large as that of 1930 or 1929, with average yield, should not depress prices below the prices prevailing during the last two years.

The acreage in Imperial Valley, Calif., in 1930 was 50,900 compared with 38,360 in 1929, an increase of 33 per cent, and an increase of 47 per cent above that of the previous 5-year average. The yield per acre, however, was considerably lower than any recorded in the last 13 years. Production was about average or about 15 per cent below 1929. The farm price was \$1.32 per crate in 1930 or 19 per cent below either the 1929 price or the 5-year average price. The Imperial Valley production practically represents the early cantaloupe production.

The intermediate group, in which California (outside of Imperial Valley), Arizona, Arkansas, Delaware, Indiana, Maryland, and parts of Texas are the main producing areas, increased acreage from 44,900 in 1929 to 51,190 in 1930,

an increase of 18 per cent. A low yield resulted in a 7 per cent smaller total production than that of 1929. With production lower and quality the best in years, the farm price still averaged 10 per cent below that of 1929, because of the generally lower level of food prices.

The late cantaloupe group—mainly Colorado, Michigan, New Jersey, New Mexico, and Washington—increased acreage only 3 per cent (22,680 in 1930 compared with 22,040 in 1929). A yield 6 per cent below that of 1929 resulted in a decrease in total production. The price for 1930 was 28 per cent above the 1929 price and 24 per cent above the previous 5-year average price.

WATERMELONS

Unless the 1931 watermelon acreage is reduced from the record plantings of 1930, returns may be as unsatisfactory as last year, when prices to growers were the lowest in more than 12 years. Money returns from the watermelon crop are largely dependent upon weather conditions in the consuming markets and upon the quality of the melons. Barring the uncertain effect of these factors upon prices in 1931, the demand for watermelons the coming season will probably be depressed somewhat by the general business situation.

Both acreage and total production in 1930 were at the highest levels ever recorded. The acreage for the entire country showed an increase of about 9 per cent over the high 1929 figure, and the production of about 75,000,000 melons exceeded by about 5 per cent the previous record crop of 1922. Car-lot shipments in 1930 reached a new peak of about 60,000 cars, compared with the previous peak of 55,000 in 1926. With production heavy, further difficulties resulted because of the unfavorable marketing situation which developed. Owing to the late season, shipments from the earlier producing sections were delayed until loadings from other districts became heavy, causing an unusually heavy movement during the latter part of June. Shipments from Georgia for the week ended June 28 were more than 4,500 cars, while Florida was still shipping very heavily, moving 3,500 cars during the week. The total figure for the country was more than 10,000 cars, the highest weekly movement on record.

The early watermelon acreage in Florida in 1930 was about 15 per cent below the record 1929 acreage and, owing to lower yields, the total production was 20 per cent below that of 1929. Because of increased competition from the second-early States, however, prices to Florida growers were reduced about 10 per cent as compared with the preceding year. Watermelon acreage in the Imperial Valley of California was slightly increased in 1930, but with reduced yields production was slightly below the 1929 record crop. But prices to growers were especially discouraging and were lower than for any year in more than a decade.

In the second-early States, in which Georgia contributed more than 50 per cent of the acreage and production in both 1929 and 1930, prices to growers in 1930 were much lower than in any other year in the last decade. Especially low prices were reported in Georgia and South Carolina, where increases in the 1930 production were largest. A marked increase in production also occurred in North Carolina and resulted in lower prices. In the States of Alabama, Arizona, Mississippi, and Texas, the 1930 acreage showed little change from 1929 and prices to growers averaged about the same as the previous year.

The tendency to increase acreage carried over into the late States, and in this group the possibility of a greatly increased crop was removed only by the sharp reduction in yields caused by the drought. Although the acreage in these late States was about 20 per cent larger than in 1929, the production was 8 per cent lower. Even with the reduced production, prices to growers were about 20 per cent less than in 1929 and were but slightly improved over the low 1926 figures.

PEANUTS

A moderate increase in the acreage of peanuts to be harvested for nuts in 1931 seems to be justified, but should producers base their planting operations on the relative returns from peanuts and from competing crops as has been the tendency in past years, an excessive acreage of peanuts will be planted. Returns from the 1930 peanut crop to late January have been slightly less than the low returns for the 1929 crop, but returns from competing crops

have been greatly reduced. An acreage of peanuts harvested for nuts in 1931 equal to that of 1930 would, with average yields, give a production of peanuts about equal to the average annual production of the last five years. Present indications point to the probability of an unusually light carry-over of peanuts at the beginning of the 1931 season. In sections in which it is a common practice to use the peanut crop as feed for livestock some increase in acreage for this purpose in 1931 may be desirable.

The 1930 crop of peanuts harvested for nuts is the smallest since 1926. The production of 741,000,000 pounds in 1930 is slightly less than the 5-year average production, 1924-1928, inclusive, and is 20 per cent less than the large 1929 crop. The 1930 plantings of 1,108,000 acres were about 16 per cent below the 1929 harvested acreage. The small production was also due to some extent to the drought, which resulted in unusually low yields in Texas, Oklahoma, Arkansas, and Virginia. In the Southeastern States movements from the farm this season have been unusually rapid and returns to growers are slightly improved as compared with last year. Because of the reduced yields per acre and low average quality of the crop, returns per acre to growers in the Virginia-North Carolina section and in the Southwest are materially less than the low returns of the preceding season.

The large 1929 crop of 929,000,000 pounds brought the lowest price per pound since 1922. Largely because of the low prices and decreased imports, consumption of domestic peanuts for the 1929-30 season shows a further increase as compared with recent years and is the largest on record. Owing to the relatively poor quality and low prices of the 1929 crop, takings by oil mills were in larger volume than in any year since the 1921-22 season. The low quality of the 1930 crop indicates that takings of oil mills especially of southeastern runners will again be of considerable volume during the current marketing season. The high disappearance level during the 1929-30 season resulted in a relatively light carry-over and improved the situation for the 1930 crop. It now appears that the carry-over will be still less at the beginning of the 1931 harvest season.

Virginia and North Carolina grow chiefly the Virginia-type nuts, and these States harvested about 360,000 acres in 1930. This was a reduction in acreage of about 5 per cent as compared with the high acreage for 1929. Because of unfavorable weather, yields were reduced and the production of about 289,000,000 pounds for these States was 81,000,000 pounds less than the large production of 1929. Owing to tariff restrictions and low prices of domestic peanuts, imports from China for the 1929-30 season, which are of the Virginia type, were the smallest in more than 20 years. Imports for the season ended November 1, 1930, were the equivalent of about 10,000,000 pounds of unshelled peanuts and only 22 per cent of the relatively small imports for the preceding season. Carry-over of domestic farmers' stock Virginias at the beginning of the present season has been estimated at about 300,000 bags, which is only 40 per cent of the estimated carry-over of the preceding season. The 1930 crop of Virginia-type peanuts runs heavily to the larger sizes. Imports are principally of the large-size peanuts, and unless there is a further advance in prices for the larger sizes, imports during the coming season are expected to continue at low levels.

In 1930 about 562,000 acres of peanuts were harvested for nuts in Georgia, Alabama, Florida, and South Carolina, where both Spanish and runner types are grown. This figure is 97,000 acres below the 1929 acreage for these States. Production in the Southeastern States in 1930 was about 360,000,000 pounds, which is 10 per cent less than the 1929 production, although the 1930 acreage was 15 per cent less than the 1929 acreage. Because of extensive taking by oil mills of the 1929 crop, especially the runner type of peanuts, the large supply of low-grade peanuts from the 1929 crop in these States had disappeared and the carry-over of the better grades at the beginning of the present marketing season was reported to be relatively light. Returns to growers for peanuts in these Southeastern States are little improved over the low returns received for the 1929 crop. Returns from competing crops, however, are materially lower than last season and this may result in an excessive increase in the acreage of peanuts harvested for nuts during 1931.

The 1930 acreage of peanuts, chiefly of the Spanish type harvested for nuts in Texas, Oklahoma, and Arkansas is estimated at 145,000 acres, which is a decrease of about 40 per cent from the large 1929 acreage and the smallest acreage harvested since 1926. Because of the drought, the yield per acre in

these States was the lowest in years, and the production is estimated at about 70,000,000 pounds, a decrease of about 45 per cent as compared with the 1929 production. The yield per acre in these States was much below average in both 1929 and 1930. Present indications are that the carry-over of good-quality Spanish stock from these States at the beginning of the 1931 harvest season will be negligible, as was the case in the current season.

PECANS

The 1931 outlook indicates, as did that of the previous year, a material increase in pecan production during the next decade. There has been heavy planting of trees of improved varieties during the last 10 years, and a large proportion of the trees of such varieties, over 10 years old, have not come into full production. A pecan-tree survey made in 1929 indicates that, of an estimated total of 8,000,000 trees of improved varieties, 65 per cent, or about 5,000,000 trees, were planted during the 10 years ended in 1929. Plantings during the five years ended in 1929 constituted about 40 per cent of the total number of trees of improved varieties. About 70 per cent of these improved trees under 10 years of age are in States east of the Mississippi River; in order of importance, they are Georgia, Alabama, Mississippi, Florida, South Carolina, and North Carolina. These States had about 6,000,000 trees or 79 per cent of the total trees of improved varieties. There has been considerable top working of seedling trees to improve varieties, especially in Texas and Oklahoma; the total improved trees in these two States including top-worked trees is estimated roughly at about 1,000,000, or 15 per cent of the improved trees in the United States. Of a reported total of approximately 10,500,000 forest and cultivated seedling trees in 1929, 27 per cent were of nonbearing age.

Total estimated production of pecans in 1929 was 38,005,000 pounds, of which 7,426,000 pounds were improved and 30,579,000 pounds were seedling nuts. Production in 1930 is estimated at 10,809,000 pounds of improved and 26,441,000 pounds of seedlings or a total of 37,250,000 pounds. The average yearly total production for the period, 1926-1930, is estimated at 49,650,000 pounds, of which 11,607,000 pounds are improved and 38,043,000 pounds are seedlings. A large proportion of the seedling nuts are shelled and used by confectioners and bakers.

The extent to which the indicated increase in bearing trees will be realized and the effect on total production are problematical, but this increase in production probably will not be so large as the rapid expansion in pecan plantings during the last few years would indicate. Early optimism regarding the yields of pecans that may be expected has been tempered by the hazards incident to the production of the crop.

Some individual growers have obtained profitable average yields, but there are many who have not been so successful. A study of the yields obtained in 1928 from 75 representative orchards of improved varieties 15 to 19 years of age, selected at random in commercial producing areas east of the Mississippi River, showed an average of 145 pounds per acre. Thirty-two of these orchards, having 72 per cent of the acreage in the 75 orchards had a yield of from 5 to 160 pounds per acre; 22 orchards having 21 per cent of the entire acreage had a yield of from 161 pounds to 360 pounds per acre; and 21 orchards having only 7 per cent of the entire acreage had a yield of over 360 pounds per acre. The average per orchard was 103 acres for the first group, 43 acres for the second, and 14 acres for the third.

Another phase of the survey covering 920,000 trees of improved varieties, 10 years old and over, indicated a yield in 1928 of approximately 6 pounds per tree. On a basis of 17 trees per acre, a yield of approximately 100 pounds per acre would be indicated in a year considerably above average in production. All these trees were over 10 years of age and 82 per cent were under 20 years.

Selection of suitable varieties and locations is important in order to minimize the risks incident to such a long-time investment. Growers in most sections should be in a position to finance the development for a period of at least 10 years before expecting production of any consequence.

From the marketing standpoint it appears that there is room for considerable expansion before the potential demand is satisfied. A recent marketing survey indicates that probably less than one-half of the retail grocery stores in the United States carried unshelled pecans at any time during the 1928 marketing season. For the 6-year period, 1924-1929, inclusive, the total per

capita supply of pecans in the United States on an unshelled basis has averaged around 0.39 pound compared with 0.71 pound for almonds and 1.07 pounds for English walnuts. Unshelled pecans reaching the consumer have probably averaged less than one-sixth of a pound per capita. Probably 80 per cent of the annual retail sales of unshelled pecans are made during the period from the arrival of the new crop in November to the end of December.

Improved pecans have commanded a higher price than have other popular nuts, but there has been a slight downward trend in prices of improved pecans during the last five years. Some further reductions in the trend can be expected as production of pecans increases, especially as a considerable increase in the production of English walnuts is also expected. Of a total of 127,480 acres of walnuts in California in 1929, 31 per cent were classified as of nonbearing age; of 6,000 acres in Oregon more than 50 per cent were of nonbearing age. On the other hand, no increase in the production of almonds is indicated during the next few years.

Pecan production is confined to North America and the foreign trade is now relatively unimportant. During recent years annual imports of seedling pecans from Mexico have averaged less than 1,000,000 pounds. Objections by the trade to these imports have been due not so much to the quantity imported as to the low average quality of these nuts and their effect on consumption. Because of competition from cheap European walnuts, filberts, and almonds, it is unlikely that any material foreign demand for pecans could be developed at present prices.

COTTON

The following statement presents a brief review of certain phases of the cotton situation during recent years and in revised form brings up to the early part of January, 1931, the statement issued for the Southern States in November, 1930. In conformity with existing legislation that limits the scope of reports on cotton, no attempt has been made to make any forecast or prediction with respect to future prices of cotton or the trend of these prices.

The general trend in cotton prices from December, 1923, to the beginning of the 1929-30 season was downward. Cotton prices declined severely throughout 1929-30 and in December, 1930, were at the lowest level since 1915. The outstanding cause of the price decline during the last 20 months was the world-wide business depression, which reduced the demand for cotton. World consumption of American cotton was at high levels from 1926-27 to 1928-29, inclusive, but decreased 2,053,000 bales or about 14 per cent from 1928-29 to 1929-30. The rate of consumption continued to decline throughout 1929-30, reaching a low point in August, 1930, and since September, 1930, increases have been only about seasonal. The world carry-over of American cotton on August 1, 1930, was about 1,800,000 bales greater than on the same date of the previous year. This carry-over, added to the current crop, gives a world supply of American cotton for the 1930-31 season of about 20,500,000 bales, which is 1,200,000 bales greater than for 1929-30 and about equal to the annual average supply for the 5-year period 1925 to 1929. Cotton acreage in the United States increased rapidly following the World War, and in the last five years it has remained at relatively high levels.

PRICES

Commodity prices in general have fallen materially during the last 20 months, both in this country and abroad. Cotton prices declined more than the average of all commodities. In the 1929-30 season the price of Middling $\frac{3}{8}$ -inch cotton averaged 15.79 cents per pound at the 10 designated spot markets, in comparison with 18.67 cents the previous seasons and 19.72 cents in 1927-28. For December, 1930, the price averaged 9.16 cents, compared with 11.81 and 10.77 cents in the lowest months of the 1926-27 and 1920-21 seasons, respectively. Except for 1914-15 and 1908-09, prices in December, 1930, were below any seasonal average since the 1904-05 season.

CONSUMPTION

World consumption of all cottons in 1929-30 fell 4 per cent below that of 1928-29, the reduction being equivalent to about 700,000 American bales as calculated from reports of the International Federation of Cotton Spinners. The

consumption of Indian and sundries cottons, however, was higher than in 1928-29 by about 1,100,000 bales of equivalent weight. Consumption of Egyptian cotton fell slightly.

Reduction in the total world consumption came almost entirely in American cotton. From 1928-29 to 1929-30 the decrease was 2,053,000 bales or about 14 per cent. World consumption of American cotton in 1929-30 amounted to 13,023,000 running bales, compared with 15,076,000 in 1928-29, 15,407,000 in 1927-28, and the record consumption of 15,780,000 in 1926-27, according to statistics of the International Federation of Cotton Spinners. Of the 2,053,000 bales by which the world consumption of American cotton was reduced in 1929-30, approximately one-half of the reduction occurred in the United States and the other half in Europe. Consumption of American cotton declined 436,000 in Great Britain; approximately 100,000 bales each in Germany, France, and Russia; 81,000 bales in Italy; and 56,000 bales in Czechoslovakia. On the whole, Europe used more Indian and sundries cottons and less American and Egyptian. Asiatic countries consumed as much American as they did in the previous season, but their increase in consumption was of Indian and sundries cottons.

Domestic consumption of American cotton, as reported by the Census Bureau for the five months ended December 31, 1930, was 1,936,000 bales, as compared with 2,604,000 for the corresponding period in 1929. World consumption of American cotton for the five months ended December 31, 1930, according to the New York Cotton Exchange Service, amounted to 4,561,000 bales, compared with 5,860,000 bales for the like period in 1929 and with 6,295,000 and 6,963,000, respectively, in the corresponding five months of 1928 and 1927.

The rate of cotton consumption usually declines more rapidly during depressions and increases more rapidly during recoveries than does the average of all industrial production. In the present depression cotton consumption in the United States fell sharply until August of 1930 and has made no more than a seasonal recovery since, although industrial production in general declined until December. The textile situation in Great Britain has shown no improvement. Further business recessions are developing in western Europe, where until recently a large part of the world depression had been avoided. Germany and the rest of central Europe are still depressed, but the increased activity in the Polish cotton textile industry in recent months may indicate that consumers' requirements will necessitate some more general increase in mill activity during the next few months. The depression continues in Japan, although a sharp curtailment in cotton textile mill activity in earlier months relieved the market of excess stocks of goods. In Japan, as in Europe, reduced purchasing power is causing consumers to turn more to the lower-priced coarse goods, and this favors the use of Indian cotton which is cheaper than American cotton. Trade in the interior of China has been favored by lessening civil strife during recent months, but the value of the Chinese dollar has again declined to new low levels.

SUPPLY

The American crop of 1929 amounted to 14,825,000, equivalent 500-pound bales, and the world carry-over of American cotton at the beginning of the cotton year amounted to about 4,459,000 running bales, according to the Census Bureau, giving a total supply of about 19,300,000 bales of American cotton. This was 1,500,000 bales smaller than the supply of 1927-28, when prices averaged 19.7 cents per pound at the 10 markets and about 250,000 bales smaller than in 1928-29, when prices averaged 18.7 cents per pound. The lower prices in 1929-30, despite smaller supplies, were the result of depressed demand. As domestic consumption and exports fell, cotton failed to disappear at the rate of the last few years, and on August 1, 1930, the carry-over in this country was the largest since 1921. Stocks of American cotton in foreign countries had been reduced, but with the large increase in the United States the world carry-over of American cotton rose from 4,459,000 bales on August 1, 1929, to 6,242,000 bales on August 1, 1930, according to the Census Bureau. The crop was estimated in December, 1930, at 14,243,000, equivalent 500-pound bales. The total composite supply of American cotton in the world is thus indicated to be about 20,500,000 bales for 1930-31. The crop plus carry-over amounted to 19,300,000 bales in 1929-30 and 19,557,000 bales in 1928-29. The indicated supply of American cotton remaining in the United States on January 1, 1931, amounted to 12,700,000 bales compared with about 10,000,000 bales a year earlier and 9,500,000 bales on January 1, 1929.

World stocks of foreign-grown cottons, according to commercial reports so far available, did not show much change on August 1, 1930, as compared with a year earlier. Stocks of Egyptian cotton were 275,000 bales larger and, probably because of the Egyptian Government's stabilization activities, this increase in stocks was mostly in Alexandria. The area planted to cotton in India for 1930 is officially estimated at 2.4 per cent below that of 1929 although the December estimate of production was 1.7 per cent higher in 1930 than the revised December estimate for 1929. It should be observed, however, that last year's official estimate placed production considerably below the commercial crop as arrived at by exports, consumption, and changes in stock. The Egyptian crop of 1930 is estimated at 2.6 per cent below that of 1929. The Russian acreage has been increased rapidly in accordance with the long-time development program, and production appears likely to be between 1,700,000 to 2,000,000 bales for 1930 according to commercial sources and reports received by the American agricultural attaché at Berlin, from Russian sources. The Russian crop for 1929 is now estimated at 1,310,000 bales. A record production of 1,512,000 bales was reported officially for 1915. Production in 13 countries for which reports have been received, including the United States, totals 22,450,000 bales this year compared with 22,394,000 bales last year. The estimated world total including China for 1930-31 is now placed at 26,400,000 bales compared with 26,300,000 in 1929-30.

Cotton acreage in the United States has expanded markedly since the World War and during the last five years acreage has been at high levels. The average number of acres of cotton harvested annually from the crops of 1925 to 1929 in the United States, was 44,882,000, compared with 34,022,000 for the five years immediately following the World War. The harvested acreage of the 1926 crop was 47,087,000—the largest in history. Low prices that year were followed by an acreage reduction of 15 per cent in 1927. By 1929, however, acreage had again increased and 45,793,000 acres were harvested, but the price averaged only 15.79 cents for the season, and in 1930 acreage fell slightly. The harvested area of the 1930 crop was estimated on December 1, 1930, to be 45,218,000 acres. Farmers usually reduce the cotton acreage and spend less for fertilizers following years of low prices. The maximum reduction in acreage since 1900 has been 15 per cent, which occurred in each of the years 1915, 1921, and 1927.

Yields in the United States as a whole were held in check during 1929 and 1930 by droughts but the drought influence has been mitigated to some extent by the reduced weevil damage which has resulted. The number of weevils entering hibernation in the fall of 1929 were small because of the drought in that year, and low winter temperatures destroyed many weevils in hibernation. These conditions and the drought prevented widespread weevil damage in 1930. At present there are comparatively small numbers of weevils in the central and western parts of the belt, despite some increase in the number following the late fall rains. In the Atlantic States the weevil numbers are believed to be about the same now as in the corresponding period of 1930. Yields in the Eastern States are also influenced by the quantities of fertilizers applied, and following years of reduced income, expenditures for fertilizers are lowered.

Yields in the belt as a whole for the four years 1927 to 1930 were close to the 10-year average of 155 pounds per acre. This average is influenced slightly more by the very low yields of 125 pounds in 1921, 141 pounds in 1922, and 131 pounds in 1923, than by the high yields of 183 pounds in 1926 and 178 pounds in 1920. It is evident, therefore, that yields during recent years have been only moderate.

SUPPLY AND PRICES FOR DIFFERENT STAPLE LENGTHS

The domestic supply of cotton with a staple length of thirteen-sixteenths of an inch and shorter increased 917,000 bales or 42.5 per cent from 1928-29 to 1929-30, and the supply of cottons having a staple length of seven-eighths of an inch and longer decreased 564,000 bales or 3.9 per cent in the same period. This increase in the supply of the shorter staple cotton in 1929 was apparently due, in part, to the 1929 drought, which resulted in a larger proportion of the shorter staples in the 1929 crop. Cotton ginned up to December 1, 1930, compared with ginnings for the corresponding period in 1929, showed a decrease of

862,200 bales or 33 per cent, for cotton with a staple length of thirteen-sixteenths of an inch and shorter and a decrease of 202,000 bales or 32 per cent for cotton with a staple length of $1\frac{1}{4}$ inches and longer; while cotton of staple lengths from seven-eighths of an inch to $1\frac{3}{4}$ inches, inclusive, showed a combined increase of 1,050,500 bales or 11 per cent. Cotton with a staple length of thirteen-sixteenths of an inch, sold in central markets at discounts of \$2.50 to \$4 a bale in 1928-29, as compared with \$7.50 to \$10 a bale in 1929-30 and about \$5 in December, 1930. Premiums for each staple length from fifteen sixteenths of an inch to $1\frac{1}{4}$ inches gradually increased during 1928-29 and reached a high point toward the end of 1928-29 and the beginning of 1929-30. During the early part of 1929-30, premiums on all staples declined somewhat but the average premium of the season for each staple was above that for 1928-29. From August, 1930, premiums declined further and although they have advanced somewhat from the low point they are still below August levels. Relative, however, to the level of cotton prices, premiums are still above what they were during the corresponding periods in 1928 and 1929. For example, the average staple premium on inch cotton amounted to about \$5 per bale in 1928-29 compared with about \$6 per bale in 1929-30 and to about \$4.60 per bale in December, 1930. These changes in staple premiums and discounts indicated that, compared with the demand, the supply of cotton with a staple length of thirteen-sixteenths of an inch and shorter in 1929-30 was relatively greater than for cotton of any other staple length. The disappearance of cotton with a staple length of thirteen-sixteenths of an inch and shorter increased 626,000 bales, or 31 per cent from 1928-29 to 1929-30, while the combined disappearance of cottons having a staple length longer than thirteen-sixteenths of an inch decreased 2,861,000 bales, or 23 per cent. In other words, although proportionately more of the shorter than of the longer lengths were consumed in domestic mills or exported, this was accomplished only at a distinctly greater price reduction.

PRODUCTION CREDIT

The outlook for credit with which to finance the production of the 1931 cotton crop appears less favorable than for any recent year. Local lending agencies, in general, will not be able to extend the usual volume of new advances as a result of the reduced flow of income into agricultural communities during the last marketing season. This reduction in income has been reflected in a lower level of deposits, and at the same time has been responsible for a carry-over of 1930 loans that is greater than usual. The numerous bank failures in many sections of the South have accentuated the unfavorable credit situation. As a result of low cotton prices in 1928, it may be recalled that the volume of funds available for financing the 1927 cotton crop was greatly reduced. A somewhat greater curtailment can be anticipated for the year 1931. The unfavorable credit situation, however, will be mitigated to some extent through the emergency loans from the drought relief fund. Congress has appropriated \$45,000,000 for making loans in the drought-stricken areas, a large part of which will be loaned in cotton-growing States. Such loans may be used for the purchase of seed, fertilizer, feed for work stock, and gas and oil for tractors.

COST OF PRODUCTION

The cotton crop of 1930 probably was produced at a lower cost per acre than either of the preceding two crops. The dry growing season which made weed control relatively easy probably resulted in lower labor expenses to farmers who depended on hired labor. Because of the drought, expenditures for weevil control were also below normal. Labor during the picking season was plentiful, and picking rates were lower than in any season during the last 15 years. Labor will be plentiful next season and wage rates, at least through the growing season, are likely to be lower than in 1930. Prices of fertilizers are now lower than they were a year ago, and with prospects for reduced sales, further reductions in fertilizer prices seem probable. On the other hand, supplies of home-grown food and feed crops in the drought areas are the smallest in years, and the quantity that farmers in these areas will need to buy will probably entail relatively heavy expenses during the coming months.

TOBACCO

The general market outlook for tobacco is less favorable than it was a year ago; the domestic demand has weakened, and the foreign demand is only fair. Some decrease in acreage in 1931 from the indicated high total of 2,110,300 acres harvested in 1930, therefore, seems desirable. Reductions in the flue-cured and Burley acreages appear especially desirable since stocks of these types are becoming burdensome. Reduced plantings as compared with last year also appear desirable for One Sucker. On the other hand, the situation for fire-cured tobaccos, Maryland, Virginia sun-cured, and for Green River tobacco, and most cigar types is sufficiently encouraging to justify plantings about the same as in 1930. Tobacco acreage in 1930 was at the highest level on record and was about 3 per cent greater than the previous high acreage of 1929. The record acreage of 1930 was largely brought about by increased plantings of Burley and flue-cured tobacco which together represented about 77 per cent of the total acreage harvested. Although the average yield per acre was the lowest in more than 30 years, largely because of the drought, the total 1930 production is estimated at 1,510,308,000 pounds, which is only slightly less than that of 1929.

The crop in many districts was of unusually low quality. Because of low quality, large supplies of flue-cured and Burley tobacco, and generally lessened demand, prices paid to growers for the 1930 crop were unusually low.

Of outstanding importance in 1930 was the failure of cigarette consumption in this country to record the usual increase of 9 to 12 per cent which occurred each year during the last decade. During the early months of 1930, consumption showed increases over the corresponding months of 1929 but declined in the later months. The total cigarette consumption for the year shows an increase of only 0.5 per cent from the high 1929 level. Cigar production continued to decline, but at a more pronounced rate than in other recent years. Trends of consumption of different classes of cigars remained substantially unchanged in 1930. The ratio of class A cigars, the 5-cent group, to the total has continued to increase, although the number manufactured shows practically no change from 1929. The medium and most of the higher priced classes have diminished in numbers and percentage of total. The total consumption of chewing and smoking tobacco also continued to decline, although it seems probable that the decrease occurred mainly in chewing forms. A slight increase in snuff consumption is indicated for 1930.

Total exports of leaf tobacco during the 1930 calendar year, most of which were from the 1929 crop, show an increase of 2.4 per cent over 1929, but declining exports in the late months of 1930 suggest the probability of reduced foreign takings of 1930 tobacco.

The outlook for exports of American tobaccos of 1931 production, in general, is probably no less favorable than the situation now existing as to the 1930 crop. Flue-cured tobacco continues in good demand in Great Britain, and appears little affected by competition from colonial-grown leaf. Because of a decrease in exports to China and other countries, however, the total exports of flue-cured tobacco from August to December were 36,052,000 pounds, or 14 per cent, less in 1930 than in 1929. In China the low silver exchange is one of the factors which is affecting trade adversely, but the well-maintained activity in cigarette manufacture and improved political stability may lead to some improvement a year hence.

Continental Europe, although still suffering from industrial depression and unemployment, is taking tobacco in large volume, especially American fire-cured types. To some extent this probably represents stocking up on low-priced goods in anticipation of a higher German tariff on tobacco. European demand for flue-cured tobacco appears to have been well maintained in 1930. Cigarette consumption is increasing there as elsewhere, although "Oriental" tobaccos are much more important in cigarette manufacture than is American.

CIGARETTE TYPES

FLUE-CURED, TYPES 11, 12, 13, AND 14

From present indications the prices paid to growers of flue-cured tobacco for the 1931 crop are likely to average lower than for the 1930 crop, if the last year's acreage is maintained. The basis for this conclusion lies in the prospect that stocks on July 1, 1931, will be materially larger than those of July 1, 1930,

and to the fact that the trade and industrial depression of recent months has placed a temporary check on the expansion of the cigarette industry. Uncertainties in the demand for flue-cured tobacco pertain both to the domestic and foreign markets and their relation to total disappearance.

Annual disappearance of flue-cured tobacco rose from 410,798,000 pounds during the year ended July 1, 1923, to 741,615,000 pounds during the year ended July 1, 1930. This represents an increase of 80 per cent in seven years, with decreases shown in only two of those years. A similar period of increasing consumption took place prior to July 1, 1920. The disappearance in the year ended July 1, 1920 was 510,557,000 pounds compared with 452,140,000 pounds the preceding year, and 319,829,000 pounds the second preceding year. It is a significant fact that the break in business and industrial conditions which took place in the summer of 1920 initiated a period of three years during which the disappearance of flue-cured tobacco reached successively lower levels, and there is little basis for assuming that the present depression will result differently.

Domestic consumption of flue-cured tobacco tends to become more and more closely associated with cigarette consumption, less with tobacco chewing, and possibly less with smoking. Production of small cigarettes in the United States increased from 47,430,105,055 in the calendar year 1920 to 108,705,505,650 in 1928, an average annual increase of nearly 11 per cent. An increase of approximately 12 per cent in 1929 was indicated by stamp sales. A temporary check was given to cigarette consumption in the United States by the depression of 1920-21. Production of small cigarettes in 1919 amounted to 53,119,784,232, the highest total up to that time. In 1920 the total was approximately 11 per cent less, and it was not until 1922 that the 1919 figure was exceeded.

In 1930, for the first time since 1920, there are again definite signs of a slowing up in cigarette consumption. For the year 1930 the sales of cigarette stamps exceeded those for 1929 by only 0.5 per cent. Stamp sales during the first half of 1930 were 1½ per cent greater than in the corresponding period of 1929, but declines occurred in the latter half of the year. Judging by experience in 1920-21, it would be hazardous to assume that domestic consumption of cigarettes, and therefore of flue-cured tobacco, will resume an upward trend in the immediate future, and this consideration lends significance to the strong prospect that leaf stocks on hand July 1, 1931, will be materially larger than those of July 1 last.

The foreign situation for flue-cured tobacco contains some uncertainties, together with some hopeful signs. The least encouraging phase at this time is the weakness of Chinese imports since the opening of the market in August. Exports to China reached a total of 131,516,000 pounds during the marketing year from August, 1928, to July, 1929, and during the succeeding 12 months were only slightly less. Exports to China from August to December were only 49,456,000 pounds in 1930, compared with 71,952,000 pounds in 1929.

The outlook in the United Kingdom is reported to be good, both from the long-time and short-time viewpoints. Disappearance of American flue-cured tobacco in that country is increasing, which tends to offset the effect of the larger British stocks on hand on July 1, 1930, compared with previous years. Exports of flue-cured tobacco to the United Kingdom during the months August to December, inclusive, were 130,105,000 pounds in 1930 compared with 134,146,000 pounds in 1929. Total exports of flue-cured tobacco during this period amounted to only 222,646,000 pounds in 1930 compared with 258,698,000 pounds in 1929, indicating that exports for the year ending July 1, 1931, will be considerably smaller than for the 1929-30 season.

With signs of weakness in the domestic market and in some foreign outlets for flue-cured tobacco it is important to consider prospective supplies. Stocks of old tobacco on hand July 1, 1930, amounted to 599,262,000 pounds. Production in 1930, according to the latest available estimates, was 790,950,000 pounds, making the record total supply of 1,390,212,000 pounds.

In view of the slackened rate of export movement for flue-cured tobacco during the present season, and the slowing up of the cigarette industry, total disappearance for the year ending July 1, 1931, is expected to be less than was recorded during the preceding 12 months, and a substantial increase in the carry-over into the next marketing season will result. Under these circumstances growers' prices in 1931-32 materially lower than present levels may be looked for unless a sharp curtailment of production is effected.

BURLEY, TYPE 31

The market outlook for Burley tobacco in 1931 is not favorable, and a continuation of the high 1930 acreage will probably result in lower average prices than are indicated for 1930. Burley acreage has been increasing rapidly since 1927, that in 1930 being estimated at 454,400 acres, the largest on record. Although the drought last year reduced the average yield per acre to the lowest ever recorded, the total production was but little less than that of 1929 and considerably in excess of annual consumption. The 1930 acreage with average yields would have resulted in a production far beyond any previous record and prices to growers materially lower than those paid during the present marketing season.

The annual disappearance of Burley tobacco has not increased materially in recent years, for whereas larger quantities are used each year in cigarette manufacture, the quantity used for other purposes is diminishing. The total annual disappearance exceeded 300,000,000 pounds only in the 1926-27 season when almost three times the usual quantity was exported. Production in excess of consumption has the effect of building up stocks which, as they become more and more burdensome lead to sharp declines in price.

Stocks of Burley tobacco on October 1, 1930, amounted to 373,032,000 pounds, an increase of 40,652,000 pounds over those of October 1, 1929. A further increase in stocks on October 1, 1931, is probable and conditions are approaching those which prevailed in 1926 when the average price fell to 13.1 cents per pound from 19 cents in 1925.

In view of the less favorable market outlook, Burley growers would do well to give particular attention to the selection of soils for their plantings in 1931. The relatively low quality of last year's crop indicates that stocks of medium and common tobacco will be more abundant than of good quality cutting grades, and that such tobacco will be in poor demand during the next marketing season.

MARYLAND, TYPE 32

An acreage of this tobacco equal to or slightly greater than that of 1930 seems justified. Acreage was increased in 1930, but because of dry weather the production was 6,650,000 pounds lower than that of 1929. Stocks on January 1, 1931, are not expected to exceed 15,000,000 pounds and the total supply will probably be about 8,000,000 pounds less than that of a year ago. Stocks on January 1, 1932, are likely to be even less than present stocks and the market outlook appears to be favorable.

MANUFACTURING TYPES

VIRGINIA FIRE-CURED, TYPE 21

The outlook for Virginia fire-cured tobacco is sufficiently favorable to warrant a continuation of the 1930 acreage. Stocks of old leaf on October 1, 1930, were 27,917,000 pounds, and the lowest since 1923. In view of the reduction of the 1930 crop by drought to about 18,000,000 pounds, it is expected that stocks will be further reduced by October 1, 1931. An acreage equal to that of last year, if average yields are obtained, would produce from 25,000,000 to 28,000,000 pounds and would result in a supply situation about like that of 1919 when encouraging prices were received by growers. Prices in 1930 reflect the unusually low quality of the crop rather than any marked change in demand. Prices paid for good quality tobacco over 16 inches in length are equal to or better than a year ago. In view of the scarcity of high-quality tobacco in the 1930 crop, it may be assumed that the better grades will be in greater demand in 1931, and that if the lower grades resume their normal relationship to the total crop, prices will average higher than for the 1930 crop.

KENTUCKY AND TENNESSEE FIRE-CURED TYPES 22 AND 23

The outlook for these types is probably better than current prices indicate, provided acreage is not increased. Prices at present are adversely affected by the relatively low quality of the 1930 crop and the quantity of short leaf, and can not be taken to indicate future prospects. Although the trend of exports of fire-cured tobacco in recent years has been downward, exports during

1930 tended strongly upward, and disappearance during the year ended October 1, 1930, was 147,871,000 pounds, exceeding disappearance for the preceding 12 months by 33,637,000 pounds. Production in 1929 was unusually large but the resulting large total supply has been materially reduced, being 239,074,000 pounds on October 1, 1930, compared with 254,926,000 pounds on October 1, 1929. Stocks on October 1, 1930, amounted to 107,055,000 pounds. In view of the reduction in last year's crop, due to drought, and assuming a fairly stable export demand, it is likely that stocks by next October will fall to 90,000,000 pounds or less, thus creating an improved market situation. If acreage remains the same as in 1930 and yields equal to the average for the past five years are obtained, a production of about 141,000,000 pounds may be anticipated, making a total supply of about 230,000,000 pounds, or 9,000,000 less than that of October 1, 1930.

HENDERSON FIRE-CURED TYPE 24

The annual disappearance of type 24 seems to have become stabilized around 9,500,000 pounds. Production during the last four years has varied from 4,200,000 pounds in 1927 to a high of 9,492,000 pounds in 1929. October 1 stocks have been less than 1,000,000 pounds during the last two years. The acreage in 1930 was sufficiently large, with average yields, to supply the demand for Henderson fire-cured tobacco, and no increase in acreage in 1931 seems advisable.

ONE SUCKER, TYPE 35

The outlook for this type is not favorable. Stocks on October 1, 1930, were 25,123,000 pounds, 3,749,000 pounds (about 10 per cent) larger than those of October 1, 1929, and a further increase is likely to be shown by October 1, 1931. Acreage was materially increased last year, and despite the reduced yields per acre the production was about equal to that of 1929. Because of the increase in total supply, resulting from the larger stocks, prices are low and no improvement in prices in 1931 is likely to occur unless production is decreased.

GREEN RIVER TYPE 36

The outlook for Green River tobacco seems favorable, provided there is no increase in acreage. Production and the October 1 stocks both were less in 1930 than in 1929, and stocks next October are likely to be somewhat lower than they were on October 1, 1930. The same number of acres as harvested last fall would, with usual yields, produce more tobacco than was produced in the dry season just closed, so that the situation as to total supply would be about the same.

VIRGINIA SUN-CURED TYPE 37

The outlook for Virginia sun-cured is favorable for an acreage about the same as that harvested in 1930. The cause of present low prices appears to be the poor quality of the 1930 crop, since the supply is unusually low and the quantity produced is less than the normal annual consumption. Stocks on October 1, 1930, were the lowest on record, and a further decrease is to be expected by October 1, 1931. If a crop of normal quality is obtained this year and the quantity produced does not materially exceed 5,000,000 pounds, returns to growers are likely to be better than returns in 1930.

CIGAR TYPES

PENNSYLVANIA FILLER, TYPE 41

The outlook for Pennsylvania filler tobacco appears sufficiently favorable to justify an acreage about the same as that of 1930. The yield per acre last year was cut and the quality of the crop was lowered by drought. In consequence of the low yield the production was the smallest in many years. Stocks and total supply on October 1 were similarly low. With yields equal to the average for the last 10 years, the same area as that harvested in 1930 would produce approximately 53,500,000 pounds. In view of the decreasing stocks the demand for good filler tobacco is likely to be fairly active, especially in view

of the generally low quality of the 1930 crop. Consumption of Pennsylvania filler tobacco has increased somewhat during the last two years, but is still slightly below the general level of consumption during the last decade.

MIAMI VALLEY CIGAR FILLER, TYPES 42-44

No increase in acreage of the Miami Valley filler types seems desirable at this time. Production in 1930 shows an increase of 11,629,000 pounds, or 55 per cent over that of 1929, due partly to increased acreage and partly to the unusually favorable yield per acre. This increase in production was offset to some extent by a decrease of 3,461,000 pounds in the stocks of October 1, 1930, compared with the previous year. The total supply on October 1, 1930, was 69,269,000 pounds compared with 61,101,000 pounds on October 1, 1929. Consumption has averaged approximately 26,000,000 pounds during the last three years, and since production in 1930 exceeded the average consumption by nearly 7,000,000 pounds, the carry-over next October is likely to be several million pounds larger than it was on October 1, 1930. Therefore, if the quantity produced this year is equal to 1930 production an increase in total supply will result, and prices received by growers will probably be even lower than the present average which is estimated at 11 cents per pound. But the chances are that last year's high yields will not be duplicated this year, and if acreage is not increased a moderate reduction in the outturn is probable. An early return to the high prices that prevailed in 1927 and 1928, however, is not anticipated.

NEW ENGLAND BROADLEAF, TYPE 51

The outlook for Broadleaf appears favorable provided acreage is not increased. Prices during the last two years indicate that there is an active demand for good-quality binder tobacco. Disappearance during the recent years has exceeded production, and stocks of old leaf have diminished. However, it is to be noted that production during the last two years was reduced by excessive hail damage. Present supplies of Broadleaf binder appear to be deficient and demand seems to be increasing. Prices paid to growers for the 1929 and 1930 crops, which were above average in quality, were 27.4 cents and 30 cents per pound on the average, respectively. A total production in 1931 about the same as in 1930 will probably command prices comparable to those of the last two years.

NEW ENGLAND HAVANA SEED, TYPE 52

The outlook for Havana Seed is favorable for a crop no larger than that of 1930. Stocks on October 1, 1930, although not large, increased 1,510,000 pounds over those of the preceding October 1. On the other hand, an analysis of the stocks reported from April to October in 1930 indicates a relatively rapid depletion of stocks in the manufacturing grades. The fact that prices to growers have not been so well maintained in Havana Seed as in Broadleaf may be due to the larger supply of manufacturing grades on hand and to the fact that disappearance of Havana Seed declined in 1930 whereas that of Broadleaf increased.

WISCONSIN BINDER TOBACCO, TYPES 54-55

No increase in production of Wisconsin tobacco appears justified in 1931. Production in 1930 amounted to 55,775,000 pounds, whereas consumption during the year ended October 1, 1930, was only 51,352,000 pounds. Unless consumption during the current year shows an increase, which is unlikely, stocks on October 1, 1931, will be larger than those of October 1, 1930. The total supply of Wisconsin tobacco has increased in each of the last three years, and the trend of prices since 1927 has been downward. With production remaining as in 1930 a moderate, though not significant, increase in total supply appears probable, and prices are likely to be somewhat lower than for the 1930 crop.

NEW ENGLAND SHADE-GROWN TYPE 61

No increase in the production of New England shade-grown wrapper tobacco appears to be justified in 1931. The relatively large crop harvested in 1929 resulted in an increase of 55 per cent in the October 1 stocks in 1930, compared

with 1929. Notwithstanding the fact that production in 1930 decreased, the sharp increase in stocks resulted in the largest total supply of type 61 tobacco on record. This is a factor of significance in view of the recession in the manufacture and consumption of cigars. Even if disappearance during the year ending October 1, 1931, equals the average for the last five years, which is unlikely, the stocks remaining on that date will still be the largest on record and are likely to exert a depressing influence on prices for the crop to be harvested next fall.

GEORGIA-FLORIDA SHADE-GROWN TYPE 62

Information from which to analyze the outlook for type 62 tobacco is meager, since stocks were not reported separately prior to 1929. Information from trade sources indicates a good demand for this type of wrapper tobacco.

BROOMCORN

Domestic consumption and exports of broomcorn have averaged about 51,000 tons for the last five years. An acreage 20 per cent less than harvested last year, or about 5 per cent more than that harvested in 1929 (that is, about 320,000 acres), with the 5-year average yield of 319 pounds per acre, would produce this quantity. A larger crop would exceed trade requirements and probably result in lower prices.

With yields as low as in 1930, 320,000 acres would produce only 40,000 tons; but with yields approaching those obtained in 1926 and 1928 this acreage would produce more than 57,000 tons. The yield per acre in 1930 (251 pounds) was the lowest in the record of 16 years compiled by the Department of Agriculture and it very largely offset the 30 per cent increase in acreage, so that production was less than 50,000 tons. However, the acreage harvested in 1930, with only average yields, would have produced 63,000 tons.

The carry-over on June 1, 1930, plus the 1930 crop, provided a total supply of about 72,000 tons of broomcorn. A consumption of 51,000 tons this season would leave about 21,000 tons available on June 1, 1931, to provide for the needs of the trade until the new crop is available. The average June 1 carry-over for the last five years has been about 27,000 tons. A reduction of about 3,000 tons in shipments from producing areas from June 1 to December 1, 1930, as compared with the same period in 1929, might be considered as indicating a smaller consumption this year than usual. But because of excessive waste in manufacturing weather-damaged broomcorn from western districts, and unusually small stocks of brooms in jobbers' hands, the "cut-up" is expected to be nearly the same as last year. Therefore, a crop of around 51,000 tons would appear to be adequate to supply trade requirements.

As a result of an early demand for high-quality brush, the market at Lindsay, Okla., opened in August, 1930, at about the same prices that prevailed in 1929. This demand was soon filled and prices declined rapidly thereafter, good-quality broomcorn showing the least reduction. The decline was partly due to a lack of demand and partly to a lower quality of the crop in the western districts caused by rains late in the season. Prices for the 1930 crop to December 10 have averaged 25 to 30 per cent lower than for the same period in 1929. These reductions are somewhat less than the average of reductions for other agricultural products, particularly wheat and cotton. In 1931 a crop of 51,000 tons probably will bring about the same price as the 1930 crop or, in the event of a general business recovery, probably will sell for a somewhat higher figure. But it should be kept in mind that a larger crop would exceed consumption and would probably result in a low price.

Broomcorn production requires experienced handling, special equipment, and an adequate supply of labor. Buyers usually visit only important, established producing districts. Growers, therefore, should have experience in producing and handling the crop and should be sure that a sufficient acreage will be planted in their neighborhood to assure a market.

RICE

Rice acreage in the Southern States for 1931 can probably be maintained at 873,000 acres, the acreage grown in 1930, without depressing prices below those of 1930-31. If average yields are obtained on this acreage, production would be sufficient for domestic needs and would leave about 150,000,000

pounds for export. During the last four years domestic requirements have averaged about 950,000,000 pounds and exports around 255,000,000 pounds. Owing to a preference for American rice in some foreign countries, 150,000,000 to 175,000,000 pounds can usually be exported at prices considerably above prices for foreign-grown rice.

If California rice acreage in 1931 is reduced to 100,000 acres or less and if an average yield is obtained, the production will be about equal to requirements of the domestic market. Production in excess of this quantity must be sold in foreign markets, chiefly in Japan. The opportunities for selling significant quantities of California rice in Japan have been few during the last 10 years.

The estimate of production in the southern belt for 1930 is 34,000,000 bushels, about the same as that of 1929. The average production of this area for the 4-year period, 1926-1929, was 34,733,000 bushels. Stocks of rough rice remaining in farmers' hands on January 1, 1931, were about 2,700,000 bushels (750,000 barrels) larger than a year before. Millstocks (rough and milled) were below those of last year. Stocks in both positions indicate that total supplies of rough and milled yet to be marketed are about the same as a year ago. Movement of southern milled rice into consuming channels from August 1 to December 31, 1930, was approximately the same as for the corresponding period last year. The season's probable supply of southern milled rice was 990,000,000 pounds as compared with last year's supply of 993,000,000 pounds. Because of the poor milling quality of some of this year's crop, the percentage of high grades of milled rice may be lower than last year.

Total United States exports for the first five months of the 1930-31 crop year were 8,000,000 pounds below the 107,000,000 pounds exported from August 1 to December 31, 1929. The average quantity exported during the first five months of the crop year, for the last four years, was 85,209,000 pounds. Shipments to Porto Rico during the first five months of the 1930-31 season were larger than last year and about the same as the record shipments of 1928-29. Shipments to Hawaii during that period this year were the largest on record. Exports may continue to run behind those of last year and shipments to insular possessions are likely to ease off slightly during the last half of the crop year, thus leaving a slightly larger supply for domestic consumption than was available last year. Because of the lack of stability in prices of other commodities, domestic buying thus far this season has been strictly of a hand-to-mouth character. In spite of relatively low prices there has not been the usual season's buying for future needs. For the remainder of the crop year, however, it is anticipated that domestic takings will be larger than they were for the corresponding period in 1929-30 and that prices after January, 1931, may improve. Prices of milled rice at the principal markets on January 15 were averaging lower than a year ago. Prices of Fancy Blue Rose at New Orleans were \$3.38 per hundred pounds on January 15, 1931, and \$3.94 a year ago. Fancy California-Japan at San Francisco was quoted at \$3.60 per hundred pounds on January 15, 1931, as compared with \$4.20 a year before. Owing to the decline of prices of other commodities the exchange value of a hundred pounds of milled rice was about the same in January, 1931, as it was a year before.

Prices of California rice are being maintained at a relatively high level. If the spread between Blue Rose and California-Japan prices widens very much considerable southern rice will probably be sold in competition with California rice. Domestic takings of California rice for October, November, and December, 1930, were about average, but exports for the same period were very low. Exports are likely to continue low for the remainder of the crop year, thus necessitating carrying over more than usual quantities into the 1931-32 season.

The December estimate of production in California was 7,271,000 bushels as compared with 6,222,000 bushels grown last year and a 4-year average (1926-1929) of 7,820,000 bushels. Record crops are reported for Japan and China, and the crops in Spain and Italy are large. Middle-quality brown rice was quoted on the Tokyo exchange at 2.66 cents per pound January 17. This price was slightly under the San Francisco price for No. 1 brown rice. There usually is practically no movement from California to Japan until Tokyo prices become about 1 cent per pound over San Francisco. There are no indications that Tokyo prices will advance materially during the next few months. The efforts on the part of Japan to market large quantities of rice on other Asiatic, European, and American markets are creating very severe competition for California rice and are likely to reduce exports of California rice to those markets

SUGAR

Low prices of sugar during the last two years may have a tendency to check the expansion of world production, but, some time may be required for making material readjustments that will result in lower production. Possibly a recovery in business conditions, together with the program of segregation of stocks and restriction of exports recently adopted by the principal foreign sugar-producing countries, may result in some improvement in prices to producers, but no substantial improvement can be expected until world demand increases in relation to production.

Production of cane sugar in our insular territories of Hawaii, Porto Rico, and the Philippine Islands has been increasing at a rapid rate. Production in the continental United States has also been upward during the last few years. The preliminary estimate of the production of 1,274,000 short tons of beet sugar, calculated on a basis of raw sugar, in continental United States for the 1930-31 season represents a substantial increase compared with the previous season. The production of cane sugar also has increased at a rapid rate since the adoption of disease-resistant varieties of P. O. J. (Proefstation Oost Java) canes and the consequent improvement of yields in Louisiana, but production is still below the quantity normally produced in the State. The United States, however, is dependent on foreign sugar imports (practically all of which are from Cuba) for approximately 50 per cent of the domestic requirements. The price received by domestic producers, then, is on an approximate basis of the world price plus the duty on Cuban imports.

Beet-sugar production in Europe continues to increase. Excluding Russia, European production in the 1930-31 season is expected to be 5 per cent above that of the previous season. Russia reports a large increase in production, preliminary estimates indicating a crop of 1,984,000 short tons compared with 907,000 in 1929, and 1,413,000 in 1928. The effect of this increase upon the supply or price outside of Russia is problematical. The net exports from Russia in the 1928-29 season amounted to about 97,000 short tons.

The world cane-sugar crop also seems likely to be larger than last season. Weather conditions have been favorable for a large crop in Cuba. Porto Rico and Hawaii have prospects for good crops. The Java Sugar Association reports a slight increase in plantings for the next crop in Java. Acreage has been increased in India. Notwithstanding the fact that the world production of sugar during the 1929-30 season, just completed, was 1.6 per cent below that of the previous season, stocks increased. The visible supply of sugar on September 1, 1930, in 13 important sugar-producing countries was 1,200,000 short tons above that of the same date of 1929.

An important recent development has been the negotiation of an agreement between Cuba, Java, and the principal European sugar-producing countries whereby a definite quantity of stocks of sugar would be segregated and, in conjunction with limitation of exports, gradually marketed over a period of five years in an effort to adjust production to demand.

World sugar production continues high with respect to consumption and prices continue low. The 1930-31 beet-sugar production is likely to be larger than the production of last season. The world's cane crop seems likely to be as large as or larger than that of last season, and stocks of sugar are now larger than a year ago. The world-wide depression probably has had a tendency to reduce consumption and prices below what they otherwise would have been during the last season, with consequent accumulation of stocks. Restriction of production in foreign countries and an improvement in the purchasing power of consumers are likely to reduce stocks, and it is probable that these factors, together with the higher tariff duties now in force, may tend to effect some increase in the price of sugar to producers in the United States.

HONEY

In most sections of the country bees went into winter quarters with ample stores and well provided with young bees. The relatively mild weather to date over most of the clover belt has favored satisfactory wintering; but in the western intermountain region severely cold weather has been hard on bees that are packed out of doors. Bees wintered in cellars were generally quiet at the middle of January. Clover, the main source of surplus honey

over a wide area, suffered severely from the drought last year, and can not be expected to provide a normal crop of honey in 1931.

Demand for honey, especially in carload lots, has been greatly curtailed during last year, because of the general depression, and prices are now the lowest since before the World War. Many large beekeepers who formerly sold at wholesale in 60-pound cans, last season packed their honey in small tin and glass containers and sold it near by, either to grocers or direct to the consumer, at substantially higher prices than they would have received in the large cans. Many people were in this way brought in touch with honey for the first time. The continued development of local selling in 1931, especially in the more populous sections of the country, would further extend the consumption of honey and simplify the marketing problem.

Total exports for the 12-month period ended November 30, 1930, were about 3,750,000 pounds, or little over 40 per cent of the exports for the preceding 12 months, and were the lightest since 1923. In spite of higher tariff rates and other restrictions, Germany continues to be the leading foreign market for American honey, closely followed by Great Britain.

DOMESTIC DEMAND

Domestic demand for farm products marketed during the first half of 1931 is not likely to show any material change from the present depressed conditions. Many conflicting factors make it difficult to mark specifically the beginning of a definite recovery, but it seems fairly certain that recovery will be in evidence during the latter half of 1931, continuing with greater momentum into 1932. With such developments, the demand for farm products during the crop season 1931-32 is likely to show a considerable improvement from the present unusually low levels.

The decline in domestic business activity which began in July, 1929, has developed into a major depression with many features characteristic of such depression periods. Industrial production, at the end of 1930, was approximately 35 per cent below the peak of 1929; factory employment was 22 per cent lower, and pay rolls had been reduced about 35 per cent. In addition there has been a substantial reduction in building activity, particularly in residential construction. The decline in industrial activity has been practically continuous over a period of 18 months. Prices of industrial stocks reached their lowest levels in the present cycle in December, but have not as yet shown any signs of a general upward trend. Commodity prices likewise have declined until they are now at the lowest levels so far in this depression.

Every major section of the country has shared in this let-down in business and every section of agriculture has consequently experienced the effects of the reduced buying power of consumers. The money income of factory employees for the calendar year 1930, was about \$2,150,000,000, or 19 per cent, below the 1929 total of \$11,422,000,000 and the gross income from farm production in 1930 has likewise been reduced by approximately the same amount. In spite of the fact that the physical volume of farm production in 1930 was about 2 per cent less than in 1929, prices received by producers declined nearly 30 per cent between December, 1929, and December, 1930. The chief factors in this decline in farm prices and farm money income are the domestic business depression and the depressions existing in other countries discussed elsewhere in this report. Some producers suffered greater price declines than did others because of high levels of production prior to the depression. It appears reasonably certain, therefore, that any increase in farm income during 1931 will be largely dependent upon improved demand conditions in the domestic and foreign markets.

In appraising the probability of such improvement in domestic demand for 1931 it is necessary to weigh certain factors which suggest recovery against those which might retard it. Those which point to a recovery paralleling the revivals from earlier depressions are:

(1) The decline in commodity prices, which has accompanied the decline in business, has been of unusual proportions. Prices of raw material have declined more than prices of finished goods, thereby creating a favorable spread for the resumption of manufactures, as in the case of cotton. Furthermore, there has been an appreciable reduction in retail prices, particularly for foods and clothing, which will tend to offset in part the reduced incomes of consumers.

(2) Industrial activity has already declined more than in former major depressions and the period of decline (18 months, including December, 1930) has lasted approximately as long as in other major depressions of this type. Prolonged low levels of industrial activity reduce the accumulation of surplus goods and create the need for replenishment. In the past this has been one of the features making for recovery.

(3) Financial policy during 1930 has been directed toward checking the business depression and laying the ground work for recovery. This policy has resulted in low interest rates especially in the larger industrial sections, and has been favorable for expansion in public-work and public-utility construction, but it has not yet been reflected in increased residential, commercial, and industrial construction. At present, bond prices show a substantial recovery from the low levels in December and a continuation of this improvement may be expected to bring about an increase in the volume of new financing. Such new security flotations will have a favorable influence upon the future course of business activity through making available additional funds for building construction, expansion of capital equipment, and the like. Interest rates are now lower than in 1930 and lower than at any time in recent years, reflecting increased purchases of securities by Federal reserve banks, larger monetary gold stocks, and reduced commercial demand.

There are certain factors that suggest possible delay in the business revival: (1) Business in this country is being retarded by a continuation of the unfavorable business and unsettled political conditions abroad. (2) The material reduction in farm income likewise tends to make certain business men apprehensive as to the farm market for their products in 1931. (3) Just as the persistent great decline in prices of industrial stocks in 1929 affected business adversely in 1930, so the unusual decline in the last half of 1930 may affect business in 1931. (4) The rate of recovery from previous depression periods has been in part influenced by the necessity of supplying an accumulated deficit in capital goods. During 1921-22 and in 1924 recovery in business activity was stimulated by a material increase in building construction and in production of automobiles, and by a favorable increase in foreign trade, but a comparable stimulus to recovery during 1931 would have to come from other lines of activity since there is little prospect of any marked improvement in these basic factors during the first half of 1931.

A balancing of these considerations does not indicate when the turning point in business is likely to occur. The lowest points of previous business depressions have been marked by low interest rates, low raw material prices, advances in stocks and bonds, and increased employment in key industries in which curtailment had been too drastic. Advances in the first two events are clearly in evidence. At present, there are indications of increased employment in some basic industries such as automobiles, iron and steel, and the railroads. During recent weeks, bond prices have advanced and stock prices have shown some stability. These recent tendencies have been of such short duration that it is uncertain that they mark an immediate turning point in the present depression. Even if this should be the turning point it is not likely that an immediate sharp advance will follow, nor that there will be any marked improvement in the demand for farm products during the first half of 1931. Some agricultural products may show price advances, but the advances are likely to arise from shortages in market supplies rather than from improvement in domestic demand.

Although domestic demand is not likely to show any marked improvement during the first half of 1931, it seems reasonable to expect a business revival to become more evident during the last half of the year. Consequently farmers may anticipate that domestic demand conditions for farm products will be better during the 1931-32 marketing season than they have been throughout the 1930-31 season. But demand, although improved, will probably not be so good as that of 1929.

With the gradual recovery in business a strengthening in the level of wholesale prices may be anticipated. Should recovery in this country be accompanied by some improvement in business in other countries, it is probable that more of a recovery in prices may take place during the latter half of 1931 and in 1932. Agricultural prices under these conditions would share in the improved domestic and foreign demand.

FOREIGN DEMAND

Purchasing power of consumers in foreign countries for the 1931 farm products of the United States may be somewhat greater than it has been for the products of the 1930 season; but restrictions upon international trade and increased competition in some of these products will tend to offset the effect of increases in purchasing power upon the foreign demand for our farm products.

At present there are few concrete and definite evidences of improvement in the purchasing power of foreign consumers; the principal basis for expecting some improvement is the fact that the depression has continued so long and so far that the consumption of many industrial products is now outrunning production. Therefore, judging by the past, some recovery seems likely during the course of the next 12 months. Some evidences of approaching stability and even of improvement are beginning to appear, but against these appear other evidences of uncertainty and continued recession. Generally speaking, short-time money rates are comparatively low in several foreign countries, but lack of confidence is restricting the flow of money and credit into productive channels. Political instability still hampers several countries, although in others internal conditions apparently are becoming more nearly stable. Declines in the prices of some raw materials and foodstuffs appear to have been checked, temporarily at least. To check declines in the prices of principal products of important countries, in itself, tends to remove causes of instability in governments, encourages the granting of credits where funds are needed, and promotes increased business activity.

Prices of farm products in foreign markets have declined to low levels. The general price level in most foreign countries to which this country exports has fallen as much as in the United States. Business is greatly depressed in most of the countries to which our farm products are exported. Demand for raw materials for manufacturing, including cotton, is curtailed. The ability of consumers to purchase food products has been reduced by unemployment and reductions in wages. Foreign demand for the farm products of the United States has been reduced also by increased production in importing countries, cheaper supplies from other foreign surplus countries, and increased restrictions upon imports.

In the United Kingdom, the most important foreign market for the agricultural products of the United States, business activity has been reduced to a low level. The purchasing power of consumers has been reduced by increasing unemployment through many months. The effect upon the demand for food products has been registered mainly in reductions in prices of dairy and poultry products. Reduced industrial demand for cotton and wool has been an important factor in depressing the prices of these products. The prospect for early improvement is not bright. Strikes and lockouts, existing or impending, in resistance to wage cuts or to the introduction of improved machinery that displaces labor, are contributing to the depression. A settlement of such disputes, particularly in the cotton industry, on a basis that would make for improvement in business activity, should increase the demand for some American farm products.

Many of the countries upon which the United Kingdom depends for markets for manufactured products are greatly depressed, without prospect of material improvement in the near future. However, there are beginning to be some evidences of checking the decline in business activity and slight evidences of improvement in some of the British markets. The program adopted by the recent conference of representatives of India and the British Government may result in better trade relations between the two countries and may improve the market for some British goods.

Conditions in Germany are likewise uncertain, with no definite prospects for early recovery. Unemployment is exceptionally large and strikes are impending. But important steps have been taken toward readjusting industry and wages to compete more successfully with foreign industries. Political conditions are still somewhat unstable but some of the greater difficulties seem to have been surmounted. If the Government proves able to cope successfully with fiscal problems likely to arise during the next few months, business in general may profit by an increasing confidence within the country. Any general improvement in business conditions, in turn, tends to pave the way for increased political stability.

Business is greatly depressed in Austria, Czechoslovakia, and Poland, which countries are more or less closely associated with Germany in trade. Some evidence of improvement has appeared in Poland. Several of the central and eastern European countries are still greatly in need of capital funds. Favorable trade balances during 1930, as compared with so-called unfavorable trade balances in previous years, may strengthen the economic situation of some of these countries. Reduction in money rates in France and recent declines in domestic demand for capital funds may release French capital that may flow into some of the countries of central and eastern Europe. Some countries to the west and north, particularly the Netherlands, Denmark, Norway, and Sweden, have not suffered so greatly from the present depression as have other sections of Europe, and appear to be in fairly good position for material recovery as improvement takes place in business conditions in those countries in which they market their surpluses.

The economic position of Italy is little if any better than that of Germany and the United Kingdom. Drastic reductions in wages, rents, and retail prices, although temporarily disturbing, tend to enable the country to compete more successfully with other countries in foreign markets. Improvements in purchasing power of the countries upon which Italy depends for an outlet for manufactured goods seem necessary to improve materially the Italian demand for American cotton and other commodities purchased from the United States.

Japan is suffering from a general industrial depression and, in particular, from a great reduction in the export demand for raw silk. A large rice crop places the country in good position to feed its people but closes a market for California rice. Improvement in the Japanese demand for American cotton is dependent largely upon improvement in Oriental markets for the output of the Japanese industries. An improvement in the demand for raw silk in the United States would contribute to increasing the purchasing power of Japanese consumers for imported wheat, flour, and cotton.

Chinese political conditions appear to be less unsettled than they have been for some time. A general peace in China, if accompanied by suppression of banditry and other forms of lawlessness that disturb trade, might prepare the way for a marked increase in industrial and commercial activity in that country. This would tend to strengthen the demand for tobacco, cotton, and wheat from the United States, although it might at the same time result in larger shipments of soybeans, peanuts, vegetable oils, and eggs from China. At present, there are two outstanding economic factors in the situation that are unfavorable to recovery in China: the decline in the value of silver, and the low prices being paid for the raw-material products of China. Although the present declining prices of silver constitute a handicap to the purchasing of foreign products by China, the checking of this decline probably would be followed by increased agricultural imports. Manchuria has suffered greatly from low prices of soybeans and other products. The southern and central parts of China have suffered from low prices for silk and vegetable oils. Improvement in the demand for silk and wood oil in the United States would be reflected in China and in turn would increase the demand for some of the agricultural products of the United States.

Economic improvement in China would also be reflected in the business activity of many other countries. The abolition of taxes on internal movements of goods, even if accompanied by increases in import duties, would do much to facilitate international trade with China. There are railways and railway equipment to be restored and roads, telephone lines, and buildings to be constructed. The possibilities of developing extensive activity in these matters, depend not only upon peace and security within China but also upon the ability of that country to obtain from foreign countries funds for extensive construction work.

The significance of the East Indies and some of the South American countries as factors in the foreign demand for the farm products of the United States is chiefly in the effect of conditions in those countries upon the demand for industrial products of other countries. Many of these countries have been hard hit by low prices for the foodstuffs and raw materials that they produce. The depression has resulted in political unrest and uncertainty. For these countries the greatest hope is in checking the decline in prices of their raw materials and, ultimately, in obtaining some improvement through increasing industrial activity in the countries that depend upon them for raw materials.

Several of the British Dominions and a few of the South American countries, notably Argentina, are important both as agricultural competitors and as markets for industrial goods. As markets, their purchasing power for the coming year may continue on a comparatively low level. Prices of their products are low and there is little prospect of significant improvement in the prices of these products in the near future. In some cases, as in Australia and Argentina, low prices have been offset in part by larger production. Furthermore, the prices of many of the industrial products that these countries purchase are being reduced so that in the course of the next year the smaller incomes will go further and may lead to some improvement in conditions in general.

As competitors, these countries have no alternative to continuing their large-volume production of important agricultural commodities. The trend is toward expansion of wheat production in Canada, Australia, and Argentina; of dairy production in New Zealand; and of corn and flaxseed production in Argentina. Sheep and wool production probably will continue in large volume in these same countries. In some cases the production of 1931 is likely to be pressed upon the market under distress conditions. Low prices such as now prevail may check expansion but are not likely to cause production to be curtailed to a marked extent in the near future. Even if it is checked, any material improvement from present price levels probably would lead to a resumption in the upward trend of production in these competing countries. In this connection it should be observed that improved technic and machinery are being introduced and extensively used in these countries, as upon the Great Plains of the United States; this tends to maintain or even to expand production in the face of relatively low prices.

European demand for wheat from the United States probably will be curtailed to some extent by exports of wheat from Russia. Unusual yields per acre in 1930 produced a considerable surplus of wheat for export from Russia. Although such a high yield is not to be counted upon next season, it is likely that a fairly large carry-over of wheat will contribute to exports next season. Some increase in acreage is likely.

Special efforts to increase production in some European countries also have a tendency to reduce demands for farm products of the United States as domestic demands are more nearly filled at home. Some shifts are likely to be made in cereal production, but on the whole no marked change in crop production is to be expected in Europe during the next year or two. Hog production is now at high levels in several north European countries and marketing probably will continue heavy.

There seems to be an almost world-wide tendency for countries to restrict imports of agricultural commodities. During the last two seasons many countries have raised tariffs or have imposed other additional restrictions to protect their domestic agriculture. One method of restricting imports is to adopt measures that fix a minimum percentage of the domestic products which must be used with foreign products. These restrictions have been an important factor in the present depression, tending to reduce the world-wide demand for certain important products by requiring domestic consumers to pay high prices or to use substitutes. Some of the measures have been taken to meet temporary emergencies, and there may be some relaxation from these measures if there is an improvement in business conditions. On the whole there is not much prospect of material relief, if any, from these measures during the coming season.

CREDIT

The supply of production credit available during the crop season of 1931 will be considerably less, in most sections, than during 1930 or other recent years. Despite probable efforts to produce crops with a minimum cash outlay in 1931, the need for credit in many sections will be materially increased. A portion of this increased need will be met through emergency advances from the seed loan fund which Congress has made available, and through further expansion in the activities of agricultural credit corporations. The volume of farm-mortgage credit is also likely to be restricted because of conservative policies of lending agencies. The supply of marketing credit is likely to be ample.

Several factors will operate to curtail the ability of country banks to make advances during the 1931 crop-production season. Most country banks entered 1931 with a smaller volume of deposits than they had a year earlier, and with less adequate secondary reserves consisting of commercial paper, bankers' balances, and investments. The carry-over of 1930 loans into 1931 will be materi-

ally larger, on the average, than the volume of unpaid loans carried over from 1929 into 1930. In many areas, banks have been unable fully to liquidate the borrowings from correspondent and Federal reserve banks. Bank failures in many sections, and particularly in the Southern States have further accentuated the shortage of available funds.

The movement of deposits in country banks serves as an approximate measure of the changes taking place in the supply of loanable funds from this source. For country banks, located in places under 15,000 population, net demand deposits of member banks of the Federal reserve system in 20 leading agricultural States (excluding California) showed a reduction of 12 per cent in November, 1930, as compared with a year earlier. The largest declines were registered in the cotton States, with a smaller decline in the Corn Belt and the Mountain States, and only a slight decrease in the Northeastern States.

Advices from agricultural-credit corporations and Federal intermediate credit banks indicate that an increased volume of credit from these sources will be utilized. This increase will result in part from the formation of new credit corporations and in part from enlarged operations of existing corporations. The discount rate of the Federal intermediate credit banks was, on January 20, uniformly 4 per cent. The cost to the farmer for such credit obtained through agricultural credit corporations will include an additional 2 or 2½ per cent, plus such fees as the individual corporation may require. In some cases borrowers will be required to purchase stock in the credit corporation.

Ability of country merchants to extend credit to their customers will be adversely affected, in many sections, by an abnormally large carry-over of last year's accounts and by difficulties in obtaining new loans from the local banks.

Reduced income in 1930 prevented farmers from accumulating the usual seasonal cash reserves, and in many cases bank failures, have rendered unavailable such reserves as had been accumulated. A considerable number of farmers who normally finance themselves will need loans in 1931. In the drought area, moreover, outlays for feed will require borrowing which ordinarily would not be necessary. Owing both to inadequate security and to limited supplies of credit an unusually large proportion of farmers will be unable to obtain credit from commercial sources. Available credit resources, however, will probably be conserved as farmers are likely to produce crops with a minimum cash outlay. Supplies that farmers must purchase are somewhat lower in price as compared with a year ago.

The unfavorable credit situation in the drought-stricken States will be mitigated by the emergency loans authorized under the seed loan act. Loans from this source are available only to those who are unable to obtain credit from commercial sources and the proceeds may be used for the purchase of seed, fertilizer, feed for work stock, and gasoline and oil for tractors. Such loans will be made in some or all of the counties in 25 States, in the administrative discretion of the Secretary of Agriculture.

The outlook for farm-mortgage credit does not hold much promise of improvement during 1931. Although ample funds are available for adequately secured loans in most localities, lending agencies are extremely cautious in extending credit. The decline in land values and the poor income returns of 1930 are making it difficult for borrowers to obtain renewals upon favorable terms. A few of the insurance companies have withdrawn from the farm-mortgage field. Most of the joint-stock land banks are temporarily inactive, or have greatly restricted their operations. No appreciable change in interest rates is anticipated in view of the conditions above indicated. The present rate charged by nine of the Federal land banks is 5½ per cent, and at the New Orleans, Columbia, S. C., and Baltimore banks, a rate of 6 per cent is being maintained.

The supply of credit for marketing the 1931 crops seems likely to be ample. This type of credit is supplied from central money markets, where an abundance of credit is available and the interest rates are at the lowest level in any recent year. Interest rates (January 31, 1931), on commercial paper are 2¾ per cent, compared with 4¾-5 per cent a year ago; acceptance rates are 1¾-1½ per cent compared with 4 per cent, and the call rate is 1½ per cent contrasted with 4½ per cent. Contributing to this ease in central money market rates, there has been, during the past year, an increase in the United States security holdings of the Federal reserve banks of \$163,000,000 and an increase of \$339,000,000 in the stock of monetary gold. These changes are offset, in part,

by an increase of \$43,000,000 of currency in circulation. The net addition of funds obtained from the above mentioned sources has enabled member banks to reduce their borrowing \$248,000,000, and, at the same time, to increase their legal reserves, these changes having occurred primarily in commercial centers.

Although an ample supply of marketing credit may be anticipated, it is probable that interest rates will be slightly higher than those existing at present, although still at favorable levels compared with recent years. Business activity during the latter half of 1931 is likely to be somewhat higher than the present depressed levels and will probably require some increase in the volume of currency. Some reduction in the security holdings of the Federal reserve banks may take place, as they are now at about the highest level on record. In addition, it is possible that our stock of monetary gold will be reduced during the coming year as a result of gold exports. Each of these developments will tend toward somewhat higher interest rates for the latter part of 1931.

FARM LABOR, EQUIPMENT, AND FERTILIZER

FARM LABOR AND WAGES

During the early part of 1931, the supply of labor for farm work is expected to be abundant and farm wages probably will be lower than during any corresponding period in many years. As the year advances changes in the farm-labor supply will be governed largely by changes in the volume of industrial activity, but even should industrial employment increase markedly from the present low levels the supply of farm labor will be plentiful.

The decline in industrial activity during 1930 added many workers to an already ample farm-labor supply, and on October 1 wages per farm worker without board were \$5.64 per month less (13 per cent) than they were a year ago. From October, 1930, to January, 1931, there was a further decline of 12 per cent in farm wages. This is considerably larger than the usual seasonal decline and is due largely to the plentiful supply of labor and to decreased demand for hired farm workers. The long period of declining industrial employment has not only added to the supply of labor for farm work but has resulted in depletion of the reserves of many workers. Scattered reports indicate that laborers in some localities are willing to work for their bed and board.

Although the decline of farm wages in 1930 was general throughout the country, it was relatively greatest in the Southern States. In the drought areas, the decreased demand for farm labor had a depressing effect on wages.

FARM MACHINERY AND EQUIPMENT

The general wholesale price level for farm machinery remained fairly constant from January, 1925, to April, 1929. From April, 1929, to December, 1930, the wholesale level of machinery prices dropped about 4 per cent; most of this decline occurred during the latter part of 1929 and the early part of 1930. This decline in wholesale prices had not been accompanied by a corresponding decline in retail prices up to June, 1930, the latest date for which retail prices are available.

BUILDING MATERIALS

Decreased building activity, especially in residential construction, during 1930, was reflected in declining wholesale prices of most building materials. From January to December, 1930, the wholesale price level of building materials declined about 12 per cent and that of lumber declined about 16 per cent. These declines in wholesale prices suggest lower retail prices, especially during the early part of 1931, as compared with the early part of 1930. Construction of residences for the nine months, January to September, 1930, was only 54 per cent of the construction during the same period of 1929, and 39 per cent of the corresponding period of 1928. Wholesale prices of building materials on October 1, 1930, were 85.8 per cent of the 1926 prices compared with 97.8 per cent on October 1, 1929, and 95 per cent on October 1, 1928. The index of wholesale prices of lumber on October 1, 1930, was 80.2 per cent of the October, 1926, price as compared with 96.3 per cent on October 1, 1929.

FERTILIZERS

Fertilizer consumption fluctuates with the gross income per acre for important fertilizer-consuming crops in the preceding year. The gross income from these crops in many sections was considerably less in 1930 than in 1929 and in such sections fertilizer consumption is expected to be considerably less in 1931 than in 1930. Both wholesale and retail fertilizer prices are lower than a year ago, which fact, with indications of a demand considerably lower than last year's, suggests the probability of lower cash retail prices during 1931 than during 1930. Throughout the last half of 1930 wholesale prices of phosphoric acid average 10 per cent less than during the corresponding period of 1929, mineral ammoniates averaged 8 per cent less, organic ammoniates 15 per cent less, and potash 1 per cent more. Prices of fertilizers to farmers during the fall of 1930 averaged about 3 per cent less than during the fall of 1929.

THE LONG-TIME OUTLOOK

THE GENERAL PRICE LEVEL

During the course of the prospective business revival it may be expected that the general level of wholesale commodity prices will show some recovery from the present low levels, but it is not likely that the commodity price level will return within the next few years to that of 1929. In 1929 the average of commodity prices was 97 per cent of the 1926 level but in December, 1930, it had declined to 79 per cent (of the 1926 level). During the last 10 years business revivals from a depression have been associated with only about a 10 per cent rise in the average of commodity prices, and probably some unusual price stimulus, such as a concerted world-wide attempt at price inflation, would be required to restore commodity prices to the levels that prevailed before the present depression began.

In the general advance in commodity prices that may be expected to accompany the prospective revival in business during the 1931-32 season, prices of farm products (like other raw materials) should normally advance more than the general index, particularly if agricultural production should not be generally increased this year.

Judging from the tendency of economic activity to run in alternating periods of prosperity and depression, it is likely that any material advance in agricultural prices during the 1931-32 season probably would not be fully sustained during 1933 and 1934 and the next business recession is likely to be accompanied by another period of reduced agricultural prices. If the downward trend in the general commodity price level continues, in the next major business depression agricultural prices may sink to a still lower level than has been reached in the current depression.

Since the war there has been much uncertainty as to the trend or the future of the general price level. Developments of the last few years and especially of the last 18 months tend to support the belief that the trend of the general price level is downward and may continue so for a few more years at least. The trend of all commodity prices was definitely downward from 1925 to 1929, and the decline of the last 18 months has carried the general price level below the low point reached in 1921. Although much of the recent decline is obviously due to the business depression, it appears that prices have fallen farther than can be explained by the business depression alone.

Apparently changes in world-wide monetary and credit conditions are being reflected in the general price level. During the past few years several countries have shifted from an inflated currency to a previous gold basis, stabilized their currencies upon new gold bases, or adopted other financial policies that have contributed to a world-wide contraction in currency and credit available for trade. At present there seems to be little prospect of a change in these policies which would have the effect of reversing the trend in the general price level in the near future.

During the period of changes in credit and monetary conditions, world-wide expansion in production and lower unit costs have also contributed toward a lowering of prices in general. The recent years have been marked by rapidly improving technic in production resulting in or accompanied by reductions in unit costs. In addition to their effect on prices through increasing total production, the reductions in physical costs have tended through competition to

lower prices. Developments to date indicate a continuation of the tendencies to increase production and reduce unit costs not only in agriculture but in manufacturing industries. The effect of these tendencies on prices, of course, might be offset or reversed in a few years by discoveries of new sources of gold, marked changes in central banking or in national financial policies, but to date the possibilities of such developments are less certain than the current tendencies in production and credit which make for a lower price level.

FOREIGN COMPETITION AND DEMAND

At the present time conditions in foreign countries seem to indicate that the demand for the agricultural products of the United States in foreign countries during the next 5 or 10 years is not likely to be so great as during the last 10 years. Within the last 2 years several of the European importing countries have raised tariff walls and imposed other restrictions upon imports. In addition, some of the importing countries are undertaking other special measures for increasing domestic production so as to reduce their import requirements of those products that they can produce at home. No material change in this situation is likely in the near future. Although some countries in which a large percentage of the population is engaged in industry may relax their import restrictions within the next 5 or 10 years, most of them are likely to continue some measure of protection against imports.

Production in the surplus-producing Balkan countries is still held in check to some extent by unsettled conditions resulting from the World War, and exports may increase as conditions become more settled and readjusted to post-war conditions. Larger exports are to be expected from Russia during the next five years as a result of recovery from war conditions and special efforts on the part of the Government to produce for export. Furthermore, the trend of agricultural production continues upward in new areas in Canada, Argentina, and Australia. Improvements in agricultural technic will contribute to expansion of production in Russia and the newer agricultural countries as they are contributing toward such expansion in the central and western sections of the United States.

POPULATION GROWTH

A declining rate of population growth may have a tendency to check the upward trend in the demand for agricultural products. A rapid decline in the birth rate has been in progress since 1921. Even if the birth rate declines no further, and if immigration is restricted as at present, the amount of increase in our population may gradually become less until it reaches the point of a stationary population. During the next 20 years, however, there will be a moderate increase of population, probably averaging from 1,200,000 to 1,500,000 per year during the decade 1931 to 1940, and possibly upward of a million a year in the following decade.

Another significant population factor likely to be ultimately influential is the great decline in the birth rates of the industrial countries of western Europe, hitherto our best foreign markets.

LAND VALUES

Conditions during 1930 have been such as to tend to reduce the number of buyers seeking farms, and at the same time to increase the number of farms available for sale. Moreover, little progress has been reported toward the reduction of the excessively heavy tax burden which farm lands have been called upon to bear, and which constitutes a first claim upon farm returns. Among the more reassuring elements of the situation, however, are the recent reductions in the prices of things farmers buy, both for production and for consumption. As yet these declines have not kept pace with those of the prices of products farmers sell, and consequently the ultimate effects of this factor, in so far as it is operative, probably will be less manifest during the coming season than during subsequent ones.

The latest available estimates (March 1, 1930) indicated that farm real estate values for the United States averaged 15 per cent above pre-war, or approximately 32 per cent below the peak of 1920. Measured in dollars of the purchasing power of 1910-1914, values were approximately 15 per cent below the pre-war level.

For several years past, the number of forced sales has been above normal, and the number of voluntary sales considerably below normal. As a result, the supply of farms for sale has been increasing rapidly in the face of a decreasing demand. The farm bankruptcy rate, though decreasing, was still several times the pre-war figure. The drastic shrinkage in farm income in 1930 below previous years reduces the ability of farmers to purchase farms, and the evidence is that a very substantial portion of the farm buying of recent years has been on the part of active farmers buying for operation. The funds available for interest payments and for curtailment of principal on mortgage debts have been reduced, with a resulting tendency toward an increased number of forced sales of all kinds. This tendency may be offset in part by some moderation in foreclosure policies, but some increase in the foreclosure rate, at least in certain sections, is likely. There are indications also that the less favorable opportunities for the investment of capital and employment of labor in other ways, combined with the desire to take advantage of lower living costs in the country, will result for a time in some increased demand for the renting or purchasing of farm real estate. It seems probable that the net result of the various conditions mentioned will be a continuation of the prevailing depression in the farm real estate market.

FARM-MORTGAGE CREDIT

Farm mortgages, which had followed a rising trend for many years prior to 1920, and for several years afterward, have in recent years experienced a contraction of the holdings of principal lenders. The outstanding loans of life-insurance companies and joint-stock land banks, which first reported reduced holdings in 1928, continued toward lower levels through 1929 and 1930.

Farm-mortgage holdings of commercial banks which have declined steadily for nearly a decade, showed further reductions in 1930. Large numbers of bank failures have contributed further to this end. During 1930, the Federal land banks also joined the downward movement. These sources, representing in all over one-half of the total farm mortgages outstanding, may be taken as indicative of the declining course of this type of farm credit as a whole.

The current movement is of an opposite character to that which prevailed during the period of rising prices when credit in all forms and in increasing amounts was flowing into the farming areas.

The present tendency toward smaller volume of mortgage credit results chiefly from the decline in land values which has been in process since 1920, and through the liquidation of excessive loans by foreclosure and forced sales. Because of the lower value of the security, new loans average smaller in amount than in former years and renewals very often involve reductions of the principal. Farm purchases are less frequent than during periods of rising prices, hence the former heavy mortgage indebtedness accompanying these transactions has been less important in building up total debt.

The outlook for the next few years is for a continuation of the present conservative policy on the part of lending agencies. Appraisals for current and future loans will be fixed at lower levels. However, credit in safe amounts on good security will be generally available.

MECHANIZATION

The development and use of new types of farm equipment involving larger uses of mechanical power, providing the individual farm worker with a much greater capacity for handling land and equipment, has been a conspicuous development in our agriculture during the last few years. Further important developments in this direction are to be expected during the next 10 years. In those areas in which the type of farming and nature of the land have been such as to carry this development farthest, we may expect a further perfecting of the various units of equipment based upon careful observation and experimentation on need and adaptability. Specifically, there will be greater effort to combine implements for various uses into units which will make for a maximum utilization of power in all farm operations and for the better meeting of the needs of farm practice with reference to tillage, planting, and harvesting.

In the more humid areas of the United States mechanization has not reached as advanced a stage as it has in the semi-arid Great Plains territory, nor is it likely to do so. However, a considerable further development toward mechanization may be expected in those portions of the Corn Belt and Cotton

Belt in which natural and economic conditions are most favorable. The combine will probably be much more widely used through modifications to meet special conditions. Corn-harvesting machinery is being further perfected and will undoubtedly be used to a much larger extent during the next few years. The mechanical cotton picker is now being offered for sale and it is an open question as to how effective it is destined to become and how broadly it will be used in the next few years. All of these developments, to the extent they are practical, will contribute to fundamental changes in the organization and operation of farms in the eastern half of the United States.

It is extremely doubtful whether mechanization in the more hilly portions of eastern United States, particularly where livestock must be kept to utilize pasture and where the fields are small and of irregular shape, will reach anything like the degree of development which seems likely in the more favored areas.

Wherever mechanization has become general its initial effect has been to reduce the unit cost of production and thus lower the price at which the product can be continuously supplied. This tends to increase the output, reduce prices, and make changes necessary in the agriculture of the areas in which the more efficient practices are not applicable. Readjustments from this cause are unavoidable. In the long run this means further reduction of the agricultural population through shifts into other occupations. The extent and significance of this movement may easily be exaggerated. Unless industry develops in a way to offer profitable employment to a growing number of people, the movement out of agriculture as a result of internal competition will be greatly retarded. It is to be expected that in many areas relatively unprofitable farming will have to be continued because the farm family can find no alternative means of livelihood.

Thus far mechanization in the Great Plains and other areas where it has been feasible has not changed the fundamental nature of the farm-business unit. The family farm is still the prevailing type. Mechanization has enlarged the acreage and increased the necessary investment in the family farm, but the latter has not been superseded to any significant degree by the corporate form of farm business organization. A few extremely large-scale ventures have been undertaken, some of which seem to be meeting with success. The great bulk of the output, however, even in areas of maximum mechanization, is coming from the family farms and may be expected to continue to come from that source.

READJUSTMENT IN PRODUCTION

Regional competition in the production of various staple products has been intensified largely as a result of mechanization. This has led to depressed condition in the less favored areas, particularly in 1-crop farming areas where it has been hard to find substitute crops and other sources of income. The reaction is not the same in all areas. In many cases where a commodity has been raised as one element in a farming system of considerable diversity, it is likely to continue in production there in spite of increased competition from low-cost areas, (1) because it is not the only or even the main source of income, and, (2) because of difficulties in finding suitable substitutes for it in the crop rotation or the livestock system. This is exemplified by wheat in the eastern parts of the United States. Supply continues to be forthcoming from these areas in spite of low prices, because the wheat is needed as a nurse crop for legumes and as a means of shifting to other grain crops in the rotation.

In 1-crop farming, however, the effect of this regional competition may be quite different. If the high-cost areas are not successful in finding profitable substitutes and can not successfully reorganize their methods to meet competition, the alternatives are a reduction in the standard of living or gradual farm abandonment.

NORTH AND EAST

Prices of farm products in the North and East declined during 1930 without compensating reductions in costs early enough to avoid serious inroads into farmers' expected margins of return. During 1931, prices will be on a low level. Close inspection of costs is particularly necessary this year if receipts are to exceed expenses. Declines in the price of purchased supplies and in wages give a basis for margins in 1931 more nearly proportional to normal margins for producers who are large users of purchased materials, particularly

feed, and of hired labor. However, small producers whose own labor regularly is a large proportion of the value of their output have low returns in prospect, unless their yields are better than usual and unless they are fortunate in their marketing.

The present situation is only one acute phase of the changes that have been going on for the last 50 years or more. Further adjustments of farm organization and practice must be made in the future as they have been made in the past, more or less slowly, and according to circumstances in individual cases. Nearness to markets is the chief advantage producers in the thickly settled North and East have over other producers, but transportation facilities have been so greatly improved during recent years that the advantage of nearness has been reduced, so far as many products used in large quantities by metropolitan populations are concerned. Urban population is still increasing, but the larger numbers of people will be fed, in larger proportion, with bulk supplies brought in trainloads from those sections that enjoy special advantages in production. All over the North and East, only a few miles separate farms that yield good livings to their operators from farms that are absolutely abandoned. Producers who for any reason can not adapt their programs to changing conditions must in increasing numbers choose between farming and other means of getting a living. Alert farmers on good land by careful management can retain their present relatively strong position.

CORN BELT

Mechanization in the Corn Belt, particularly in the western half, is proceeding at a fairly rapid rate. The general-purpose tractor which is being generally adopted is bringing with it a larger use of the combine for small grain and is occasioning a considerable modification of corn-harvesting machinery looking toward a greater use of mechanical power and a reduction of man labor in the harvesting of corn. This is increasing the capacity of the individual farm worker in that region for the production of the leading crops. It is estimated that under the new methods one man can now handle double the acreage of corn which was possible under the older methods.

Mechanization in crop production has not as yet been paralleled by corresponding labor-saving developments in livestock husbandry. There arises the problem, therefore, of balance between livestock and feed production over a considerable part of the best corn lands. If new methods increasing the amount of livestock per man somewhat commensurate with their increased efficiency of crop production are not developed, the general use of these more efficient crop-production methods will be retarded or a tendency toward a greater degree of specialization both in grain farming and in livestock farming may develop. Probably there will be a considerable increase in the buying and finishing of both hogs and cattle on the part of farmers who find it profitable to adopt the more efficient crop-production methods.

These more efficient crop-production methods are likely to work toward a still further shift to pasture and other forage crops in the less-favored territory. Likewise on the better lands the growing need of means to preserve and increase soil fertility is working toward a larger proportion of legume crops, thus increasing the pasture resources even in these most favored feed-grain producing areas. These two developments are likely to increase the importance of cattle throughout the whole Corn Belt, thus tending to expand not only beef production but dairy production throughout the region.

THE SOUTH

The favorable prices of cotton from 1922-1925 inclusive, stimulated a great expansion of cotton acreage which reached a total, by 1926, greater by nearly 13,000,000 acres, or 40 per cent, than the average for the 5-year period 1918-1922, inclusive. Although the period 1926-1929, inclusive, was not characterized by unqualified prosperity for cotton producers, the relative position of cotton was sufficient to maintain an acreage little below the level reached in 1926. In making production plans, farmers of the Cotton Belt should take into consideration this enormous increase, the considerable expansion of production in certain foreign countries, and the recent tendency of foreign manufacturers to substitute Indian cottons for American cottons. These conditions were largely responsible for the lower prices prevailing during the last five years.

The discouraging influence of low prices at the opening of the planting season, the diminished resources of the growers, and the reduced volume of credit are likely to result in a reduction in acreage. Although reduction is logical, there is danger that in the next year or two the swing to other commercial products may be excessive. Most of the alternative commercial products are confronted with an unfavorable relationship of supply and demand, and the markets for such products may be very easily glutted by a comparatively small increase.

For several years there will be more than usual justification for a more extensive live-at-home program, for there is little prospect that for several years conditions will favor very profitable production in the commercial agriculture of the South. The beginning of such a tendency toward the raising of home supplies is suggested by an increase in acreage of winter wheat sown in the fall of 1930 for every Southern State, and by an increase in rye acreage in every State reporting except Oklahoma. Even in the spring of 1930, although prices of cotton had not fallen to the present low point, increased acreage of corn was reported in every State of the lower South except Florida, Arkansas, and Louisiana. Although the greater attention to cotton production in the five years preceding 1930, combined with other conditions, led to a decrease in the number of hogs and beef cattle in the South, it is probable that this tendency will be somewhat diminished or even reversed during the next several years, and that there will be a further increase of dairy cows and poultry.

The long-time outlook for the cotton industry involves many elements of uncertainty, such as the reported development of successful cotton-picking machines, the increase in cotton acreage in other countries, and the potential increase in the Southwest. The development of a successful cotton-picking machine would favor the further expansion of cotton production into the range lands of the Southwest. It would increase the value of Delta lands and other fairly level areas, create an increased tendency toward larger units of operation, and hasten the general process of mechanization including the adoption of mechanical power. Until its adoption becomes general, not only in the South but in other parts of the world, the introduction of a successful picker would probably increase the preponderance of the cotton industry in southern agriculture, and it would profoundly affect the tenant system and plantation organization, probably by displacing a large proportion of the working population and encouraging the use of hired laborers in place of tenants. Large areas of land now devoted to raising feed for horses and mules would be released for cotton or other lines of commercial production, and many buildings would be no longer needed.

The tendency away from the more self-sufficient types of farming in the direction of a larger proportion of commercial farming will probably continue, accentuated by the depletion of timber resources. Timber depletion will react adversely on southern agriculture in a number of ways.

The special adaptability of southern climatic conditions to the production of early vegetables and semitropical fruits has favored a notable development of these lines of production. The probable increase of about 1 per cent a year in our population, the probable continued growth of urban population at a more rapid rate, and the tendency toward a larger per capita consumption of these products justify the expectation of a steady expansion of these lines of production. However, the large extent of available land is likely to make for recurring periods of overproduction, especially when production of the principal southern staples is not profitable. The growth of cities in the South will gradually expand local markets for dairy and poultry products, and there may be some development of production for extrasectional consumption.

GREAT PLAINS

The agriculture of the Great Plains area (including the chief spring and winter wheat belts, as well as considerable grazing area, and the sub-humid portion of the Cotton Belt) has been undergoing major changes during the past few years. The substantially lower costs of production made possible by recent modifications of the tractor, the combine, and tillage machinery has resulted in a substantial increase of crop acreage in the portion of the Great Plains hitherto primarily used for grazing. If we take these States as a whole, the percentage of increase is not imposing. There has been a corresponding reduction in grazing area and probably a more than proportional

decrease in the relative importance of livestock production as a source of income throughout the Great Plains.

The drastic reduction in prices of the last year and a half is likely to stop this expansion in grain and cotton acreage, at least for the present. With any substantial recovery in prices, however, the expansion is likely to be resumed. There is a considerable additional area of land physically suited for extensive crop growing, particularly in the central and southern portions of the Plains.

The uncertain character of farm returns in this region through variations in rainfall and major price fluctuations (due to severe foreign competition and other factors making for an unstable price) impose farm problems of a somewhat different character from those prevalent in the more humid portions of the country. There is particular need for adequate capital in the form of reserves of feed, seed, and funds; and there is need also of conservatism in new capital commitments. These conditions are likely to be permanent elements in the farming problems of the region. Nevertheless, grain and cotton growing in the Great Plains is likely to continue as an important element in the country's agriculture and on the whole to present as good opportunity for farm profits under proper business and technical methods as can be found elsewhere.

THE WEST

Although no pronounced shifts in relative importance of the major enterprises may be expected in the immediate future, the current low price levels of farm products are causing farmers to reduce operating expenses to a minimum and to consider minor adjustments in their production programs with a view of increasing the net farm income.

In the nonirrigated grain farming belt of the Northwest wheat may be expected to continue as a major farm enterprise. However, in localities where the rainfall is sufficient for the production of sweetclover, alfalfa, and peas, the extremely low price of wheat is causing many farmers to turn to sheep, hogs, poultry, and dairying as sidelines to grain production. The number of cows and heifers being kept for milk in the Western States indicate a moderate expansion of the dairy industry in the immediate future. Expansion in the fluid-milk sheds of the growing Pacific coast cities is justifiable to meet increasing consumption requirements.

Commercial poultry production must continue to face severe competition from areas nearer market. Until egg prices recover from present low levels further expansion in the West seems unlikely.

Any future reduction in the area of grazing land because of expansion of dry and irrigated farming will be very small in this region. Under present management, ranges are stocked to about their full carrying capacity and a material increase in total range livestock production is not probable. However, shifts between beef cattle and sheep in some areas have been marked in the past. With sheep numbers near record heights, lamb and wool prices at low levels, and cattle prices in a relatively strong position, some shifting from sheep to cattle may take place on ranges adapted to both cattle and sheep.

In most of the western apple-producing areas plantings during recent years have been but little more than sufficient to maintain the present bearing acreage and a continuation of this policy seems advisable. There has been a tendency to concentrate production on relatively few varieties. Marginal orchards have been largely eliminated and the industry has been placed on a firmer basis.

Plantings of certain deciduous fruits sufficient materially to increase present bearing acreages have occurred in most of the western fruit districts. Lower prices to the grower seem inevitable unless winter injury kills a considerable portion of young trees already planted or markets are expanded beyond what now seems possible. Increasing competition on the foreign market may be expected from new fruit developments in Australia, New Zealand, and the Union of South Africa.

PRINCIPAL SOURCES OF INFORMATION USED IN PREPARING THE OUTLOOK REPORT

In the preparation of the commodity reports comprising the agricultural outlook the staff draws on all the statistical materials available in the files of the United States Department of Agriculture, and interprets the significant facts and figures in the light of current observation and of trade information and correspondence. So far as possible the quantities and values given in the outlook report are those published by the department. Much of the fundamental detail summarized in regular periodicals and in special publications, although not printed, is available by special arrangement to persons who need it for special analyses.

The flow of information to the department is from the observer on the farm or at the market; sometimes to State or local branch offices, sometimes direct to Washington. The component items can be assembled in a great variety of combinations according to the purpose to be served—commodity, source, destination, carrier, quality, or time may be the basis of classification of items at various stages. For general publication the results are given out by the department on a commodity basis for the States or for designated markets. The figures are usually monthly (but are sometimes weekly) averages. If more detail is wanted, the analyst must usually study the current reports of the market news service or special reports which are supplied liberally at the time of issue in various forms. Files of these details can not be supplied indefinitely after issue; need for the data must be anticipated, request placed with the issuing office, and personal files accumulated against time of need.

Most of the data used in the outlook reports are printed in the periodical, *Crops and Markets*, from month to month by commodities and by States. The December number is especially useful for crop-production data and the February number for livestock inventories. Comparisons are limited to two or three years. Data printed in *Crops and Markets* are eventually summarized in the statistical section of the *Yearbook of Agriculture* (the latest now available is that for 1930 containing figures through 1929), and the figures similarly described are the same in each series except for routine revisions. The *Yearbook* is the standard source for comparisons requiring long-time series, though for certain commodities for which they have been prepared, the data are found in greater detail and more convenient form in the *Statistical Bulletins*. Familiarity with *Crops and Markets* and *Yearbook* series is assumed, and no further reference is here made to those sources.

The *Agricultural Situation*, printed monthly, contains several pages of statistical data summarizing commodity movements, index numbers of prices, and general business indicators related to agriculture, and pertinent comment on developments of the month with respect to regions and to the more important commodities.

Foreign Crops and Markets gives current news on world agricultural production, trade movements, and market conditions in foreign countries. This is a weekly mimeographed publication the distribution of which is limited. Special numbers are prepared from time to time summarizing the situation with respect to specified commodities.

Developments affecting the prices of the principal farm products are given special attention in a monthly mimeographed report entitled, "The Price Situation." This report is covered in condensed form in *Crops and Markets*; the original mailing list is accordingly small, and supplies of back numbers can not be promised.

Frequent use has been made of the retail prices of foods and of wholesale prices of commodities, published monthly by the Bureau of Labor Statistics, of the United States Department of Labor. Its index number series of prices are the base for statements on the general price level, unless some other series is specified. The publications most used are *Monthly Labor Review*, *Wholesale Prices of Commodities*, and *Prices, Wholesale and Retail*.

Statistics of exports and imports are drawn mainly from two publications of the United States Department of Commerce, Bureau of Foreign and Domestic Commerce—monthly figures from Monthly Summary of Foreign Commerce of the United States, and annual figures from Foreign Commerce and Navigation of the United States. Compilations from these sources are used in various publications.

Attention is directed to the following sources, considered especially helpful in developing commodity analyses. Mention is based on general convenience of use. Most of the items are generally available to workers at the several agricultural institutions through prior distribution, in library files, or by special request. Requests for data not covered in the publications named nor in the current reports of the market news service may be made to the Bureau of Agricultural Economics, but crop production information on a county basis can not be supplied from Washington.

SOURCES BY COMMODITIES

Publications are those of the United States Department of Agriculture unless otherwise noted. Printed publications are issued by the department; mimeographed reports are issued direct from the Bureau of Agricultural Economics, United States Department of Agriculture, or its branch offices.
Wheat.—The World Wheat Outlook 1930, and facts that farmers should consider. Misc. Pub. 95.

World Wheat Prospects. (Mimeographed, monthly.)

Flax.—Flaxseed crushings and linseed oil statistics: See Statistics of Fats and Oils, quarterly report of the United States Department of Commerce, Bureau of the Census.

The Farmers' Response to Price in the Production of Flax, by Elliott and Wells. (Mimeographed.)

Wool.—World Wool Prospects. (Mimeographed, monthly.)

Wool consumption report. (Mimeographed, monthly; issued by United States Department of Commerce, Bureau of the Census.)

Production and prices: See Bulletin of the National Association of Wool Manufacturers, issued quarterly.

Horses and mules.—United States Department of Commerce, Bureau of the Census, Censuses of Agriculture, 1920, 1925, and 1930.

Number of tractors on farms: See Census of Agriculture 1920, and 1925.

Dairy products.—World Dairy Prospects. (Mimeographed, monthly.)

Turkeys.—Production: See Crops and Markets, November, 1930, p. 426.

Wholesale prices at New York: See New York Produce Review. N. Y. Urner-Barry Co.

Hay and pasture.—Emergency hay and pasture recommendations. (Mimeographed, Bureau of Plant Industry.)

Desirability of additional pasture lands: See Pa. Agr. Expt. Sta. Bul. 195, and Vt. Agr. Expt. Sta. Bul. 295.

Advisability of feeding more legume hay to dairy cows: See Farmers' Bul. 1573 and 1626.

Feed crops and livestock.—Index numbers of price of feed crops and of prices of livestock and livestock prices. (Mimeographed. A specially computed series.)

Feedstuffs.—Feeding wheat to livestock. Miscellaneous Publication 96.

Reduced Feed Supply and Its Relation to Livestock Outlook. (Mimeographed.)

Special Report on Feed Market Situation, November-December, 1930. (Mimeographed.)

Feed outlook in the southern States: See Agricultural Outlook for the Southern States, 1930-31. Miscellaneous Publication 102.

Hay Market Situation. (Quarterly.) January, 1930. (Mimeographed.)

U. S. Production of Alfalfa Meal. (Mimeographed, monthly.)

Wheat Ground and Wheat-Milling Products. (Mimeographed, monthly, issued by the United States Department of Commerce, Bureau of the Census.)

Statistics of Fats and Oils: Quarterly report of United States Department of Commerce, Bureau of the Census.

Cottonseed Received, Crushed, and on Hand Report, issued monthly by United States Department of Commerce, Bureau of the Census.

Soybeans.—Prices: See Oil, Paint, and Drug Reporter; also occasionally, Foreign Crops and Markets.

Quantities crushed: See Statistics of Fats and Oils, quarterly report of United States Department of Commerce, Bureau of the Census.

Clover and alfalfa seed.—Timely statements of the seed situation, movements, and prices are issued in mimeographs.

Imports: Monthly in Crops and Markets.

Potatoes.—Deal reports: Alabama, Idaho, Maine, Maryland, Michigan, New York, North Carolina, Wisconsin. (Mimeographed.)

Beans.—Mimeographed statements as follows:

Bean Acreage, Yield, Production, and Farm Price, 7 Leading States. Average 1922-1926, Annually 1927-1930.

Bean Imports, by Country of Origin, 1923-1930.

Bean Production, by Varieties, 1922-1930.

Bean Supply and Consumption, 1922-1930.

Vegetables (cabbage, lettuce, tomatoes, onions).—

Car-lot shipments, weekly summaries. (Mimeographed.)

Deal reports (mimeographed) as follows: Cabbage, New York; Texas.

Lettuce, Arizona; California; Colorado. Tomatoes, Florida; Texas;

Mississippi. Onions, Colorado; Michigan; New York; Texas; Utah.

Citrus fruits.—Foreign Crops and Markets, v. 20, no. 13, March 31, 1930.

Citrus Culture in Porto Rico. P. R. Agr. Expt. Sta. Bul. 33.

Citrus Growing in Florida. Fla. State Dept. Agr. Bul. 2. New series, August, 1928.

Citrus Census Lower Rio Grande Valley. Plant Quarantine and Control Administration. Mimeographed circular dated April 1, 1930.

California Crop Report, 1928. Calif. Dept. Agr. Spec. Pub. 96.

Apples.—Statistics and Charts of the Apple Industry. (Mimeographed.)

Exports: See Monthly Summary of Foreign Commerce of the United States. United States Department of Commerce, Bureau of Foreign and Domestic Commerce, December, 1930.

Estimated Numbers of Apple Trees by Varieties and Ages in Commercial and Farm Orchards. (Mimeographed report covering 41 States. This is supplemented by reports for a number of States individually; some have been issued, others are in process.)

Peaches.—Survey of Commercial Peach Orchards, 1929. (Mimeographed.)

Deal reports (mimeographed), Colorado; Georgia; Michigan; New York; North Carolina.

Grapes.—Economic Status of the Grape Industry. Calif. Agr. Expt. Sta. Bul. 429. 1927.

Growing and Marketing Grapes in Erie County, Pa. Pa. Agr. Expt. Sta. Bul. 260. 1930.

Farm Price of Grapes Per Ton, California, by Types, 1919-1930. (Mimeographed.)

Deal reports: California; Michigan; New York.

Strawberries.—Frozen-Pack Method of Preserving Berries in the Pacific Northwest. Tech. Bul. 148.

Deal reports (mimeographed): Louisiana; Maryland; Missouri; North Carolina.

Cantaloupes.—Deal reports (mimeographed): Arizona; California; Colorado; Eastern Shore.

Weekly car-lot shipment summaries (mimeographed).

Watermelons.—Deal reports (mimeographed): Florida; Georgia.

Weekly car-lot shipment summaries. (Mimeographed.)

Pecans.—Pecan Production in the United States 1924-1929. (Mimeographed.) Marketing Pecans. (Mimeographed.)

Cotton.—The World Cotton Situation and Outlook for 1931-32. Misc. Pub. 104.

United States Federal Reserve Board Bulletin.

Liverpool Cotton Association weekly circulars.

International Cotton Statistics, published semiannually by the International Federation of Master Cotton Spinners' and Manufacturers' Associations. Cotton Production and Distribution, annual bulletins by the United States Department of Commerce, Bureau of the Census.

Weekly Trade Report, New York Cotton Exchange service.

Grade and Staple Length and Tenderability of Cotton . . . in the United States. (Annual and periodical, mimeographed.)

Broomcorn.—Mimeographed tables prepared by Market News Service.

Rice.—Rice Facts, 1930-1931 Outlook, With Charts. (Mimeographed.)

Sugar.—Yearbooks of principal sugar-producing countries.

International Yearbook of Agricultural Statistics, issued by International Institute of Agriculture, 1929-30, pages 174-175.

Monthly Crop Report and Agricultural Statistics. International Institute of Agriculture, December, 1930.

Reports from consuls in sugar-producing countries. (Available in files of Division of Foreign Service, Bureau of Agricultural Economics.)

Trade commissioners' reports from sugar-producing countries, summarized in Foreign Crops and Markets.

Weekly Statistical Sugar Trade Journal. Willett and Gray, N. Y.

Die Deutsche Zuckerindustrie. German Sugar Association, Berlin.

Zeitschrift für die Zuckerindustrie der Czechoslovakischen Republik (weekly). Zentralverein der Czechoslovakischen Zuckerindustrie, Prague.

Statistics Dealing With the Beetroot Sugar Industry of Europe (monthly). F. O. Licht, Magdeburg.

Sugar Statistics Reports. Dr. Gustav Mikusch, of Vienna. (Mimeographed.)

Wholesale Prices of Commodities. United States Department of Labor, Bureau of Labor Statistics.

Monthly Summary of Foreign Commerce of the United States. United States Department of Commerce, Bureau of Foreign and Domestic Commerce.

Domestic demand.—Domestic Demand in 1930 and Prospects for 1931, by L. H. Bean. (Mimeographed.)

Statistics on industrial production, building activity and freight car loadings, commodity prices, employment and pay roll, interest rates: See United States Federal Reserve Board Bulletin, current issues.

Foreign demand.—Reports from agricultural commissioners stationed abroad have been summarized in mimeographed statements. Because of frequent changes, statements as of any given date are subject to revision without notice. Significant developments are reported in Foreign Crops and Markets and in special releases.

Farm labor.—Industrial, agricultural, and general employment prospects for 1931. United States Department of Labor, United States Employment Service.

Index of industrial employment: See Monthly Labor Review, December, 1930, p. 177, United States Department of Labor, Bureau of Labor Statistics.

Farm equipment.—Index of wholesale prices of farm implements. See Wholesale Prices of Commodities, December, 1930, p. 8-9. United States Department of Labor, Bureau of Labor Statistics.

Manufacture and sale of farm equipment. United States Department of Commerce, Bureau of the Census.

Farm-building materials.—Index of wholesale prices of all building materials and lumber. See Wholesale Prices of Commodities. December, 1930, p. 9. United States Department of Labor, Bureau of Labor Statistics.

Index of building activity: See United States Federal Reserve Board Bulletin, December, 1930, p. 763.

Fertilizers.—Index of wholesale prices of fertilizer materials, and of mixed fertilizers: See Wholesale Prices of Commodities, December, 1930, p. 12. United States Department of Labor, Bureau of Labor Statistics.

Prices of Fertilizer Ingredients. See Oil, Paint, and Drug Reporter.

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THE AGRICULTURAL OUTLOOK FOR 1932

Prepared by the Staff of the Bureau of Agricultural Economics

Assisted by Representatives of the Agricultural Colleges and Extension Services
and the Federal Farm Board

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SCOPE OF THIS REPORT

This is the tenth annual agricultural outlook report prepared as an aid to farmers in making plans for the next season's operations. Facts that are not readily available to farmers on world-wide and nation-wide supply, demand, and prices have been assembled and interpreted to show as nearly as possible the probable trend of conditions until the time when the products of next season's operations will be marketed. This report is prepared from the national viewpoint and its statements may have to be modified in view of unforeseen changes or peculiar local conditions.

The agricultural colleges and extension forces of the various States are preparing reports which interpret the facts of this report in terms of the needs of farmers of these respective States. Through thousands of meetings, county agents, and others will discuss this information in detail with farmers.

DOMESTIC DEMAND

The domestic demand for farm products has fallen to unusually low levels as a result of the further decline in business activity during 1931. The low level of industrial activity and consumer incomes in 1931 will continue to influence domestic demand for farm products into 1932. Improvement in demand, of course, depends on improvement in business activity which in turn is largely influenced by improvement in credit conditions and the restoration of business confidence. The trends of industrial production and pay rolls through

the spring and summer months should furnish a guide to farmers for the probable demand for their products in the latter part of 1932.

Domestic demand for farm products, after showing some improvement during the first few months of 1931 declined throughout the remainder of the year. Unfavorable financial developments abroad, the development of further liquidation in the security markets, and a high rate of bank suspension in this country were the chief factors in counteracting the favorable developments that were laying the groundwork for eventual business recovery.

The net result of these interrelated developments, manifesting themselves in a further recession in industrial activity, in decreased money incomes of consumers, in falling prices, and restricted credit conditions, was to reduce the gross farm income from the 1931 farm production to \$6,900,000,000 from \$9,300,000,000 in 1930 and \$11,900,000,000 in 1929. This reduction in gross income of about \$5,000,000,000, or more than 40 per cent in two years, reflects chiefly the price decline during the last two seasons. Prices of farm products at the farms fell from 135 per cent of the 1910-1914 average in December, 1929, to 97 in 1930, and 66 in December, 1931, a decline in two years of over 50 per cent. The aggregate volume of farm production which in 1930 was about 2 per cent below the average for 1924-1929, was 2 per cent above that average in 1931 as a result of improved growing conditions. Although the volume of consumption of farm products particularly of foods, remained relatively stable, farmers received lower incomes because consumers, with money earnings greatly reduced, could maintain their consumption only at reduced prices.

The continued decline in farm prices was due to a number of interrelated factors: The demand for industrial consumption of certain farm products (particularly cotton) was greatly reduced during 1931 as the volume of industrial activity, after improving from a level in December, 1930, of 82 per cent of the 1923-1925 average to 90 per cent in April, declined to 71 per cent in December, 1931. The demand on the part of urban consumers of food and clothing was also greatly reduced as the falling off in industrial activity was accompanied by increased unemployment in factories, in the railroads, and in construction. Compared with pay-roll conditions in the prosperous summer months of 1929, factory pay rolls by the end of 1931 were reduced about half, railroad pay rolls about 40 per cent, and pay rolls in construction work more than 60 per cent. Thus the amount of money currently paid out to these large groups of consumers and their dependents has been reduced since 1929 by more than half.

Other factors that have made for curtailment in domestic demand and lower prices are an outgrowth of unfavorable credit and financial developments. Among the major credit changes affecting business activity during 1931 were: Another record number of bank failures totaling 2,290, which tied up over \$1,750,000,000 of deposits; a reduction in deposits of all Federal reserve member banks from \$32,300,000,000 in December, 1930, to less than \$28,000,000,000 in December, 1931; a withdrawal of about \$870,000,000 of bank deposits in the form of currency, and, during the last quarter of the year, a net withdrawal of about \$500,000,000 of gold, these withdrawals having the effect of reducing bank reserves and the ability of banks to extend credit; a severe break in the bond market, during the last half of the year; a further decline in the stock market from March to December; and depreciation of foreign currencies, restrictions on foreign exchange dealings, and defaults in foreign obligations.

The substantial break in the bond market in the last quarter of 1931 resulted in a drop in bond prices of about 22 per cent between August and the end of December. This depreciation in bond prices further restricted the flotation of new securities. As a consequence, the volume of new bond financing during the last quarter of 1931 was particularly low. Security offerings during 1931 totaled \$2,900,000,000, most of it in the first half of the year, compared with nearly \$7,000,000,000 in 1930 and about \$10,000,000,000 in 1929. The volume of foreign financing was about one-fourth of that in the previous year, and offerings of municipal and public-utility securities which have been maintained at fair levels in the past were materially curtailed during the last quarter of the year. Although bond prices have made some recovery since the middle of December, the advance has not yet been sufficient to induce any substantial volume of new financing. The low volume of security financing during the last half of 1931 will tend to keep the volume of construction at an unusually low level during the first half of 1932.

Most of the decline in agricultural prices between December, 1930, and December, 1931, may be attributed to the industrial and financial condition

here and abroad, but increased output of certain commodities also contributed to the decline and these increases in volume were chiefly due to improved growing conditions for cotton, winter wheat, corn, fruits, and vegetables. Larger volumes of dairy products and hogs also contributed to the lower level of farm prices during the last quarter of 1931.

The 1931 decline in business activity was accompanied by a further recession in the general commodity price level. Wholesale prices of all commodities in December, 1931, were 15 per cent lower than a year earlier, most of the decline coming during the first half of the year. Prices of nonagricultural products other than farm and food products declined 10 per cent, while prices of farm products, since they are largely in the nature of raw materials which in depressions fall more rapidly than others, declined 22 per cent at the wholesale markets and 30 per cent at the farms. Partly offsetting the decline in farm prices, there has been some lowering of prices of goods farmers usually buy and a noticeable reduction in farm wages.

The unemployment situation and reduced consumer money incomes which are responsible for the present low level of domestic demand for farm products center largely around those few basic industries which are the largest elements in the general business situation. Farmers should therefore watch the progress of the automobile, iron and steel, and construction industries for evidence of general improvement. It was to a very large extent the construction industries, together with the automobile and textile industries, which rose out of the post-war depression in 1921 to supply employment and buying power to large numbers of consumers and to create a demand for the products and services of allied industries such as the iron and steel and the railroads. It is also in those industries that the recession from the high levels of 1928 and 1929 have been the severest. Thus activity in such capital industries as iron and steel, automobiles, building materials, nonferrous metals, etc., declined from about 135 per cent of the 1923-1925 average in 1929 to about 60 per cent in December, 1931, while those industries that produce more nearly consumers' goods or depend upon the relatively stable flow of food products from farms to consuming centers showed a much smaller decline during this depression. It is therefore in these basic industries consuming largely nonagricultural goods where substantial improvement or very definite prospects for improvement would have to appear before farmers would be warranted in counting on a return in the near future to prosperous domestic demand conditions.

Among these industries, all operating at present at unusually reduced schedules, the automobile industry, is apparently in a better position than the other heavy industries to contribute some stimulus to general activity. Its inventories are low, costs have been cut, efficiency has been increased, and a number of engineering improvements have been adopted. The contribution of the building and construction industries to industrial activity in general is being retarded by the existence of surplus industrial and commercial capacity, by numerous mortgage foreclosures and relatively high building costs in many localities, and by unsatisfactory financing conditions. The contribution of the railroads to industrial activity through their purchases has been restricted as a result of the falling off in freight traffic and earnings.

The unusually low level to which the purchasing power of consumers has fallen is likely to continue to affect the demand for farm products into 1932. Even if some improvement in employment and in the volume of industrial activity should occur during the earlier part of 1932, it is not certain that pay rolls also would increase, for the present tendency is still to reduce wage rates. Insofar as farmers' purchases contribute to industrial activity, very little if any stimulating influence is to be expected, at least during the first half of 1932, in view of the last two unprofitable years in farming and in view of the very low current money receipts of farmers. Bank failures, which restrict credit, continued during January at a relatively high rate. The foreign market for the products of American industries had declined greatly. Industrial activity in most of the countries purchasing our industrial products continued at a low level and there is likelihood that the widespread efforts on the part of other countries to improve their own trade and financial positions by limiting or restricting their purchases of American goods will continue.

The domestic demand conditions in the remainder of 1932 will undoubtedly depend a great deal on the stabilization of credit conditions to aid materially in restoring confidence, and to relieve the difficulties of banks and other lending institutions so that credit will be more readily available to industries that are largely dependent on borrowed capital, such as the railroads and construction

industries. Such stabilization could reasonably be expected to check further recession in business. The Reconstruction Finance Corporation and recently proposed legislation are expected to be important factors in restoring confidence and bringing about more nearly normal credit conditions. These measures are a new element in the present situation. Although it is not possible at this time to foresee their full effect, it is the result of such efforts and of the normal recuperative powers of industry and trade that have brought recovery from previous depressions, and that must be looked to for fundamental improvement in conditions affecting the domestic demand for farm products. On the other hand, improvement in demand for farm products also depends on political and economic developments in Europe which are discussed in the next section of this report.

FOREIGN COMPETITION AND DEMAND

The foreign demand for the agricultural products of the United States has fallen to a low level, and at the present moment there is very little definite evidence of significant improvements in the near future. Although some improvement appears to be developing in some countries, all danger of further recessions in business and curtailment in credit in these countries has not disappeared. A world-wide business revival would have a tendency to increase the foreign demand for agricultural products, particularly cotton, but the numerous restrictions imposed upon international trade and increased production in many foreign countries would tend to restrict the exports of many agricultural products from this country even if some improvement in foreign business should occur.

Both the volume and the value of agricultural exports have been considerably reduced during the last two fiscal years ended June 30, 1931. Comparing the 1930-31 season with that of 1928-29, the value of agricultural exports has been reduced 44 per cent and the volume about 22 per cent. In the five months, July-November, 1931, the value of exports was only 54 per cent of the value in the corresponding months in 1929. The reduced demand for the products of the United States in foreign countries has curtailed the volume of exports in relation to domestic production. Exports in the fiscal years 1923 to 1927 amounted to about 13.4 per cent of total production, whereas in the 1930-31 fiscal year less than 10 per cent has been exported. This decline in exports has been due to the reduced foreign demand and to unwillingness to export freely at prevailing low prices.

Many factors have contributed to the decline in foreign demand for the farm products of the United States. Of outstanding importance has been the world-wide business depression, accompanied by a sharp curtailment in international credit. The depression had begun in some foreign countries before it became clearly evident in this country. The reduction in industrial activity since the summer of 1929 in different foreign countries for which data are available has varied from about 20 to 30 per cent. Industrial depression was accompanied by and caused in part by a general decline in prices of raw materials and manufactured products. The wholesale prices of products in countries to which most of the agricultural exports of the United States go, have fallen as much as the wholesale prices in the United States. During recent months prices have risen in some countries in terms of depreciated currencies but have continued downward in terms of gold.

Industrial depression, declining prices, increasing trade barriers, political unrest, and uncertain financial and credit conditions in several different countries all naturally contributed to a curtailment in international credit. Following the World War, some European countries became largely dependent upon credit from the United States and certain other foreign countries for the purchase of raw materials and perhaps, to some extent, foodstuffs. Under such conditions a curtailment in credit greatly lessened the purchasing power of the consumers in those countries and their ability to buy farm products from this country. In some countries the payment of interest and any part of the international debt was necessarily dependent upon a continuation of fairly easy credit for the purchase of raw materials and a market for the manufactured products. The 1-year moratorium to end on July 1, 1932, helped to relieve the situation.

A favorable development on the credit side in relation to our export trade is to be found in the recent passage of the Reconstruction Finance Corporation act which provides for the extension of credit in connection with the exportation

of agricultural products. Furthermore, any improvement in the general credit situation within the country would indirectly work in the same direction.

Foreign demand for the agricultural products of the United States (other than cotton) was depressed further by the many efforts on the part of importing countries to protect their domestic markets against the declining prices. Increased duties have been supplemented by many regulations designed to protect the home agriculture in the importing countries and maintain production and prices in the face of the depression and the general decline in prices. These regulations include milling quotas, import licensing systems, importing monopolies, sanitary restrictions, and other modes of limiting imports. In some instances the import restrictions on agricultural products of the type exported by the United States have remained unchanged during the past year but are nevertheless severe; in others they became still more severe; in still others where no restrictions had previously existed, they were either initiated or were definitely in prospect by the end of the year. In scarcely an instance was there any significant abatement. By and large, the past year was one in which import barriers, already high in most foreign countries, continued to mount.

In the case of wheat a number of importing countries—notably Italy, Austria, Poland, Finland, South Africa, and Egypt—markedly increased their tariffs during 1931, Italy's tariff being increased from 87 cents to \$1.07 a bushel; five countries—Italy, Netherlands, Greece, Estonia, and Luxemburg—were added to the previous list of six countries maintaining milling-quota systems compelling the use in domestic mills of definite minimum percentages of home-grown wheat; while in some countries such as Norway, Spain, Switzerland, Portugal, and South Africa the foregoing or other modes of import restriction were associated with a definite program of domestic price fixing. Meanwhile Germany continued to impose a duty of \$1.62 a bushel on wheat; France, 85 cents; Spain, 74 cents, and so on; and the first two, together with Sweden, Czechoslovakia, and Latvia, continued to employ milling-quota systems inaugurated at an earlier date.

One development which may prove to be highly significant during the coming year is the British espousal of a new program of protection, and imperial preference. Especially may it prove to be significant in relation to our wheat exports. The domestic wheat quota for British wheat which has already been announced but not definitely fixed (though generally forecast at around 15 per cent of total British requirements) will presumably not greatly affect our exports. But extension of the quota system to the wheat-growing Dominions, which question is to come up at the Imperial economic conference during the summer of 1932, may prove highly significant. Quotas for the Dominions aggregating all the way from 55 to 70 per cent of total British requirements, in contrast to less than 50 per cent which they now furnish, are now being discussed. Acceptance even of the lower ratio may well lead to displacement of considerable American wheat in the British market. Nor is wheat necessarily the only item. For it is possible that preferences in the British market will be extended or increased on other products which we export, especially fresh, dried, and canned fruits. Moreover, inter-Dominion preferences have been increasing and, in line with the whole trend toward closer imperial economic union, will probably continue to increase. Even before the recent turn of events in Great Britain, Canada had adopted increased preferences by its tariff revision of June 2, 1931, tending to encourage the displacement of American fruits and various other products by imports from Empire sources.

Last year likewise saw the first concrete steps toward the conclusion of a widespread system of tariff agreements between the agricultural countries of eastern and southeastern Europe and the industrial countries of central and western Europe whereby cereals from the former countries receive exclusive tariff preferences in the latter countries. Notwithstanding obstacles to such preferential agreements on account of conflicting treaty obligations, several treaties have been concluded and more are in process of negotiation. Their tendency, obviously, is to curtail the demand for imports from countries such as the United States which do not receive the preference and to encourage additional production and exports in the countries which do receive it. If this trend toward a system of exclusive preferences among the continental countries continues, it may well prove to be a considerable impediment to the marketing of American cereals and perhaps other agricultural products on the Continent.

In addition to new import barriers, in effect or in prospect, of the character above described, many countries are now exercising a rigid control of imports

through the medium of rationing and restricting the amount of exchange available for payment for imports.

During recent months the depreciation of exchange in many foreign countries has become an additional factor in international trade. The immediate effect of depreciating exchange in a particular country is to encourage exports and discourage imports of that country. Exchange uncertainties tend to encourage hand-to-mouth buying and to increase the costs of international trade. Trade is also disturbed by the maladjustments in prices among commodities internally and externally. As exchange depreciates, and after it has been stabilized at a lower level, there is a tendency for internal prices to rise sufficiently to offset at least a part of the original adverse effects of depreciation upon imports. For certain commodities, prices in some countries of depreciated exchange have risen to the full extent of the depreciation. But this readjustment has been by no means universal or complete for all commodities and in all depreciated exchange countries, and it is wholly uncertain how soon or how complete the readjustment will be.

The stabilization of exchange at a lower level or the revaluation of the currency of a country at a lower level may make more or less permanent, significant changes in the position of that country in its trade with other countries that have not made comparable readjustments in currency or exchange. For example, the depreciation of the exchange of a country may more or less permanently affect the relation of the wage level, or other factors in production, to the same factors in the production of other countries. Any improvement in competitive position thereby may strengthen the demand of that country for raw materials but may at the same time reduce the demand of that country for other import commodities, if the improvement in competitive position is not accompanied by an equivalent improvement in the real purchasing power of the masses of the people within the country. The recent abandonment of the gold standard by Great Britain was doubly significant in that it not only depreciated the exchange value of the currency of a most important world market for our farm products but also in the fact that many other countries were either obliged to take similar measures or considered it advisable to do so. At the present time only a few countries in the world remain entirely upon a gold basis.

Less than one-fifth of our agricultural exports normally go to countries that are still definitely on a gold basis. The most important of these are France, Netherlands, Belgium, and Switzerland. Italy should perhaps be included in this group. The remainder of our markets may be roughly classified into two groups. The first and most important would include countries such as Great Britain, Japan, and the Scandinavian countries which have departed from the gold standard and the currencies of which have depreciated in the neighborhood of 30 per cent in terms of gold. For the time being at least, this depreciation has definitely reduced the purchasing power of these countries for goods from gold countries such as the United States. The second group of markets includes countries such as Germany, Austria, and Czechoslovakia, where exchange rates are being maintained at par only by drastic regulations and control of foreign exchange. The amount of exchange available to purchase foreign goods is thus limited, either directly or indirectly, and the flow of goods into these countries is necessarily restricted.

Not only has the purchasing power of our best foreign markets been reduced by exchange depreciation or control, but competition has been increased. Under conditions of widespread currency depreciation such as prevail at present, there is some tendency for the trade between the depreciated-currency countries to increase. The United States is the only major agricultural export country fully on the gold basis. The importance of this increased competition varies considerably with the different products entering into our export trade. It is probably most severe in the case of wheat. Canada, Argentina, and Australia, with their depreciated currencies, have an advantage over the United States in selling in foreign markets. In the case of wheat, the decrease in our exports is due not only to currency depreciation in other countries but also to our domestic policies tending to maintain prices of wheat in this country somewhat above their normal relation to world prices. Competition of Scandinavian pork products in European markets has been similarly intensified. Scandinavian exports have been especially increased in the case of bacon; in the case of lard, in the sale of which the United States has normally the most advantage, the American product has not been so much displaced.

Exchange depreciation has given the fruit of Canada, Australia, and Brazil some advantage over American fruit in European markets.

So far as the volume of exports is concerned, cotton and some types of tobacco have been affected less than other export products. This fact is due to the extremely low prices at which these less affected products are selling in the United States and to the natural advantage this country has in the production and sale of these products. Furthermore, in the case of cotton (an indispensable raw material for an industry dependent to a large extent upon the export trade as is the case in Great Britain and Japan) it is to be expected that the effect of depreciated exchange would be less than for products imported directly for home consumption. This is true because the reduction in costs, particularly in labor, in the textile industry as a result of the depreciated exchange puts these industries in a stronger competitive position in foreign markets and thus enables them to increase their activity. This may not, however, greatly increase the aggregate foreign consumption of American cotton since textiles made of American cotton in depreciated-exchange countries will be, to some extent, replacing similar goods from the gold countries.

In the United Kingdom, the most important foreign market for the agricultural products of the United States, business activity has fallen to a very low level and unemployment is very extensive, but there seems to have been some improvement during recent months. The apparent effect of deflating the British currency was to place British industries manufacturing for export in a somewhat better position to compete with the rest of the world. In the cotton-textile industry, for example, production activity promptly increased. The number of the unemployed has been reduced moderately since September. But low purchasing power in many other countries and import restrictions, tend to hold in check industrial improvement in Great Britain.

Conditions in continental Europe are about as unfavorable for marketing agricultural products as are the conditions in Great Britain. The outlook in Germany is dependent upon political and general economic developments which now seem quite uncertain. German purchases are held to a low level not only by credit restrictions but also by various measures adopted for the protection of German agriculture. Germany will continue to take American cotton. An effort is being made to maintain production of wheat, rye, and pork on a high level and thus minimize imports. There is some prospect, however, of a smaller production of hogs in the latter half of 1932, and there is always a possibility of lower crop yields following good seasons, which might require Germany to increase to some extent her imports of foodstuffs.

For a long time France seemed to be almost immune from the depression, but at last that country is suffering materially. Unemployment has increased sharply and many measures are being undertaken to protect not only French farmers but industrial workers from the sale of imported goods.

Conditions in Italy seem more favorable than in some other European countries. The purchasing power of Italian consumers has declined to a low level but some evidence of readjustment and the possibility of improvement in business activity is beginning to appear. This may improve to some extent the market for cotton. The demand for foodstuffs, on the other hand, may be held to a low level by maintaining production within the country.

The economic situation in other European countries varies greatly but on the whole is similar to that in the countries already mentioned. Efforts are being made to maintain domestic production and to curtail the imports of the products of the country.

Depression is more or less general in Japan, but to date the cotton and wheat-flour industries have been less affected than most other industries. Cotton yarn production continues at a high level. By going off the gold standard, Japan is placed in much the same competitive position respecting the export trade with China in cotton goods that she held before the British currency was depreciated. Although Chinese boycotts in the past have not seriously reduced Japanese trade, the current boycott may materially restrict exports of textiles to China. The low prices of American cotton both actually and relative to the prices of Indian cotton have already stimulated record purchases of American cotton. The relatively high price of American wheat as compared with Australian has, however, given the latter a decided advantage in the oriental market.

In China, political and military disturbances in the past have not seriously affected the market for American cotton, tobacco, wheat and flour, and miscellaneous agricultural items. Trade and business carries on to a surprising

degree in the face of handicaps incident to transportation difficulties and other disturbances. Despite low silver exchange, declines in late 1931 in the price of American cotton, tobacco, and wheat have been fully as great as the depreciation of silver; and prices at this time of these American items in China are not high in comparison with prices of competing Chinese commodities. The short crop of Chinese cotton and comparatively high prices for native and Indian cotton have created an exceptionally large outlet for the American growth. Low prices of American flue-cured tobacco enable American leaf to compete with Chinese leaf more favorably than last season in the expanding Chinese cigarette industry. Record quantities of Australian wheat are being used in the flour industry of Shanghai, however, and, in turn, is resulting in a considerable displacement of American flour by Shanghai flour in the flour markets of North China.

Foreign agricultural production continues at a high level. The competition now confronting American agricultural products in world markets is being augmented by currency depreciation in all major agricultural export countries outside the United States. Competition also has been increased by the adoption of export bounties or other aids by a number of countries, especially in connection with wheat, which tend to maintain production in spite of the low prices. The Danubian countries, for example, all have some form of government aid to the cereal growers, and direct bounties are paid to the wheat growers in Canada and Australia. In the deficit countries of Europe agricultural production is being maintained, and in some cases increased, behind tariff walls and other forms of import restrictions.

In surplus-producing countries, such as Canada, Australia, and Argentina, low prices have apparently checked the marked upward trend in crop acreage. Acreage is, however, at a high level following more than a quarter of a century of expansion, and no marked curtailment is in prospect. Canadian wheat acreage showed little change in 1931 compared with 1930, but there was some reduction in wheat acreage in Australia and Argentina from the high levels of that year. The decline in Australia was from an abnormally high acreage considerably above that of any former year. Flaxseed acreage in Argentina has been increased; corn acreage has shown practically no change. Southern hemisphere production and exports of animal products, such as wool, dairy products, and beef, continue heavy. World wool production in 1931 was above that of 1930. There has been some shift from wheat to wool in Australia, and in South Africa sheep numbers showed an increase in 1931 over the preceding year. New Zealand butter and cheese are moving to European markets in record quantities. There has apparently been some decline in the slaughter and exports of beef in Argentina, but Australian beef exports continue to increase. It is clear that shifts and readjustments are taking place in southern-hemisphere agriculture as in other parts of the world. But the southern hemisphere has doubtless not yet reached its potential peak as a source of supply for cereals, fruit, and animal products. These countries will respond promptly to any increase in the effective demand for these products.

Russia, with its large wheat acreage and improved methods of production, has again assumed a position of importance in world wheat markets. Although difficulties of organization and production technic are being encountered, it seems likely that such a position will be maintained, with Russian exports varying greatly from season to season as weather conditions are more or less favorable to the wheat crop. It is significant that, while winter-wheat acreage appears to be increasing, Russian wheat production is still dependent to a large extent on the outturn of the spring-wheat crop, which is grown mostly in dry regions with highly unstable yields. But whatever happens with respect to wheat acreage and production, Russian wheat exports will be greatly influenced by policies of the Soviet Government, which not only controls exports through its monopoly on foreign trade but also apparently has the power to restrict domestic consumption and thus increase the exportable surplus. In the absence of such restrictive measures it is likely that increased consumption by the rapidly growing Russian population would reduce the surplus available for export or require still further expansion of production.

Russia may also become a factor of some importance in the European market for other agricultural products. Particular attention has been paid to cotton and a limited quantity of Russian cotton has been sold outside of the country. Although production has expanded rapidly during recent years, it is not greatly in excess of the pre-war peak. There appears to be considerable additional land

upon which cotton could be grown. Most of this, however, is either in central Asia or Transcaucasia where extensive and costly new irrigation projects would be required, or in certain nonirrigated areas of European Russia where cotton has not been grown on a commercial scale long enough to determine conclusively their suitability for cotton production. Although production has been increasing domestic consumption of cotton in Russia has been restricted and small exports have thus been possible. Any significant rise in the standard of living of its rapidly increasing population would tend to absorb all the cotton Russia now produces and might easily cause a reversion to an import basis for this staple.

Cotton is a notable exception to the general tendency to maintain production in foreign countries. Except for Russia, there appears to be a world-wide tendency toward acreage reduction. This is especially true in the new cotton-growing regions of Africa, such as the Anglo-Egyptian Sudan. In Egypt the Government is restricting cotton acreage. In India the cotton acreage in 1931-32 was the smallest since 1922-23.

Production of vegetable-oil materials has shown a marked upward trend during recent years. This expansion is illustrated by soybeans in Manchuria; peanuts in China, India, and Nigeria; palm kernels in Sumatra, Nigeria, and the Belgian Congo; and copra in the Philippines, the Dutch East Indies, and the Straits Settlements. In practically all of these cases production or exports are at least double pre-war quantities, and in most cases the increase is much greater than this. To this large supply of vegetable oil must be added whale oil, the supply of which has increased tremendously within recent years. This increased supply of vegetable and whale oil competes directly or indirectly with American vegetable oils, lard, and dairy products, in both the domestic and the foreign market.

CREDIT

The supply of farm credit available from strictly local sources has been considerably less than in any recent year. Banks, merchants, and dealers, in agricultural areas are in a very restricted position. By reason of the extremely low agricultural prices, the capital and credit resources flowing into such areas, particularly during the marketing season of 1931, were abnormally small. The more centralized agencies that supply most of the farm-mortgage credit, have been affected by the world-wide business depression and an adverse market for securities. Hence these agencies too have sharply curtailed their lending activities.

It is difficult to determine the net change that has occurred in the need for credit. Lower costs of supplies that farmers must purchase have served to reduce the need for credit, as have unusually large supplies of home-grown feed and food in some sections of the country, particularly the South. Similarly, livestock men in the range country have reduced their operating costs, and with the low livestock prices, feeders require a smaller volume of credit than usual. On the other hand, low farm income has so reduced the ability of farmers to meet fixed charges and current expense that in many cases greater reliance than usual must be placed on borrowed funds. It perhaps is safe to say that generally less credit is required to carry on farm operations at the lowest practicable level, but that in many individual cases farmers need more credit than usual if they are to meet current fixed charges and conduct their operations with reasonable efficiency.

Deposits of country banks have decreased substantially during recent years. From December, 1928, to November, 1931, total time and demand deposits of members of the Federal reserve system located in places of less than 15,000 population, declined 23 per cent in the 20 leading agricultural States, excluding California. Such declines for the period indicated were 27 per cent in the Corn Belt States, 41 per cent in the cotton States, and 30 per cent in the Mountain States. These declines in deposits, together with fear of further withdrawals, caused banks to make even a more-than-proportionate liquidation of their loans and discounts. In all regions, the decline in demand deposits was greater than in time deposits. In as much as most country banks carry a certain portion of their assets in loans or securities which are not liquidated seasonally, it is probable that the supply of credit available for new production loans has been reduced more than proportionately to the decline in total deposits.

The primary cause of the decline in these deposits has been the low prices for agricultural products, although bank suspensions, withdrawal of currency from circulation and, in some areas, drought, have been important factors. The low income of agricultural communities has made new deposits smaller than usual, but requirements for current supplies and particularly for fixed charges, have not been reduced proportionately. Bank suspensions during 1931 were more than twice as numerous as in any full year since 1920 except 1930, and a half more numerous than in 1930. These factors have adversely affected the lending power of banks and the ability of farmers to finance themselves.

A considerable part of the production credit used especially by southern farmers is extended by merchants and dealers through sales on a time basis. These distributors necessarily rely, in turn, upon advances from local banks and book credit extended by supply houses. At present these merchants are handicapped by a large volume of delinquent accounts.

Agricultural credit corporations increased substantially in number and resources in 1931, particularly in the areas that suffered most from bank suspensions and shortage of feed crops. Fifty agricultural credit corporations and livestock loan companies were supplied with part of their capital from loans to individuals from the Federal fund made available by an act of Congress in February 1931, and administered by the Secretary of Agriculture. Even more were established in Arkansas partly by means of funds supplied by the State. Several cooperative marketing associations have received substantial advances from the Federal Farm Board for the capitalizing of agricultural-credit corporations. The State of Mississippi has recently made legislative provision for assistance to persons organizing agricultural credit corporations, livestock-loan companies, and similar organizations, through an act that closely resembles the earlier measure in the State of Arkansas.

Many credit corporations and livestock-loan companies that made loans during 1931 reported a large volume of renewal loans at the end of the year. Such renewals restrict the ability of these organizations to make new advances, except as additions are made to their capital stock or more direct financial assistance is obtained. The Reconstruction Finance Corporation is authorized to make direct loans to agricultural credit corporations and livestock loan companies.

Interest rates charged by country banks and time charges by local merchants and dealers are determined largely by custom and past experience, with the result that they are not adjusted closely to conditions which affect the central money markets. Only the rates charged by credit corporations and livestock-loan companies are tied directly to central money market rates. Under existing regulations, in order to have their paper eligible for rediscount by the Federal intermediate credit banks, credit corporations, and other loan agencies may not charge farmers a rate exceeding by more than 3 per cent the discount rate of these banks. The latter rate in turn may not exceed by more than 1 per cent the rate borne by the last issue of Federal intermediate credit bank debentures.

The market for these debentures has recently been weak in common with that for other securities. The latest issue, offered on January 15, 1932, bears a rate of 5 per cent. Measures for strengthening the market for these debentures are under consideration in Congress.

Farm-mortgage credit conditions are less favorable than a year ago. Continued heavy foreclosures and delinquencies and the urgent demands for funds for other purposes have induced restrictive measures on the part of lenders on farm real estate security. The number and size of new loans have been reduced and there have been general efforts to reduce the size of old loans. On the other hand, the business depression has brought increased demand for mortgage loans as the curtailment of incomes and the failure to obtain loans on personal and collateral security have forced many to seek loans on farm real estate. The result has been a general increase in the total number of farms mortgaged, since the new loans made have not been offset by a corresponding number of old loans liquidated. Although the total number of outstanding loans has increased, the total volume of such loans has decreased. This is explained by the lower average size of loans which has more than offset the increase in number. The percentage that the total farm-mortgage debt is of the total value of all farms has nearly doubled since 1920, having increased from about 11.8 per cent to roughly 20 per cent.

The Federal land banks have not altered their interest rates during the last 12 months. Nine of these banks have a rate of $5\frac{1}{2}$ per cent, and three of them, the Baltimore, Columbia, and New Orleans banks, charge 6 per cent. The joint-stock land banks are relatively inactive and for the most part are making no new loans.

The volume of outstanding loans of the land banks, the insurance companies, and member banks has shown a continuous decline for several years. Most of the important lending agencies have acquired substantial amounts of real estate in satisfaction of debt and have thereby had their lending capacity reduced. Insurance companies have also experienced a heavy demand for policy loans. The Federal land banks and joint-stock land banks have recently been unable to sell their long-term securities at rates consistent with the interest-rate limitations imposed upon them by law.

Some communities, particularly those affected by drought, report almost total cessation of mortgage advances. As a result, farmers in many sections face the necessity of operating with a minimum of credit pending the return of improved conditions. The recent Federal act, appropriating \$125,000,000 to strengthen the Federal land banks, should assist these banks in continuing their loan activities.

General monetary conditions exert an appreciable influence upon the availability of credit for agricultural purposes. During the last year, an abnormal demand for currency, occasioned by numerous bank failures, was an important factor in reducing deposits and in curtailing the operating reserves of existing banks. Until the final quarter of the year, the net drain upon the commercial banking reserves of the country, however, was offset by imports of gold, and interest rates remained at the lowest levels since before the World War.

Following the abandonment of the gold standard by England on September 21, 1931, a record gold export demand reduced our monetary gold stock \$728,000,000 within a period of six weeks. During the same period, the demand for currency increased abnormally so that commercial banks were compelled to meet a drain upon their reserves amounting to \$1,121,000,000. This demand was met by an increase of borrowing by member banks of the Federal reserve system totaling \$454,000,000 and by reducing their reserve balances by \$189,000,000. In addition, the Federal reserve banks supplied funds through open-market purchases amounting to \$492,000,000. A net return flow of monetary gold during recent weeks has substantially reduced the above-mentioned loss that began in September. At the present time (January 16) prevailing rates on commercial paper are $3\frac{3}{4}$ –4 per cent, compared with $2\frac{3}{4}$ –3 per cent a year ago. Bankers' acceptances are $2\frac{7}{8}$ –3 per cent as compared with $1\frac{1}{2}$ per cent, and call loans $2\frac{1}{2}$ per cent, compared with $1\frac{1}{2}$ per cent a year earlier.

Borrowings of member banks have continued at relatively high levels as a result of the currency demand and the gold withdrawals of last fall. On January 13, 1932, money in circulation, by which is meant coin and currency outside of the Treasury and Federal reserve banks, was \$970,000,000 larger than a year ago and our monetary gold stock was \$142,000,000 or about 3 per cent smaller. Total increase of Federal reserve bank credit amounted to \$723,000,000 of which \$575,000,000 represented increased discounting by member banks.

The availability of credit for agricultural purposes in many communities was lessened by the substantial reduction in bond prices which occurred from August to December, 1931. The standard statistics average price of 60 high-grade bonds declined during this period from 98.2 per cent of par to 78.8. Bonds of less favorable rating declined to an even greater extent. Banks which ordinarily would have disposed of investments in order to meet local demands for sound loans, were naturally unwilling to incur the loss involved in selling bonds at such depreciation. During January, bond prices showed some improvement.

The extent to which these adverse factors continue to operate during the coming year will be largely dependent upon the degree to which confidence is restored in the banking situation. The return of currency which has been withdrawn during the last year would assist materially in easing the general credit situation. A decline in the number of bank failures would likewise bring general improvement particularly in the bond market. It may be anticipated that the activities of the Reconstruction Finance Corporation, recently authorized, will be an important factor in bringing about more stable credit conditions, for agriculture as well as for industry in general.

FARM LABOR, EQUIPMENT, AND FERTILIZER

FARM LABOR AND WAGES

During 1932, the supply of labor for farm work is expected to be abundant. Even should industrial employment increase markedly from the present low levels the supply of farm labor will be plentiful.

The continued decline in the prices of farm products during most of 1931 caused a sharp falling off in the demand for farm labor. At the same time the increasing unemployment in industry added greatly to the supply, and on January 1, 1932, the supply of farm labor in per cent of demand was 200, compared with 171 on January 1, 1931, and 115 on January 1, 1930. As a result of these changes in the demand and supply, the index of farm wages fell from 129 on January 1, 1931, to 113 on October 1, 1931, and to 98 on January 1, 1932. (The index is based on the annual average of the pre-war years, 1910-1914.) Even through the summer of 1931 wages continued to decline, whereas ordinarily there is a seasonal advance from January to October that averages about 7.5 per cent.

From October, 1929, to January 1, 1932, the United States average of farm wages per day without board dropped 43 per cent. The drop was relatively less severe in the North Atlantic States, amounting to 35 per cent. In the North Central and South Central States the declines were 48 and 44 per cent respectively. The wage in the North Atlantic States on January 1, 1932, averaged the highest in any part of the country. The lowest regional average was reported from the South Central States.

BUILDING MATERIALS

Total building construction in the United States and especially residential construction, has declined sharply since October, 1929, and in December, 1931, reached the lowest levels in several years. During the same time there has been a marked decline in construction costs, both for materials and labor.

In October, 1929, wholesale prices of building materials averaged 172 per cent of the pre-war period, 1910-1914, but in November, 1931, prices were only 130 per cent of pre-war, a decline during the period of 24 per cent. Prices paid by farmers for building materials did not show any appreciable decline until the summer of 1930 and have since declined much less than wholesale prices. Up to June, 1931, the latest date for which retail figures are available, prices paid by farmers had declined only 12 per cent from the level of building material prices in June, 1929, whereas wholesale prices for the same period had declined almost 20 per cent. One of the principal reasons why the prices paid by farmers declined less than wholesale prices was the lag in the response of retail prices to changes in wholesale prices.

FARM MACHINERY AND EQUIPMENT

From January, 1925, to September, 1929, average wholesale prices of farm machinery remained fairly constant. From September, 1929, to December, 1930, average wholesale prices of machinery dropped about 3 per cent. This decline occurred mostly in the latter part of 1929 and early part of 1930. From December, 1930, to December, 1931, the average wholesale prices again dropped about 3 per cent, making a total decline of 6 per cent since September, 1929. Wholesale prices in June, 1931, were 30 per cent above average annual wholesale prices for the period 1910-1914, and prices paid by farmers were 53 per cent above the average for 1910-1914. From June to December, 1931, wholesale prices declined further and stood at 26 per cent above pre-war prices. Prices paid by farmers since June, 1931, are not now available.

The general price level of horse-drawn equipment has continued somewhat higher than that of all farm machinery. Increased use of mechanical power on farms during the last 14 years, resulting in decreased volume sales of horse-drawn equipment, has been partly responsible for the relatively higher price level of the latter type of equipment.

FERTILIZER

Gross farm income from the important fertilizer-consuming crops affects the purchases of fertilizer for the following year. Gross income in 1931 was unusually small and tag sales in the 13 Southern States for the period August

to December were 22 per cent less than in the corresponding period of 1930. Wholesale prices of fertilizer materials declined 16 per cent during the last year and 22 per cent during the last two years. The decline in prices was most severe in the case of the ammoniates. During the last half of 1931 (July to October) prices of organic ammoniates averaged about 50 per cent less than in the same period of 1930, prices of sulphate of ammonia averaged 27 per cent less, superphosphate 12 per cent less, and potash prices were the same as a year earlier. Wholesale prices of mixed fertilizers at factories during the last half of 1931 averaged about 15 per cent less than during the same period of 1930. Retail prices of fertilizer to farmers on September 15, 1931, were 11 per cent lower than in the fall of 1930.

WHEAT

Events of the last year have given evidence that a readjustment of wheat production is taking place. The acreage of the world, excluding Russia and China, has shown a significant decline for the first time in seven years. Russia, however, expanded its acreage so much that the total wheat area of the world excluding China has shown only a slight decrease. For several years past, world production has increased much more rapidly than has consumption, and there has been a consequent marked increase from year to year in the world carry-over. During most of the current season, from July 1 to date, wheat prices in the United States have been high relative to prices abroad, and exports have been very small. Despite the large stocks now on hand, United States cash prices have been relatively strong as compared with futures, owing partly to the very small production of hard spring and durum wheats, and partly to the large production of current supplies being held by the Grain Stabilization Corporation. Indications of a reduced crop and the possibility of a short crop of winter wheat in 1932 have also tended to maintain prices in the United States and to prevent large exports. Allowing for a "normal" minimum carry-over of 125,000,000 bushels, the calculated exportable surplus of the United States as of January 1 amounted to about 300,000,000 bushels, compared with 230,000,000 as of January 1, 1931. Owing to large Grain Stabilization Corporation holdings the surplus actually available for export in the current season is much smaller.

World wheat prices have declined in the last five years under the influence of a combination of unfavorable factors. Of primary importance has been the rapid expansion in world wheat acreage which has been under way since 1925. This rapid expansion in acreage has resulted in wheat production increasing more rapidly than consumption and in the piling up of large surplus carry-overs. There was a marked decline of wheat prices in 1928 when unusually high yields throughout most of the world on an already expanding acreage resulted in a bumper world crop. Stocks of wheat rose to unprecedented heights and the world carry-over out of the 1928-29 crop year amounted to over 600,000,000 bushels.

Because of low yields in 1929-30, world production (excluding China) was smaller by 534,000,000 bushels, or more than 10 per cent, in spite of some further increase in acreage. During the first part of the 1929-30 season prices were considerably higher than during the previous year. But as the season progressed, it became evident that stocks in the surplus-producing countries would not be reduced as much as the smaller production would indicate. Several factors contributed to the reduction of takings by importing countries. European importing countries were intensifying import restrictions on wheat; the general commodity price level was low and falling, and general business activity continued to decline. As a consequence there was a tendency in Europe to allow stocks to decline and the burden of carrying still larger stocks was imposed on the exporting countries. The result was a decline in prices during the latter part of the 1929-30 season to levels lower than those prevailing in 1928-29.

In 1930-31 yields were higher than in the preceding year, and with acreage still further expanded in many countries, another very large crop was produced. The total production for the world, excluding China, amounted to approximately 4,900,000,000 bushels, or 640,000,000 bushels in excess of the previous year's crop and 100,000,000 in excess of the crop of 1928-29. Total available supplies were therefore at new high levels. In addition to the absolute volume of supplies, moreover, the reentry of Russia into the ranks of the important exporters was a bearish factor of major significance. Russia shipped a total of about 110,000,000 bushels during the season, most of it

during the fall and early winter months. Much of this grain was shipped on consignment, and it piled up unsold in European ports. The abundance of Russian grain, easily available, substantially reduced the bargaining power of other exporters, and despite the fact that United States supplies were largely withheld after September, prices declined to new low levels during the early winter. After January, shipments from the Southern Hemisphere were maintained at a high level in spite of low prices and since European importers showed no disposition to build up stocks, world prices remained at very low levels. In the United States prices from mid-November through June were maintained well above their normal relationship to Liverpool, largely as a result of the purchases of the Grain Stabilization Corporation.

For the current season of 1931-32 world production was considerably smaller than last season, but accounted-for stocks on July 1 totaled about 640,000,000 bushels, being considerably higher than the previous record of 1929. Production for the world, outside Russia and China, was smaller than in 1930-31 by about 80,000,000 bushels or almost precisely the same as the increase of stocks. No definite estimate of the size of the 1931 Russian crop is available, but it is known to be smaller than that of the previous year in spite of the increased area. However, yields were apparently relatively good in the winter-wheat regions which are accessible to the Black Sea ports and heavy shipments were made early in the season, so that exports appear likely to total about three-quarters as much as last season. World prices have averaged a little lower than during the last half of 1930-31. In the United States, prices of winter and soft white wheats have been much lower than last year when prices were maintained by stabilization purchases. The short crops of hard red spring and durum wheats, however, have resulted in prices of these classes being at about the same levels as during the latter part of last season. Prices even of the winter wheats have been considerably above their normal relationship to Liverpool during most of the season owing largely to four factors: The withholding of Grain Stabilization Corporation stocks from the market, the short supplies of spring wheats, small marketings by farmers, and the prospect for a marked reduction in the winter wheat crop of 1932.

To protect their wheat growers from low prices resulting from the world-wide decline in wheat prices, most of the large importing countries have raised their tariffs, or have adopted other measures which restrict the importation of foreign wheat and raise prices of their home-grown wheat above the world level. These restrictions have tended to increase the production and decrease the consumption of wheat within their borders. The reduction in consumption has resulted partly from the higher prices which consumers of these countries must pay, and partly from the deterioration in the quality of wheat, flour, and bread as a result of the restriction on importing, milling, or baking. The uncertainty of tariffs and milling restrictions, together with the unsettled financial situation in Europe, has also tended to reduce the quantity of wheat stocks which dealers in importing countries are willing to carry and has thereby increased the burden of stocks in the exporting countries.

Of especial importance in the expansion of the world's wheat area has been the Russian situation. Russia embarked on a program which called for a great expansion of its wheat production. In 1930-31, as a result partly of increased acreage and partly of high yields, Russia contributed an important share of the world's wheat exports. Acreage was again increased in 1931, but yields were low, and although Russian shipments from July to December amounted to 67,000,000 bushels, total shipments for the season are likely to be less than in 1930-31.

One of the causes of the long-continued decline and the present very low level of wheat prices has been the difficulty of reducing acreage. The reduction of the acreage of a crop like wheat is a slow and difficult process in most areas. In many wheat-growing areas there are not alternative crops to which the farmer can feasibly turn. Under such circumstances, reduction of wheat acreage will mean abandonment of land and may mean abandonment of farming by the wheat grower. But in times of business depression it is very difficult for a farmer to find any other means of making a living. Even in areas in which other crops can be raised on wheat land, it may not pay to turn to these other crops in a time when prices of almost all other farm products are low. Altogether, in times like these, reduction of wheat acreage is likely to take place slowly.

Nevertheless, the world acreage for 1931-32 is estimated to have been slightly smaller than that of 1930-31. The total wheat area of the world, excluding

China, amounted to 336,900,000 acres compared with 340,300,000 for 1930-31. This reduction in the world total is the first to take place since 1922-23 when the total area declined from 261,800,000 acres to 249,100,000. Although the reduction in acreage which has taken place for the world, excluding China, has been small, a consideration of acreage changes by regions indicates that the reduction is of real significance. For the world excluding both Russia and China, the reduction in area is 12,000,000 acres, that is from 255,500,000 in 1930-31 to 244,500,000 in 1931-32.

At the acreage level of 1931-32 the wheat area of the world outside Russia and China, would, with average yields, produce a crop of approximately 3,660,000,000 bushels. As the average disappearance of wheat for the last five years in the world outside Russia and China (including exports to China) has been 3,671,000,000 bushels yearly, the 1931-32 acreage level would be almost sufficient to supply the average consumption of the last five years without any addition to that supply by way of exports from Russia. Hence, if room is made for any considerable amount of exports from Russia during the next few years, it will have to be a result of an increasing consumption or of a decreasing area for the world outside Russia and China. Total wheat consumption for the world outside Russia and China (including exports to China) has shown a marked upward trend in past years, and despite temporary setbacks an upward trend may be expected to continue. The decrease of 12,000,000 acres in the wheat area of the world outside Russia and China, which occurred last year, would be sufficient at an average yield of 15 bushels per acre to account for a decrease of 180,000,000 bushels in production.

Russia appears to be the only one of the important exporting countries that did not reduce acreage for harvest in the 1931-32 season. In the United States, there was a reduction of over 6,000,000 acres. In Canada, although present estimates of area of spring wheat sown actually show an increase, it seems likely that the increase is due to a revision of the 1931 figures to the new census basis and then the acreage estimate of the preceding year is revised, it will be larger than that of 1931-32. In both Argentina and Australia the area is estimated to have been reduced by approximately 4,000,000 acres.

Europe as a whole excluding Russia, has shown some increase in its wheat area, there having been an increase from 83,800,000 acres in 1930-31 to 92,400,000 in 1931-32. This increase apparently is the result of high protective tariffs, milling and import restrictions, and substantial Government aid which has been given to producers by the European exporting countries. A portion of the increase in wheat acreage in Europe, however, has been at the expense of rye.

In Russia, the wheat area has increased from 22,300,000 acres in 1922-23 to 92,400,000 acres in 1931-32. Most of this increase represents a return to pre-war levels, the average for 1909-1913 for present boundaries being 74,000,000 acres. (The pre-war estimate is probably not strictly comparable to post-war figures owing to changes in estimating methods; Soviet statisticians use a figure about 7 to 9 per cent larger for the comparable pre-war level). The Russian area increased much more rapidly during the first four of these years than during the last five, the average yearly increase having been 12,900,000 acres from 1922 to 1926 and only 3,700,000 from 1926 to 1931. In part, the less-rapid increase in recent years has been due to the fact that less good wheat land is readily available for expansion of the area and in part to lack of adequate motive power for cultivation and to administrative difficulties. Earlier increases in the Russian wheat area were mostly in the older agricultural regions, especially the southern and central part of European Russia. The later increases were largely through expansion of the area into newer regions in the southeastern part of European Russia and in Asiatic Russia. The newer regions, being both more remote and less adequately supplied with transportation facilities, are much less accessible both to seaports and to the principal consuming areas of Russia. Low prices appear to have been definitely disappointing and in the long run, despite the absence of free competition and freedom of action on the part of individual producers, there seems to be no doubt that Russia must take account of alternative opportunities in finally working out its program of agricultural production. If the returns which it can obtain for exports of agricultural products are too disappointing, there will be the tendency to reduce exports and to divert some of its productive energies to the making of manufactured products. It appears that the 5-year plan itself intends to make Russia eventually a virtually self-sufficing country, and that large exports of agricultural products are thought of as a temporary expedient by which the industrial

plant can be built up more readily. The population of Russia is rapidly growing, having risen from a level of 140,000,000 in 1913 to 148,000,000 in 1927 and 161,000,000 in 1931. Furthermore, it is to be borne in mind that the Russian diet is very greatly restricted, both as to variety and quantity with the result that there is opportunity for a great deal of future increase in Russian agricultural production to be absorbed by an increase in domestic consumption.

The wheat-market situation for the 1932-33 season, as for any single season, is more dependent upon current supply and demand conditions than upon the level of acreage and of normal wheat consumption. These current supply and demand conditions include the size of the carry-over from the preceding season, the yields of the current year, and conditions affecting the level of demand through the purchasing power of people of the various countries. Of the various factors that are of primary importance in the 1932-33 situation, there is fairly clear evidence as to the size of the carry-over and as to the broad outlines of the world demand situation; but with regard to the production of the world as a whole, little is yet known.

The quantity of wheat available for export and carry-over in the United States, Canada, Argentina, and Australia, is estimated at a total of 970,000,000 bushels as of January 1 compared with 961,000,000 a year earlier. Present indications are that the exporting countries of the Danube Basin and Russia have somewhat less wheat available for export than at this time a year ago, but in any event their contribution to world exports during the period January to July is relatively small. In the importing countries of Europe generally, remaining supplies of domestic wheat and stocks of imported wheat appear to be small, though for the United Kingdom stocks are very large. Hence, total European import requirements for the period January to June, 1932, are not expected to differ very greatly from those of the corresponding period of 1931. With both supplies in the principal exporting countries and requirements of the importing countries about the same as last year, it is clearly evident that stocks of old wheat in countries of the Northern Hemisphere and the remaining exportable surplus of the countries of the Southern Hemisphere as of July 1, 1932, will again be large. There are uncertainties as to crop estimates and import takings, but even in case stocks should differ considerably from the 641,000,000-bushel total accounted for as of July 1 last year, stocks would still be at a high level.

There is some prospect for a slight reduction in world acreage of wheat to be harvested in the 1932-33 season. Russian sowings of all winter cereals in the fall of 1931 are reported to be 3 per cent smaller than in the fall of 1930 but winter wheat sowings have apparently increased somewhat. The 1932 spring wheat sowings in Russia will depend largely upon whether conditions and the availability of motive power in the spring. The reduction in the area of fall-sown grain, together with indications that only a small increase in wheat area is planned for 1932, makes it unlikely that there will be as much increase in Russian acreage for harvest in 1932 as there was in the previous year. The six European countries that have thus far reported winter-wheat acreage show an increase of a little over 1,000,000 acres or approximately 2.7 per cent in the area sown. Some of these show increases and some decreases, the only large increase being in France where 1,600,000 more acres were sown in the fall of 1931 than in the fall of 1930. Last year's sown area in France, however, was considerably smaller than usual. Hence, reported sowings in Europe to date suggest a small increase in the area compared with that of last season.

In the United States there is a fairly definite prospect of a much smaller production of winter wheat in 1932 than in 1931. The area sown to winter wheat in the fall of 1931 amounted to 38,682,000 acres. This is 10.4 per cent less than the acreage planted the previous fall. The condition of the crop on December 1 was the lowest, with the exception of two years, in the last two decades. The average abandonment for the last 10 years has been 12.6 per cent. The abandonment during last winter was only 5 per cent. If abandonment this year should be average, this alone would result in a net decline of nearly 8 per cent in acreage to be harvested. This, coupled with the reduction of 10.4 per cent in acreage sown, would amount to a total reduction of nearly 18 per cent in the area of winter wheat actually to be harvested in 1932, compared with that harvested in 1931.

If both abandonment and yield this year should be average, the acreage of winter wheat sown is sufficient to produce a crop of about 500,000,000 bushels compared with an average of 620,000,000 bushels in the last five years. Of this

quantity, approximately 320,000,000 bushels would be hard red winter and 140,000,000 soft red winter. In recent years the average domestic utilization of hard red winter wheat has been in the vicinity of 225,000,000 bushels annually, and of soft red winter wheat about 150,000,000 bushels. It is possible, of course, to substitute the softer and lower protein wheat of the hard red winter class for soft red winter wheats. Hence, no hard-and-fast line can be drawn as to domestic requirements. Nevertheless, crops of about the size which would be produced this year if yield and abandonment turn out to be average, have resulted in recent years in substantial premiums for soft as compared with hard red winter wheats.

The acreage of spring wheat including durum harvested in 1931 amounted to 13,940,000 acres and was the smallest since 1896 owing to heavy abandonment in the Dakotas and Montana. The yield of 7.5 bushels per acre was the lowest on record. More normal weather conditions would have resulted in larger yields and a larger harvested area of both spring and durum wheats.

It is, of course, too early to say definitely what will be even the approximate production of spring wheat this year. In view of the depleted finances of farmers in the spring wheat belt and the difficult credit conditions confronting them, it is not possible to say even approximately how large an acreage will be seeded to spring wheat. However, in view of the extremely unfavorable growing season last year, total production of spring wheat this year may be larger than last year.

If acreage and yield this year should be such as to produce a spring-wheat crop about as large as that of 1930 (when yields were about average), the spring wheat crop would be about 250,000,000 bushels. If a spring-wheat crop of this size should materialize and if the production of winter wheat should be about 500,000,000 bushels, the possibility of which was indicated above, the total wheat crop would be about 750,000,000 bushels. This would not be very much in excess of the total domestic consumption of wheat in the 1930-31 season, which amounted to 728,000,000 bushels.

Feeding of wheat in 1930-31, however, was very heavy owing to the low prices of wheat relative to other grains, a more usual domestic consumption being about 100,000,000 bushels less. If there should be a crop of 250,000,000 bushels of spring wheat it would not result in an acute shortage of hard red spring and durum wheats, which shortage this year has caused these wheats to command very high premiums. The carry-over of hard red spring and durum wheats from the current season, however, is expected to be small. During the last few years average yields have usually resulted in the crops of hard red spring wheat east of the Rockies being about equal to domestic consumption, and in durum wheat crops which provide a considerable surplus for export.

The estimated total supply of wheat available in the United States for the 1931-32 season, including carry-over from the preceding year and the new crop, amounted to 1,211,000,000 bushels. Allowing for a consumption of 635,000,000 bushels for food, feed, and waste (compared with 651,000,000 bushels disappearance for these purposes last year) and for 73,000,000 bushels to be used as seed, would leave 503,000,000 bushels available for export during the 1931-32 season, and for carry-over into the following year. Net exports of wheat including flour from July 1 to December 31 were approximately 74,000,000 bushels, leaving a total of 429,000,000 bushels available in the United States as of January 1 for export and carry-over. Deducting an allowance of 125,000,000 bushels as a "normal" minimum carry-over on farms and in the hands of the trade and millers, would leave 304,000,000 bushels nominally available for export during the remainder of the season compared with 230,000,000 bushels a year earlier. Included in the figure of 304,000,000 bushels nominally available for export are the stabilization corporation stocks. The corporation's holdings are reported to have been about 187,000,000 bushels as of December 31, including 29,000,000 bushels in futures contracts, but not including wheat already sold abroad, but not yet shipped. Since the Grain Stabilization Corporation is committed to withholding most of its stocks from the market, such quantities as may be held July 1 should not be included in the surplus actually available for export during the current season.

FLAX

The 1931 United States flaxseed crop of 11,018,000 bushels which was reduced by unusually low yields and heavy abandonment, is materially below

1931-32 domestic requirements. However, average yields of flaxseed on an acreage as large as the 3,600,000 acres seeded in 1931 would produce a crop nearly equal to the prospective small domestic requirements for 1932-33. Any material increase in acreage or better-than-average yields would tend to reduce the advantage afforded by the present tariff of 65 cents per bushel and reduce the margin between domestic prices and those in important surplus areas. Abnormally high temperatures and extreme drought during the summer and fall of 1931 materially reduced the quality of the United States crop and considerable flaxseed is not fit for seed purposes. The small supply of good-quality flaxseed for seeding the domestic 1932 crop and shortage of funds for purchase of seed may be factors in limiting the 1932 acreage.

The downward trend in flax and flax-product prices during the 1930-31 crop year and the first half of the 1931-32 season was due primarily to a decreased demand, burdensome world supplies, and a declining tendency in the general commodity price level in the United States and in foreign countries. On the basis of official crop statistics, the 1930-31 world crop, including Russia, closely approached the previous record crop of 1927-28 of 158,194,000 bushels. However, if the Argentine crop figure is revised on the basis of exports during 1931, world production for 1930-31 was of record proportions. Present indications are that the world crop of flaxseed in the 1931-32 season will be less than the crop of last year when 153,788,000 bushels was harvested, according to official estimates. The 1931-32 crop in 14 countries reported to the close of December totaled 128,220,000 bushels compared with 138,900,000 bushels last year. Every large flax-producing country of this group showed a decrease in production, with the exception of Argentina and Uruguay. Weather conditions favored a high yield on a record acreage in Argentina and a crop of 82,672,000 bushels was produced. This is materially above average. In contrast, the United States and Canadian crops were sharply reduced by drought. Production in the United States was only 11,018,000 bushels compared with last year's final estimate of 21,240,000 bushels, and 15,910,000 harvested in 1929. The Canadian flaxseed crop was reduced by drought to 2,847,000 bushels compared with 4,399,000 bushels in the previous year, despite the increase of 8 per cent in acreage. The Indian crop last year was about the same as in the previous season and was estimated at 15,120,000 bushels. Some increase in the 1932 Indian acreage is indicated by the first estimate, which placed the acreage at 2,377,000 acres compared with the revised initial estimate of 2,177,000 acres last year. The final figure last season was 3,020,000 acres.

In 1931 about 3,600,000 acres were seeded but on account of unfavorable conditions only 2,313,000 acres were harvested. Abandonment in the Dakotas and Montana was about one-half of the planted area. For the country as a whole the yield per harvested acre was 4.8 bushels in 1931, 5.7 bushels in 1930, and 5.2 bushels in 1929.

Since domestic requirements are larger than available supplies, it will be necessary to import a considerable quantity of foreign seed into the United States during 1932. Disappearance of linseed oil into domestic and export channels during last season was about 498,000,000 pounds compared with 592,000,000 pounds in the previous season and 812,000,000 pounds in the 1928-29 season. Assuming an outturn of 18 pounds of oil per bushel of flaxseed crushed, and oil requirements for the 1931-32 season about the same as for the 1930-31 season, about 27,700,000 bushels would be required to meet demand for seed for crushing. In five seasons, 1924-25 through 1928-29 when demand for oil was active, annual crushings averaged about 41,000,000 bushels. On account of the low oil content of the new domestic crop, it may be necessary to crush a relatively larger quantity.

Flaxseed is processed for the oil in the United States, whereas in Europe, the primary interest is in the meal. Demand for linseed oil and linseed meal in the United States and Europe in 1930-31 and in the first half of 1931-32 was small. Domestic demand for linseed oil in the United States was closely related to the volume and extent of building activity which at the close of 1931 was at the lowest levels during the present depression. The small available supplies of linseed meal have been a strengthening factor in the market for that concentrate, but supplies of other concentrates which may be substituted for it, including cottonseed cake and meal, gluten feed and meal, and soybean meal, are large. Since the main product from flax in Europe is linseed meal, demand for it is affected by the feed-grain supplies. Increased corn and oats crops were reported in Europe, but the barley crop was smaller. The European potato crop was above average but was smaller than that of 1930. The total tonnage

of feed grains in the countries reporting to the close of December was 59,400,000 compared with 58,000,000 tons last season and 67,500,000 tons in 1929-30. Stocks are larger than a year ago, with the possible exception of feed potatoes. Sustained shipments of corn from the Argentine also suggest liberal supplies in that country to supplement European harvests.

During recent years, large supplies of other drying oils available at relatively low prices have been a factor in the reduced use of linseed oil. Generally speaking, consumption of linseed oil as compared with such substitute oils as tung, soybean, perilla, and menhaden oils decreases when the price of linseed oil is relatively greater than that for substitute oils. Consumption of linseed oil compared with that for the substitute drying oils has declined sharply since 1928-29, reflecting the large supplies of low-priced substitute drying oils.

Flaxseed prices in the United States at the close of 1931 were at the lowest level since 1914, despite the unusually small 1931 domestic crop. No. 1 flaxseed averaged \$1.43 per bushel at Minneapolis during December, 1931, the lowest price for that month since 1912 when the second largest United States crop on record was produced. No. 1 flaxseed averaged \$1.25 per bushel in December, 1912. Prices received for flax by United States farmers are governed largely by production of flaxseed in Argentina, Canada, and the United States, and the status of domestic and foreign demand. Production has been large during late years in the above-mentioned countries owing to large harvests in Argentina. In contrast, demand for flaxseed has been small. When Argentine production is very large, supply changes in the United States do not materially alter the return per bushel received by domestic flaxseed farmers when changes in the price level are considered, unless a United States crop larger than domestic needs is produced. A harvest larger than prospective 1932-33 domestic requirements would reduce the effectiveness of the tariff and make for a narrow spread between domestic and world market prices.

The 1931 United States flaxseed crop was of poor quality, as it was light and had a lower oil content than usual. In many localities the crop was a total failure or the seed was so shrunken as to be unfit for seed purposes. It is probable, therefore, that an unusual demand may appear in some sections in the spring of 1932 for seed of good quality for seeding. The small available supply of seed flax may be a factor in limiting the acreage seeded in 1932. Shortage of funds for seed purchases may also be a factor.

OATS

The area of oats for the United States as a whole was practically the same in 1931 as in 1930. Lower yields, however, resulted in a crop considerably smaller than that of 1930 and a trifle smaller than the 1929 crop. A low level of feeding demand, together with supplies of other feed grains more plentiful than last year, has resulted in prices during the first five months of the crop year being still lower than those of last year. The decline in numbers of workstock during the last 15 years has greatly restricted the demand for oats as a feed for horses and mules, and has brought oats into more direct competition with other foodstuffs.

The 1931 crop of 1,112,000,000 bushels was one of the smallest in recent years and was the result of low average yields on a harvested area of 39,722,000 acres. Although the total area for the United States was almost identical with that of 1930, there were significant changes in the acreage of various States. There was a marked increase in the oats area of Oklahoma and Texas, whereas that of Illinois, Iowa, and Ohio decreased somewhat from the rather high levels of 1930. In North Dakota, South Dakota, and Montana there were notable decreases which were due principally to abandonment on account of drought. The crop was materially reduced in the drought area of the North Central States and in the chief producing area of the Western States with the exception of Washington. In the South, which had been subjected to the drought of 1930, the acreage was increased to provide an early feed crop which, together with good yields, resulted in a production far greater than average.

Total supplies of oats in the United States as of August 1, 1931, are estimated at 1,192,000,000 bushels, which was 157,000,000 bushels less than for last season. The quantity available this season is not much below that available for 1929-30, which was estimated at 1,213,000,000 bushels. In that season domestic utilization was the lowest in recent years, amounting to 1,134,000,000 bushels, and although oat prices were high relative to other grains, a moderate carry-over of 72,000,000 bushels remained on July 31, 1930.

The estimated world production of oats in 1931 was nearly 7 per cent below that of 1930. In Europe, however, the production was more than 1 per cent larger than the short crop of the preceding year, and in Argentina it was about 24 per cent larger than the unusually small crop of 1930-31. The principal decreases in production were in the United States and Canada where low yields resulted from the drought. In Canada, although the crop was about 100,000,000 bushels below that of 1930, it was larger than the short crop of 1929.

Exports of oats from the principal exporting countries since July 1 have been about 18 per cent above those of the preceding season. Shipments from Argentina and Danubian countries have fallen below those of the latter part of 1930, but in spite of a smaller crop than that of the year before, United States exports have been about twice as large, amounting to 3,200,000 bushels compared with 1,600,000 bushels in 1930, and Canada has shipped 8,900,000 bushels compared with 3,900,000 bushels the preceding season. United States exports of oats are very small relative to production, but the export market is of some significance, as net exports are fairly large relative to commercial supplies, net exports of the last 10 years having averaged 15,304,000 bushels or 8.5 per cent of receipts at 10 primary markets during the same period.

Prices of oats thus far during the current season have been the lowest in 30 years, despite the small supplies. The increased utilization of motor power in place of horses and mules during the last 15 years and the consequent reduction in the number of work stock have resulted in a decline in the demand of oats for feeding work stock. A larger proportion of the crop is now being fed to dairy cattle and meat animals. As a result, oat prices appear to be more dependent than formerly on the production of other feed grains and upon the market for dairy products and meat animals. Total supplies of feed grains, although about 3 per cent below the average of the last five years, are about 10 per cent above last year, and prices for both dairy products and meat animals are low. Feeding this year has been restricted by the open winter. Nevertheless oat stocks on farms as of January 1 were smaller than on the corresponding date of any year since 1927, being about 100,000,000 bushels less than a year ago.

Prices of oats this season as in other seasons have been affected by the geographical differences in production. Thus in Texas and Oklahoma, where acreages have been increased in the last two years good yields in 1931 resulted in a large crop and prices have been lower than usual compared with those in other States. Ordinarily farm prices of oats in both Texas and Oklahoma are well above the United States average and still further above prices in Indiana and Illinois. This year, however, they are below the United States average and about the same as prices in Indiana and Illinois. Prices in North Dakota and South Dakota, where the crop was greatly reduced by drought, are this year about the same as in Illinois and Indiana, whereas they are usually considerably lower.

A year of more normal weather conditions would result in a larger production of oats for the United States as a whole, as well as a larger production of other feed grains if the acreage of these crops is maintained at about present levels. Feed-grain consumption, however, is dependent upon livestock numbers as well as upon prices. Hog numbers have been increasing during the last year and are expected to remain at a higher level than that of the last two years for at least another year. Meanwhile dairy cattle and beef cattle numbers have been increasing.

Oats continue to be grown on a large proportion of the crop area, especially in the areas favorable for corn production. This is because of the satisfactory nature of the crop as a feed for productive livestock as well as work stock and because of its supplementary character in the cropping system. Oats fit well into a scheme of cropping built largely around corn. The two crops, together with forages, usually offer a desirable combination and despite apparent unsatisfactory market conditions, oats remain one of the major crops.

BARLEY

The present relatively strong market for barley in comparison with other feed grains results from an unusual distribution of the barley crop in 1931. In view of the relatively small supplies of barley compared with livestock numbers in the present deficit barley area centering about the Dakotas, it seems probable that this relatively favorable marketing situation for barley may continue at least until new-crop barley is available for feeding in the

northern portions of the barley-growing areas. After that time, the demand for barley will probably return to its normal relationship to other feed grains, unless there should be another short crop of barley or some unusual distribution in the production of feed grains in 1932. Exports of barley have been unusually small except for California malting types, and because of import restrictions in most European countries, will probably continue unimportant.

The 1931 barley crop of 198,965,000 bushels was only about two-thirds as large as the production in each of the two preceding years. The small crop resulted largely from low yields and abandonment of acreage in the Dakotas and Montana. Average yield per acre for the United States was only 17.3 bushels compared with 24.1 bushels in 1930 and 20.7 bushels in 1929. Acreage harvested was 11,471,000 acres, about 10 per cent less than in 1930 and 15 per cent less than in 1929, notwithstanding that the acreage seeded was about the same as in 1930. Adding the August 1 carry-over of old barley to the current production, the total supply of barley for the 1931-32 season was only 220,000,000 bushels, compared with 324,000,000 bushels in 1930-31, and 306,000,000 bushels in 1929-30.

The production of barley in the West North Central States in 1931 was only 109,557,000 bushels, as compared with 186,339,000 bushels in 1930, and 173,538,000 bushels in 1929. In the remainder of the country, production in 1931 was 89,408,000 bushels, compared with 118,262,000 bushels in 1930 and 106,704,000 bushels in 1929.

Total world barley production in the countries reported was about 15 per cent below that of 1930. The North American countries, which decreased their acreage considerably, had a production more than 173,000,000 bushels below that of the preceding year. The 1931 barley crop in Europe, although sown on a slightly larger area, was 8 per cent below the 1930 production in the same countries, and the smallest harvest since 1927. The outturn, exclusive of Russia, was 60,200,000 bushels below that of 1930. Production in Asia was 2,500,000 bushels below that of the previous year. The North African countries showed an increase of 9,000,000 bushels, and Argentina an increase of 4,800,000 bushels.

Barley stocks at the beginning of the present season were unusually heavy. United States stocks on August 1 of 21,342,000 bushels were the largest in recent years with the exception of the stocks of 25,874,000 bushels in 1929, and Canadian stocks on that date were nearly 29,500,000 bushels, compared with less than 23,000,000 bushels in 1930 and 11,000,000 bushels in 1929. On account of the heavy exports, however, Canadian stocks on January 1, 1932, were less than on January 1, 1931. In Germany, spring barley stocks on December 15 amounted to about 62,000,000 bushels, compared with 53,000,000 bushels a year earlier.

Since July 1, exports of barley from the principal exporting countries have fallen 38 per cent below the exports during the same period of 1930-1931. Shipments from the Danubian countries have been less than half as large, from the United States they have fallen off 45 per cent, and from Argentina, 27 per cent. Canada alone increased her barley exports during the six months ending December 31 from about 2,500,000 bushels in 1930 to 10,300,000 bushels in 1931.

During recent years the production of barley has expanded greatly coincidentally with the expansion of hog production west and north of the Corn Belt proper. In this area barley is a more certain crop than corn, but because of drought in 1931, the usual surplus for shipment has been replaced in many localities by a deficit. The demand for feed barley in contiguous markets has been sufficient to hold barley prices steady in the West North Central States, while prices of oats are lower by 20 per cent and corn prices are lower by 40 per cent compared with a year ago in the same States.

At the middle of January, 1932, feed grades of barley were selling at Minneapolis at 40 to 45 cents per bushel, compared with 35 to 40 cents a year ago, while malting quality was bringing 53 to 55 cents or practically the same prices as at the corresponding time last season. No. 3 barley was quoted at Milwaukee at the middle of January this season at 50 to 58 cents, compared with 42 to 60 cents a year ago, while the same grade was selling at Kansas City at 34 to 35 cents as against 44 to 45 cents in the middle of January, 1931. In California where the barley crop was unusually small, No. 1 feed barley was quoted delivered San Francisco at 55 cents per bushel, compared with 49 cents a year ago, and choice malting barley at 70 to 82 cents as against 60 to 65 cents last year.

At the beginning of 1932, all livestock on farms, except work stock, showed substantial increases over the number on hand January 1, 1931. These increases amounted to 2.4 per cent for cattle, 2.2 per cent for sheep and lambs, and 9.4 per cent for hogs. The December pig survey indicated that the fall pig crop was nearly one-fifth larger than that of a year earlier. Numbers of sheep and lambs on feed in the Corn Belt were estimated to be 24.1 per cent larger than those of a year earlier. Most of the increase in cattle and hog numbers in recent years has taken place in the West North Central States. Barley has become increasingly important as a feed grain in the Northwestern States of this group. Numbers of all livestock in the leading barley-producing States of the Middle West increased materially during 1931 despite the drought. The numbers of livestock were augmented in eastern Dakotas by shipments of large numbers of sheep and lambs from drought areas of Montana and the Pacific Northwest. All crops were curtailed somewhat in the principal barley-producing States, consequently the supplies of feed grains in these States are relatively small with barley supplies shortest of all in relation to normal needs for local feeding.

The unusual demand from the drought States, which normally ship considerable quantities of this crop continues to draw heavily upon the small supplies, and the carry-over of this crop on August 1, 1932, seems likely to be much smaller than for many years. Until the 1932 crop is available for feeding and shipment in the Dakotas and Minnesota, the present relatively good demand for barley may be expected to continue. Should average yields of barley be secured in 1932, in this area of present deficit, the unusual situation would disappear, and barley demand again be in a more normal relation to corn and oats.

Based on average yields and average farm prices, barley appears to be a more profitable crop than oats; however, throughout much of the area in which the two crops are grown, barley may not be interchangeable with oats in the cropping system because of greater susceptibility to disease or damage from poor drainage. During the period from 1924 to 1927 the average farm price of barley was relatively high as compared with oats. During this period there was a modest increase in the proportion of barley acreage to the oat acreage, even in those States in which the concentration of oats is high. But during the period from 1928 until 1930 the price advantage of barley declined and the expansion was continued only in those sections north and west of the principal corn and oats area and where conditions are favorable to barley production. The present advantage of price held by barley may again encourage barley production. However, the present price relations between wheat, barley, and flax are less favorable to barley as a cash crop for replacing wheat or flax. But where there is a shortage of grain feed, barley will furnish an earlier supply of feed than do other grain crops.

CORN

A moderate increase in corn acreage is to be expected in 1932 if favorable planting conditions prevail, especially in those areas in which prices for competing crops have been unusually low. If this increase occurs it will be the third successive increase in acreage. The prospective acreage is likely to be large enough so that if only average yields are obtained, corn production in 1932 would be larger than any year since 1923, and near to a record crop. This prospective larger supply may be offset to some extent by an increased demand for corn. The numbers of livestock on farms during the 1932-33 season will probably be somewhat larger than during the present season, as cattle numbers are on the increase and the spring pig crop is likely to be about the same as in 1931. If business conditions improve, some increase is also to be expected in the commercial consumption of the 1932 corn crop in the United States. Foreign demand is not expected to be an important factor in the corn situation during the 1932-33 season, unless production of feed crops in Europe in 1932 is materially less than average, as Argentine conditions for the 1931-32 crop are above average.

The domestic demand for corn so far in the 1931-32 season has been restricted by the large supplies in normally deficit-producing areas, the small quantity of corn used in manufacture, the low price of wheat, and the low purchasing power of farmers in those areas in which supplies are shortest. Up to January 1, 1932, only 30 per cent of the 1931 crop harvested for grain had been disposed

of compared with 36 per cent on January 1, 1931, and a 4-year average of 35 per cent.

The total supply of corn available at the beginning of the 1931-32 season (November 1) including carry-over, was estimated to be larger by about 520,000,000 bushels or 24 per cent than last year's short supplies, and about 1.5 per cent larger than in 1929, but was about 200,000,000 bushels below the 1925-1929 average supplies. The larger supplies of corn this year are offset to some extent by the smaller supplies of most other feed crops. The supply of oats at the beginning of the season (August 1) was 12 per cent smaller than last year and barley supplies were only two-thirds of a year ago. The crop of grain sorghums, however, was 21 per cent larger than last year and the largest since 1928. The total wheat crop was the largest since 1928 and the winter-wheat crop was the highest on record. Although the combined tonnage of corn, oats, barley, and grain sorghums is about 11 per cent larger than last year's supply it is only 93 per cent of the average supplies for 1925-1929. The large supply of winter wheat together with low prices and the shortage of corn early in the season has resulted in the continuation of heavy wheat feeding into the 1931-32 season in many areas. Supplies of hay for the 1931-32 season are slightly smaller than a year ago and materially below average. The principal shortage of hay is in the same areas in which other feed crops are short. The mild weather so far this winter has been even more favorable than a year ago for conserving feed crops as fall rains and mild weather kept pastures in good condition until late in November in many of the principal feeding areas, and temperatures in nearly all parts of the United States east of the Rocky Mountains, were materially above normal in December and the first half of January. Late fall rains in the far Western States and in the Cotton Belt have also benefited winter pasture conditions in these areas.

Although the supplies of corn at the beginning of the 1931-32 season were nearly one-fourth larger than for the 1930-31 season, supplies in the West North Central States and far Western States were smaller than a year ago. In the Corn Belt, as a whole, corn production in 1931 was 14 per cent greater than the unusually small crop of 1930. The drought in the western part of the Corn Belt reduced yields materially and production in the West North Central States was only 98 per cent of last year and 82 per cent of 1929. Production in the East North Central States in 1931 were drought reduced the crop in 1930, was 45 per cent greater than in 1930 and 18 per cent greater than in 1929. In the South Central States production was unusually large in 1931, being 79 per cent larger than in 1930 and 22 per cent larger than in 1929. The Eastern States also had larger than an average crop in 1931, production in the Northeastern States being 73 per cent larger than in 1930 and 30 per cent larger than in 1929, and in the South Atlantic States, 44 per cent larger than a year ago and 13 per cent larger than 1929. The greatest relative decline in production was in the far Western States where the 1931 crop was only 66 per cent of that of 1930 and 97 per cent of 1929.

The total quantity of corn harvested for grain which remained on farms January 1 was estimated to be larger by about 420,000,000 bushels or 38 per cent than a year ago and was 65,000,000 bushels or 4 per cent more than the average of the four years 1927 to 1930. Up to January 1, 1932, only 30 per cent of the total supply of corn harvested for grain in the 1931-32 season had been consumed or marketed, while on January 1, 1931, 36 per cent of the corn crop had been disposed of and the average for the four years 1927 to 1930 was 35 per cent. The location of supplies on January 1, 1932, was similar to that on January 1, 1927. Supplies in the East North Central States were about 75 per cent larger than a year ago, and the largest for any year since data on stocks were first collected in 1927. Supplies in the West North Central States were about equal to last year, and about the same as on January 1, 1927. In the North Atlantic States supplies were more than twice as large as a year ago, and only slightly below January 1, 1927 and in the South Atlantic States about 50 per cent larger than on January 1, 1931, and 10 per cent larger than on January 1, 1927. Supplies in the South Central States were 107 per cent larger than the small supplies of a year ago, but 10 per cent smaller than on the same date in 1927. In the far Western States, supplies on January 1 were only about 60 per cent of the unusually large supplies on January 1, 1931, but were larger than the average supplies for the years 1927 to 1930.

Corn prices declined sharply as the new crop became available for market and prices are now at about their normal relationship to those of other grains.

The lower prices for corn have resulted in unusually small country marketings. Receipts at the 13 principal markets during November and December of 22,983,000 bushels were only 51 per cent of last season's low receipts and only 42 per cent of the average receipts for November and December from 1925 to 1929. Commercial stocks of corn on January 1 were larger than a year ago, but below average. The large crop in the South and most other normally deficit areas has greatly reduced the shipments of corn into these areas.

Market prospects for corn this season are similar to those for the 1926-27 season except that the price level is materially lower. Both the quantity of corn still on farms on January 1, and the location of supplies are similar to that of January 1, 1927. The numbers of hogs on farms are about 10 per cent larger than in 1927, and cattle numbers are larger than in 1927. However, this is offset, to some extent, by the smaller numbers of horses and mules on farms and the lower level of commercial demand for corn this season. During the 1926-27 season, corn prices remained at approximately the January level until May. Owing to a cold wet spring in 1927, plantings were delayed and crop conditions remained below normal until September. As a result of these unfavorable conditions corn prices advanced sharply from May until August.

Foreign demand for corn so far this season has been negligible. Present prospects for the Argentine crop, which will be available for export about April 1, are much above the average. The acreage of corn in Argentina is reported to be slightly larger than a year ago and weather conditions so far in the growing season have been favorable for corn. With average weather conditions from now until harvest time, a record crop is in prospect.

In the Corn Belt proper, there will probably be some increase in the acreage devoted to feed grains, especially corn, in 1932. The wheat acreage has been reduced in most areas of the Corn Belt where corn and wheat are grown and the low condition of wheat on December 1 indicates that abandonment is likely to be materially larger than a year ago when it was much below average. There will also be a tendency to increase feed grains in the northwestern part of the Corn Belt where supplies are unusually short this year.

The low prices of cash crops in Southern States may mean an increased planting of corn in the Cotton Belt, particularly in those districts in which land is well suited for corn and yields are normally such as to make it more of a competing crop.

Although corn yields are primarily determined by weather during the growing season, the heavier-than-usual rainfall during the fall months of 1931 in the principal drought areas in the northwestern part of the Corn Belt, indicates that the drought has been definitely broken in this area. Corn yields for the United States, as a whole, have been below average for the last three years. This is as long as any period on record when yields have been below average. If more nearly normal weather conditions prevail in 1932, corn yields will be materially higher for the country as a whole than in the past two years. With the prospective larger acreage any increase in yield over the last two years will result in a crop somewhat larger than those of the last three years.

Present indications are that the number of hogs to be fed from the 1932 crop may not be materially different than the number being fed from the 1931 crop. The number of horses and mules on farms January 1, was less than a year ago, but cattle numbers were somewhat larger, and the number of sheep and lambs on farms is larger than last year. The present ratio of feed prices to livestock and livestock product prices is less favorable to feeding than a year ago, owing to a marked decline in prices of livestock and livestock products in the latter part of 1931 and early 1932, but they are still not unfavorable for feeding in most areas. The hog-corn ratio for the Corn Belt, on December 15, of 11, was only slightly below average and compares with 12.4 in December last year. The ratio of dairy-product prices to feed prices during January was less favorable than a year ago, but it is still favorable to normal feeding for dairy production and the ratio of steer prices to feed prices is not unfavorable at present.

Corn acreage in 1930 was nearly 3,000,000 acres larger than in 1929, and in 1931 was over 4,000,000 acres larger than in 1930. Since present prospects are for a still larger corn acreage in 1932, it is apparent that the downward trend in acreage since 1921 has at least temporarily ended. It is not to be expected that corn acreage, as a whole, will continue to increase indefinitely, as low yields during the last three years have tended to restrict corn supplies and resulted in larger acreages the following year. However, it is likely that corn acreage

will continue larger than the average for the last 10 years, at least, until returns from cash crops, such as cotton and wheat, again become high enough to encourage a substitution of these crops for corn in the competing areas.

HOGS

Slaughter supplies of hogs during the remainder of the present marketing year, which ends September 30, 1932, are expected to be considerably larger than the relatively small supplies of the corresponding period of 1931. No material improvement in the demand for hog products appears likely during this period, either at home or abroad. Present indications are that the 1932 spring-pig crop in this country will not be greatly different from that of 1931, but that the European hog production in 1932 for the 1933 market will show some decrease.

Hog production, after declining in 1929 and 1930, increased in 1931. The pig surveys of 1931 showed an increase of 9 per cent in the number of pigs saved in 1931 over 1930 for the whole country. For the North Central States, where the bulk of the commercial supply of hogs is raised, the increase was also 9 per cent. The largest relative increase was in the fall-pig crop, which the survey showed as 20 per cent larger in 1931 than in 1930 for the whole country and 21 per cent larger for the North Central States.

The increase in the number of pigs raised in 1931 was reflected in the number of hogs on farms January 1, 1932. The estimated number this year was 59,511,000 head, compared with 54,374,000 head January 1, 1931, and 55,301,000 head January 1, 1930. For the North Central (Corn Belt) States the number was 42,689,000 head this year, 39,839,000 head in 1931, and 39,992,000 in 1930. Although all divisions of States, and all but six States, had larger numbers this year than last, the largest relative increases were in the South and West. The percentage increases were 3 in the North Atlantic, 6.5 in South Atlantic, 10 in East North Central, 6 in West North Central, 22 in South Central, and 19 in the far Western States.

Federally inspected slaughter during October, November, and December, 1931 (the first three months of the marketing year which ends September 30, 1932), totaled 13,377,000, an increase of 1,200,000 head over the corresponding period in the 1930-31 year. The increase in the number of hogs on farms from January 1, 1931, to January 1, 1932, points to a federally inspected slaughter during the nine months, January to September, 1932 (the remainder of the present marketing year) of about 34,000,000 head, making a total of about 47,500,000 head for the entire year of 1931-32. The inspected slaughter for the marketing year 1930-31 was 43,559,000 head, with 31,396,000 head for the nine months, January to September, and in the year 1929-30 the total was 45,542,000 head, with 32,103,000 head in the nine months.

Other indications point to a slaughter for the 1931-32 marketing year somewhat larger than 47,500,000 head. If the slaughter for the three months, October to December, 1931, is about an average proportion of the total crop-year slaughter, the yearly total would be about 48,000,000 head. With available information showing that the increase in the fall-pig crop of 1931 was relatively much larger than the increase in the spring crop of that year, the indications are that the slaughter during the first three months of the marketing year may be less than the average proportion of the yearly total. In this event, the total would be more than 48,000,000 head. During the last 15 marketing years there have been only two years when the total for the first quarter (October-December) has indicated too large a yearly slaughter; in the other years it either indicated the approximate total or too small a total. The two years when the indicated slaughter proved to be larger than the actual slaughter were years following rather short corn crops and in which the supply of hogs to be fed out was relatively large.

During the last 20 years, the typical hog-production cycle, as indicated by slaughter, has consisted of two years of increased supplies followed by two years of decreased supplies. A similar pattern for the present cycle would indicate that slaughter in the marketing year 1932-33, (pigs raised in 1932) would be larger than that in the present marketing year. The December, 1931, pig survey showed breeding intentions for farrow in the spring of 1932 which, when adjusted for the usual spread between breeding intentions as reported in December and actual farrowings as reported the following June, indicate that the June survey in 1932 will show the number of sows farrowed in the spring of 1932 to be about 2 per cent larger than in the spring of 1931 for the entire

country. For the Corn Belt States, however, a decrease of about 5 per cent is indicated. All of the decrease in the Corn Belt is in the western part of that region and was due to the drought of 1931 in this area which greatly reduced the corn crop. If these States had shown increases in breeding for next spring about in the same proportion as the rest of the country, the indicated increase in the total 1932 spring pig crop would have been one of the largest ever known. The extent to which the very low level of hog prices this winter and the rather unfavorable feeding relation between corn and hogs is causing farmers to depart from their breeding intentions as reported in December is not certain, but it seems probable that they will not carry out their intentions so fully as they usually have. If this should be the case, the spring crop of 1932 may be no larger than that of 1931 and might be smaller, especially if weather during the farrowing season is unfavorable and the average number of pigs saved per litter should fall below the high average of 1931.

Storage stocks of pork products during the spring and early summer of 1931 were relatively large, being above both the 5-year average holdings for that time of year and the relatively small holdings of the same period in 1930. From August to November, there was a relatively heavy movement of pork into consumptive channels, and as a consequence the seasonal reduction in pork stocks was greater than usual. On December 1, 1931, such stocks were about 4 per cent smaller than those on that day a year earlier and 9 per cent smaller than the 5-year December 1 average. With the marked increase in hog slaughter in December, however, storage accumulations were unusually large. On January 1, 1932, total pork stocks, amounting to 559,000,000 pounds, were over 7 per cent larger than those on January 1 of the previous year, but they were not greatly different from the 5-year average for that date.

Lard stocks were maintained at a relatively low level throughout 1931, despite the increase in lard production during the last half of the year, as compared with the corresponding period a year earlier. Storage holdings of lard on January 1, 1932, amounting to 51,000,000 pounds, were not greatly different from the relatively small stocks on January 1, 1931, but they were 21 per cent smaller than the 5-year average January 1 holdings.

The decline in consumer demand for pork products which began early in 1930 continued throughout 1931. During the marketing year which ended September 30, 1931, per capita consumption of pork and lard from Federally inspected slaughter, amounting to 55.8 pounds was 3 per cent smaller than during 1929-30, and retail prices of pork products at New York averaged about 15 per cent lower. During the first three months of the current marketing year, 1931-32, per capita consumption of pork products was about 6 per cent larger than in those months of the previous year but retail prices of these products were 22 per cent lower.

Demand for pork products during the marketing year 1929-30, was considerably weaker than the unusually strong demand which prevailed during 1928-29, but was not greatly different from the 6-year average, 1922-23 to 1927-28. In 1930-31, this demand was further reduced, reaching the lowest level in many years, and there has been little change during the first quarter of the present marketing year. Domestic demand for pork during 1932 will depend in a large measure upon developments in the business situation, but in view of present prospects, no improvement of any consequence in this demand during the year seems probable. The recent increase in hog production in deficit hog producing areas, especially in the Cotton Belt, will probably result in greater local and farm slaughter, which will tend to reduce the demand for pork from commercial slaughter.

Total United States exports of all hog products during the 1930-31 marketing year were the smallest in more than 30 years. This reduction was due largely to a marked increase in hog production in European producing countries and to the reduction in purchasing power of European consumers. Pork exports during the 1930-31 year decreased 140,000,000 pounds, or 44 per cent, from those of a year earlier, and lard exports fell off 199,000,000 pounds, or about 26 per cent. Practically all importing countries took smaller quantities of American cured pork and nearly all countries except Great Britain purchased less American lard. The reduction in exports of pork products during the marketing year was about equal to the reduction in hog slaughter in the United States.

The declines in prices of pork and lard in European markets during 1931 were even greater than the sharp declines in the United States. From December, 1930, to December, 1931, price declines at Liverpool amounted to 61 per cent for American green bellies, 49 per cent for both Danish Wiltshire sides

and American short-cut green hams, and 37 per cent for lard. In New York, the composite wholesale price of pork declined 38 per cent during that period and lard prices declined 33 per cent. Immediately following the departure from the gold standard by Great Britain, prices of pork products in that country advanced, both in sterling and in gold. The advance was only temporary, however, and prices in gold were at new low levels during December. In sterling, lard prices were still somewhat above the low level reached during August, 1931, while prices of other pork products were at or near the lowest levels reached thus far in this depression. The abandonment of the gold standard by Denmark and Great Britain has intensified the competition from Denmark in the British pork trade.

Indications are for a continued low level of foreign demand for American products during the remainder of the hog-marketing year which ends September 30, 1932. Factors pointing in this direction are (1) continued large numbers of hogs in important European countries and the record supplies of pork and lard which are being produced in those countries, and (2) no indication of strengthened European buying power in the near future through improved industrial conditions.

Hog slaughter in both Germany and Denmark, the two principal hog-producing countries of Europe, reached record high levels in 1931 and hog numbers in those countries are still apparently above those of a year ago. On December 1, 1931, there were 23,800,000 hogs in Germany according to the quarterly census returns in that country. This number was slightly larger than the number reported a year earlier. There is some evidence, however, that the recent unfavorable relations between hog prices and feed prices in Germany are being reflected in reduced hog-breeding operations. The December 1 census returns in that country indicated that the number of sows to farrow was 15 per cent smaller than on December 1, 1930. This reduction in breeding operations probably will be reflected in slaughter supplies during the last quarter of 1932, but meanwhile German hog slaughter is expected to continue large.

Hog numbers in Denmark reached record high levels in 1931 but there are indications that breeding operations are being reduced. The reduction is not so marked, however, as it is in Germany. The Denmark census returns as of January 15, 1932, indicated that the number of sows to farrow was 8 per cent smaller than on that date a year earlier. Hog-feed price relationships have been very unfavorable for hog production during recent months, but the close relationship between hog breeding and dairying in Denmark causes feed prices to have less direct influence on hog breeding than elsewhere in Europe. Danish exports of pork to Great Britain, the leading export market for both Danish and American cured pork, were unusually large throughout 1931 and are continuing at record high levels.

A feature of the European cured-pork situation during 1930-31 was the large increase in British market receipts from continental countries other than Denmark. Netherlands, Sweden, Poland, and the Baltic States have been outstanding sources of pork, especially bacon. Most of those countries are not so well organized as is Denmark to maintain production in the face of increasingly unfavorable relationships between hog prices and feed prices, but they have contributed materially toward depressing British market prices during recent months.

The outlook for lard is no brighter than for cured pork, particularly on the Continent. During the 1930-31 year, Great Britain imported unusually large volumes of American lard at low prices, but during the first two months of the 1931-32 year, imports were smaller than those of the corresponding period a year earlier. On the Continent, the outlook is for continued large domestic supplies, both in Germany, the leading importing country, and in those countries taking smaller volumes of American lard. Danish lard has become a serious competitor during recent months, especially in Germany. The German-Danish exchange situation has encouraged this trade. With the maintenance of an attractive price and quality, such competition with American lard can be expected to continue as long as Danish production is at a level high enough to sustain exports. The lard markets also are meeting increasing competition from vegetable and whale oils.

Hog prices during the last two years have been severely affected by the world-wide business depression, the decline in the general price level, and increased European hog production. Despite a reduction in slaughter supplies, hog prices in 1930-31 averaged about 25 per cent lower than those of the previous marketing year. Prices usually reach the low point of the year be-

tween mid-November and mid-December, but in the year 1930-31, prices declined steadily from October, 1930, to February, 1931. After a temporary seasonal rise in March, the decline was resumed and was not checked until early June. The seasonal rise during June and July was small, and in early August, prices began another decline which continued with little interruption until mid-December. After a slight advance during the last half of December, prices declined again and during the week ended January 23, 1932, the average price at Chicago was \$3.93 per 100 pounds, which was the lowest weekly average for that market in more than 30 years and about half the average of the corresponding week in 1931.

The spread between the prices of lightweight and heavyweight hogs was about normal during the first half of the 1930-31 marketing year, but during the summer of 1931 it became unusually wide, reaching a maximum for the year in late July, when the average price of lightweight hogs was about \$1.50 higher than that of heavyweight hogs. This was in marked contrast to the average margin for that time of year of only 50 cents per 100 pounds. Since August, 1931, this price spread has been greatly reduced and it is now about normal for the season.

Notwithstanding the 3 per cent reduction in the total live weight of hogs slaughtered during 1930-31, the average price per 100 pounds paid by packers was only \$7.21 as compared with \$9.58 a year earlier and \$10.03 during the 1928-29 marketing year. This decline in both price and volume resulted in a reduction of \$273,000,000 in the gross return to producers for hogs slaughtered under Federal inspection from the returns in the previous marketing year and a reduction of \$400,000,000 from the returns during the year 1928-29.

Wholesale and retail prices of pork products also were much lower in 1931 than in 1930. Comparisons of the yearly averages of medium-weight hog prices at Chicago and pork prices at New York in the two years show that hog prices declined from \$9.85 to \$7.06 which represents a reduction of \$2.79 cents per 100 pounds; the wholesale value of the principal products (representing about 60 pounds or 75 per cent of the carcass weight obtained from 100 pounds of live hog) declined from \$11.90 to \$9.25, a reduction of \$2.65; and the retail value of the saleable products obtained from these wholesale cuts (52.64 pounds) dropped from \$14.13 to \$11.43, a decline of \$2.70. If the declines in the values of by-products and minor cuts were included, the reductions in the wholesale and retail values would be greater than the figures shown.

Hog numbers in the United States on January 1, 1931, were 13 per cent smaller than on that date in 1920, but the commercial supply in 1931 was 16 per cent larger than in 1920. This increase in commercial slaughter with a smaller number of hogs on farms January 1, was due, (1) to the marked reduction of hogs in the South from which area only a small proportion of the production goes into commercial slaughter, and (2) to a greater concentration of hogs in the western Corn Belt, which is the most important commercial hog-producing area, and where the ratio of hogs raised to numbers on farms January 1 is very large. The western Corn Belt now has more than half of the total hogs in the country, whereas in 1920 it had only 37 per cent of the total. With the great decline in the prices of such products as cotton and wheat and with farmers in all areas undertaking to get on a self-sustaining basis as regards food, there developed during last year a greater interest in hog production in the South and West and this is reflected in a marked expansion in hog numbers in those regions over the numbers of a year ago.

Although there are yet no definite indications that the total 1932 pig crop for the country as a whole will be larger than that of 1931, unfavorable factors confronting Corn Belt hog producers in the marketing year 1932-33 are (1) an expanded hog production in the South and West, (2) increased numbers of cattle on farms which fact points to a considerable increase in cattle slaughter in 1933, and (3) the prospects for continued large slaughter of sheep and lambs. Favorable factors in the situation are (1) indications of decreased hog production in the Corn Belt and (2) the prospect that European hog production in 1932 will be smaller than in 1931 which will probably result in a better outlet abroad for American hog products in 1933 unless consumer purchasing power in Europe is further reduced. Hog producers should keep in mind, however, that any reduction in European hog production during the next few years will not be sufficient to provide an outlet for American hog products equal to that of the average of the 10 years following the World War. During this 10-year period the average yearly exports of American hog products were

the equivalent of about 9,400,000 hogs, whereas the exports in 1931 were the equivalent of about 4,900,000 hogs.

BEEF CATTLE

Total cattle numbers on January 1, 1932, were larger than those of a year earlier, but the number of cattle on feed for market on that date was smaller. Total cattle slaughter during the first six months of 1932 will probably be about the same as that of the first half of 1931. Supplies of well-finished cattle, however, are expected to be smaller during that period, with most of the reduction probably occurring during the second quarter. The slaughter supply of cattle during the last half of the year will be determined largely by the trend of cattle prices during the first half of the year, and by feed and financial conditions in the important cattle-producing areas next fall. Although the number of cattle has increased steadily for four years with no increase in slaughter, present conditions indicate no large increase in slaughter during the last half of 1932 over that of a year earlier unless forced liquidation occurs or prices rise sufficiently to attract increased marketings of cows and heifers. Consumer demand for beef may improve somewhat before the end of 1932, but for the year as a whole, it probably will average lower than in 1931.

Present price relationships involving cattle, feed crops, and competing agricultural enterprises, and prospective trends in the production of other agricultural products indicate that cattle numbers, which have been increasing since 1923, will continue to increase for a few more years. During this period the expansion in numbers is expected to be reflected in an upward trend in cattle and calf slaughter.

CATTLE SUPPLIES

The number of cattle on farms increased again in 1931 for the fourth consecutive year, and on January 1, 1932, the estimated number was 62,407,000 head, an increase of 1,492,000 head or 2.4 per cent over January 1, 1931, and of 5,706,000 head or about 10 per cent over January 1, 1928, the recent low point in numbers. This increase in the four years from 1928 to 1932 compares with the increase of 11,372,000 head between 1912 and 1916, which was the similar period in the previous cattle cycle.

As was the case in the preceding three years, the largest increase in cattle numbers in 1931 was in cows and heifers 2 years old and over, the largest increases being in milk cows. There was also a large increase in calves, but a decrease in steers and in yearling heifers kept for milk cows.

The number of all cows and heifers 2 years old and over on January 1, 1932, was 34,032,000 head. The increase in numbers of these since 1928 was 3,126,000 head, which is 55 per cent of the increase in numbers of all cattle. On January 1, 1920, there were 32,320,000 head of cows according to the 1920 census report, and this number was about 5 per cent smaller than the estimated number of such cattle on farms on January 1, 1932. The number of all cattle on January 1, 1920, as shown by the census, however, was 66,652,000 head, which was 6.5 per cent larger than the estimated total at the present time. This comparison shows the great change that has taken place in the make-up of the national cattle herd during the last 12 years.

This larger number and proportion of cows means that cattle production in terms of total tonnage of beef and veal can be increased or decreased more rapidly than was possible in earlier years. This greater ability to readjust numbers comes from the fact that the calf crop at present is about as large as was ever produced; with this large number of calves a considerable change in the proportion vealed from year to year will result in a material increase or decrease in the total number of cattle.

Although the number of cattle available for slaughter during 1931 was larger than a year earlier, there was no increase in Federally inspected cattle slaughter. The inspected slaughter in 1931, amounting to 8,108,000 head, was 62,500 head smaller than in 1930, but the decrease was probably offset by an increase in farm and other local slaughter of cattle. Federally inspected calf slaughter of 4,716,000 head was 121,000 head larger than in 1930 and without doubt there was a considerable increase in farm and other local slaughter of calves. The number of cows and heifers slaughtered under Federal inspection was 243,000 head smaller in 1931 than in 1930, whereas the slaughter of steers was 205,000 head larger.

Although the number of cattle available for slaughter in 1932 is larger than the supply of a year ago, any increase in slaughter which occurs this year will have to be largely of cows and heifers, since the supply of steers is smaller. With the increased number of cows and heifers on farms compared with a year ago, it is expected that the production of calves in 1932 will be larger than that of 1931.

The estimated number of cattle on feed for market as of January 1, 1932, in the Corn Belt States was about 5 per cent smaller than a year earlier. There was an increase of 8 per cent in the five States east of the Mississippi River, which was more than offset by a decrease of 18 per cent in South Dakota, Nebraska, and Kansas. Numbers on feed in Iowa, Missouri, and Minnesota combined, were about equal to those of a year earlier. There was a decrease of 17 per cent in cattle on feed in the western Mountain States, but a considerable increase in feeding in Texas.

The market supply of slaughter cattle during the first half of 1932 will probably be about the same as in 1931. The supply of well-finished steers, however, is likely to be smaller, with most of the reduction probably occurring during the second quarter. The supply of cows during these months will depend largely upon developments in the dairy industry, but it hardly seems likely that it will be greatly different from that of 1931. The supply of slaughter cattle during the last six months of 1932 will be determined largely by the trend of cattle prices during the first half of the year and by feed and financial conditions in the important cattle-producing areas next fall, since these factors will influence both dairy and beef cattle producers in making their plans relative to expanding or contracting production. The number of cattle from which slaughter supplies could be drawn will be larger than in the previous year, but no large increase in slaughter over that of a year earlier now appears likely unless forced liquidation occurs or prices rise sufficiently to attract increased marketings of cows and heifers.

FOREIGN SUPPLIES

Cattle imports into the United States totaled 88,000 head for the first 11 months of 1931, compared with 232,000 during the corresponding period of 1930. Of the 1931 total, 64,000 came from Mexico and 24,000 from Canada. Canadian export records indicate that for the first 11 months of 1931, 53,000 head of cattle and calves were exported, of which 23,000 head went to the United States and 26,000 were sent to the United Kingdom. In the corresponding 1930 period, 61,000 head were exported from Canada, with 54,000 head coming to this country and only 4,000 head going to British markets. Canadian cattle numbers in June, 1930, totaled 8,937,000 head. This was the largest number since 1927, when the total was 9,172,000 head.

Records of the Bureau of Animal Industry show that, from January 1 to November 30, 1931, supplies of canned beef inspected for entry into the United States amounting to 16,272,000 pounds were about 65 per cent smaller than those of the first 11 months of 1930.

Total imports of fresh and frozen beef into the United States during the first 11 months of 1931, amounting to 1,769,000 pounds, were slightly less than one-fifth as large as the 9,266,000 pounds imported during the corresponding period in 1930. In 1928, the 12-month total of such imports, amounting to 58,320,000 pounds, was the largest on record. Of that quantity, 30,367,000 pounds came from New Zealand and 25,255,000 pounds from Canada. Those two countries are still the principal sources of fresh and frozen beef imported into the United States, but the volume of such imports from them in 1931 was less than one-third of that in 1930.

DEMAND

Lower consumer incomes resulted in a reduction in the demand for beef during 1931. Per capita consumption of Federally inspected beef and veal during 1931, amounting to about 39 pounds, was about the same as that of 1930. Prices of cattle and beef, however, were materially lower and purchasing power of these was also lower. Demand for beef during 1932 depends largely upon the trend of business conditions during the year. The prospect of a continued low level of consumer incomes during the first half of 1932, the tendency for changes in the demand for beef to occur somewhat later than changes in business activity, and the prospective increases in supplies of competing meats, all

indicate that any improvement in this demand during the year will be only moderate and that for the year as a whole the demand will average below that of 1931.

Demand for feeder cattle in 1931 was below that of 1930, owing to the lower level of prices for finished steers, unprofitable returns from cattle feeding during the last two years, and credit difficulties encountered by feeders. Inspected shipments of stocker and feeder cattle and calves from public stockyards during the first six months of the year were about 18 per cent smaller than those of the corresponding period in 1930. During the second half of the year they were about 4 per cent smaller and the spread between prices of feeder cattle and the prices of the better grades of slaughter cattle was unusually wide. The stocker and feeder cattle movement from four leading markets, classified by kinds of cattle and weight of steers shipped to the country, indicates that, during the last half of 1931, shipments of calves constituted a larger proportion of the total movement than during the last half of 1930 when they also were large. The proportion of steers weighing under 800 pounds was a little larger, but the proportion of those weighing over 800 pounds and the proportion of cows and heifers were smaller. The geographical distribution of the stocker and feeder movement in the Corn Belt reflected the distribution of feed supplies in that area. In the eastern Corn Belt, where the corn supply is relatively large, feeder shipments were considerably larger than last year; whereas, in the western Corn Belt, where corn production in 1931 was smaller than in 1930, feeder shipments were reduced. The low prices of corn and other feeds and the unusually low prices paid for feeder cattle during recent months are favorable factors in the 1931-32 feeding situation, and the demand for feeder cattle in 1932 is likely to be somewhat stronger than the unusually weak demand during 1931, especially if feed prices continue relatively low.

Although cattle slaughter during 1930 and 1931 was small, the business depression and the decline in the general price level resulted in a sharp decline in cattle prices during both years. A pronounced weakness in cattle prices developed early in 1930 which continued until mid-August of that year. Some recovery occurred in the autumn and early winter, but by mid-January, 1931, another sharp decline got under way. Prices of the better grades of slaughter cattle reached their lowest point during the last week in May, 1931, at which time they were less than half those of the corresponding period in 1929. Following this low point, they advanced sharply during the late summer and fall in response to reduced market supplies of such cattle. The autumn peak in prices of Good grade beef steers was reached in early November, but prices of Choice grade steers continued to advance until early December. Prices of the lower grades of slaughter cattle and of stockers and feeders continued their downward trend throughout 1931, and in mid-December, when the low point of the year was reached, they were at the lowest levels in more than 20 years.

The decline in monthly average prices of beef steers at Chicago from December, 1930, to December, 1931, amounted to \$1.95 per 100 pounds for Choice and Prime grades, \$2.39 for Good grade, \$2.95 for Medium grade, and \$3.05 for Common grade. During the same period, stocker and feeder prices declined \$2.65. The average price spread between Common and Choice grade steers during December, 1931, was \$6.53, compared with \$5.43 in December, 1930, and was one of the widest spreads on record. The top price of cattle at Chicago during December of \$12.85 was more than twice that of either hogs or lambs. This price relationship is unprecedented in the history of the livestock industry.

The average price of slaughter cattle during 1931 was \$6.23 per 100 pounds, compared with \$8.54 in 1930 and \$10.59 in 1929. The average price of slaughter calves was \$7.10 per 100 pounds in 1931, \$9.67 in 1930, and \$12.59 in 1929. These low prices of cattle in 1931 were reflected in the decreased inventory values of cattle on farms on January 1, 1932. The value per head of all cattle and calves on that date was \$26.64 compared with \$39.31 a year earlier and \$56.69 two years earlier. In spite of an increase in numbers in 1931 of about 1,500,000 head, the total value decreased \$730,000,000.

Wholesale and retail beef prices, as well as cattle prices, were considerably lower in 1931 than in 1930. Comparisons of the yearly averages of Good grade steer prices at Chicago and of Good grade beef prices at New York for the two years show that the reduction amounted to \$3.02 per 100 pounds in the price of steers, \$2.41 in the wholesale value of the beef obtained from each 100 pounds of the live animal (58 pounds), and \$4.50 in the retail value of the saleable cuts

obtained therefrom (46.25 pounds). In comparing the declines in cattle prices with those of wholesale beef values consideration should also be given to the material decline in the values of hides and other by-products.

LONG-TIME PRODUCTION TRENDS

Since 1880, cattle production has gone through three complete cycles with rather significant regularity. Those periods of increasing and decreasing numbers were from 1880 to 1896, 1896 to 1912, and 1912 to 1928. Since 1928, an upward trend of another cycle in cattle production has been under way. How long this upward trend will continue and what the future rate of increase in numbers will be, depends (1) upon conditions affecting the potential capacity and present incentives for expansion, and (2) upon conditions outside the industry affecting the demand for beef.

In appraising the potential capacity for expansion in cattle numbers, conditions must be considered on a regional basis. In the western range States there is very little opportunity for further expansion in numbers unless there is a material reduction in the number of sheep. Possibly a reduction in the wheat acreage of the dry-farming areas and of cotton acreage in Texas and Oklahoma will induce farmers in the southwestern areas to produce more feed and forage crops and devote more attention to cattle raising. This, however, is not expected to be a very large factor in the increase of cattle numbers in the near future. It is more likely that sheep numbers will be reduced in some sections of the West and thus afford an opportunity for at least a limited expansion in cattle production. It should be kept in mind, however, that not more than 20 per cent of all the cattle in the United States are in the States in which sheep production is a factor limiting cattle production.

The major proportion of cattle in the country is produced in the Central West, particularly in the Corn Belt. An increased production of pasture and hay in the more hilly areas and a greater use of leguminous crops for soil-building purposes in the better areas, could increase materially the grazing resources in the Corn Belt States and adjacent territory without affecting appreciably the supply of feed grains. There is some evidence that these shifts are now under way. The supply of concentrate feeds for use in beef production also may be increased during the next few years through an expansion of corn acreage, particularly outside the Corn Belt, and a further reduction in work stock.

No material change in cattle numbers is likely to occur in the New England States and the Appalachian region during the next few years. In the New England States, where most of the cattle produced are dairy stock, some reduction may occur in 1932 as a result of the unfavorable relationship between fluid milk prices and feed prices, but such a reduction would probably prove to be both moderate and temporary. Cattle producers in the Appalachian region are confronted with certain local conditions which prevent them from making material shifts in cattle production. The mountainous sections are best suited for grazing, but the grazing resources are not great enough to permit an expansion that would appreciably affect the national cattle supply. Cattle production in other parts of the Appalachian region are closely related to the farming system, which involves the production of certain specialized crops particularly adapted to those sections.

Cattle numbers in the South declined relatively more from the peak of the previous cycle to the last low point than did numbers for the country as a whole, but the increase in that region during the last three years has been relatively greater. Most of the increase in the South, however, has been in milk stock. Although tick eradication in the South has made possible the introduction of beef cattle of higher quality into that region, credit difficulties and limited pasture and forage supplies tend to restrict the production of such cattle. Production of low-grade stock and of dairy cattle, however, is likely to increase moderately during the next few years.

Although cattle prices are far below the 1925-1929 average, the decline in feed prices and in prices of other commodities, the production of which can be substituted for cattle production, has been even greater. Consequently, there is little incentive at present for reducing cattle production, despite the sharp decline in cattle prices.

On the other hand, there appears to be little in the immediate demand situation to stimulate further expansion. Consumer demand for beef is greatly restricted as a result of the severe depression. From the long-time point of

view, this demand will strengthen when the eventual improvement in business increases consumer purchasing power. Some growth in demand will come from the normal increase in population which has been at the rate of about 1,000,000 annually during the last 10 years. Increased demand as a result of population growth, however, will be relatively small and very gradual, and may tend to slow up in the future because the increase in population in the last decade has been at a declining rate. Any material reduction in wholesale and retail distribution costs may be expected to increase the proportion of the consumer's expenditure for beef that goes to the cattle producer.

In view of the present price relationships involving cattle, feed crops, and competing agricultural enterprises and the agricultural readjustments which are apparently under way in the Corn Belt States, the upward trend in cattle numbers will probably continue during the next few years, in spite of the present low level of cattle prices and the present limited demand for beef. With sufficient incentives for expansion, production would probably increase at a more rapid rate than it has during the last four years, since numbers of breeding stock are relatively large, but conditions which would encourage production to this extent are as yet not in evidence.

SHEEP AND WOOL

Sheep numbers in the United States made a further increase in 1931, and the number of lambs on feed at the beginning of 1932 was the largest ever reported as of that date. Reduced consumer purchasing power has resulted in a considerable reduction in the demand for lamb but the decline has not been so great as that for other meats. Improvement in demand will depend largely on improvement in business conditions but it is probable that lamb will meet increased competition from larger supplies of other meats. Indications are beginning to appear that the down swing in the sheep-production cycle may get under way in 1932 and that numbers of breeding stock will show some reduction by 1933.

Continued high world-wool production in the face of reduced consumer demand and falling general commodity price levels resulted in an almost continuous decline in wool prices from 1928 to the beginning of 1932. Recoveries in prices and trade abroad have been short lived. Toward the end of 1931, activity in the wool-textile industries increased in a few foreign countries, but prices were barely steady and indications were that sales of goods were generally low. In the United States, wool consumption rose to a high level in the spring and summer of 1931, but failed to maintain the improvement after September. The prospective demand for wool both in this country and abroad depends principally upon the trends of industrial employment and consumer incomes.

World-wool production has continued at the peak of the cycle for an unusually long period. Exceptionally favorable weather and feed conditions and the limited alternatives open to sheep and wool growers undoubtedly contributed to the maintenance of high production despite falling prices. Depreciated currencies, especially in Argentina and Australia, may have alleviated to some extent the influence of low prices. Nevertheless the low incomes from sheep and wool can be expected to favor liquidation and to check expenditures. In the important wool-producing countries of the Southern Hemisphere, the decrease in wool production from these factors alone may be slow unless unfavorable climatic or feed conditions develop. In the United States, a reduction in sheep numbers is more likely, because of the unfavorable weather and feed conditions in some of the range States. Import requirements of the United States are now small. Therefore a material further increase in domestic wool production unless accompanied by high rates of consumption would so reduce import requirements as to limit the effectiveness of the tariff. But a moderate decrease in domestic production would tend to maintain the margin of domestic over foreign prices.

SHEEP AND LAMBS

Sheep numbers increased again in 1931 and on January 1, 1932, the total number of sheep and lambs on farms and ranges and in feed lots was 53,912,000 head. This was an increase of about 1,200,000 head or 2 per cent over January 1, 1931, and of 17,217,000 head or 47 per cent over January 1, 1923, which was the low point from which numbers have risen without intermission until they now are the largest on record in this country.

Both stock sheep, and sheep and lambs on feed for market, were in larger numbers on January 1 this year than last. The increase in stock sheep was mostly in ewes 1 year old and over and the proportion of old ewes—over 6 years of age—was relatively large. In the Western States, reports from owners of 4,000,000 head of stock sheep, which is equal to 11 per cent of such sheep in those States, showed that old ewes made up 15.6 per cent of the total ewes 1 year old and over on January 1, 1932, and similar reports for two preceding years showed 13.9 for January 1, 1931, and 10.9 January 1, 1930. Comparison of reports from the same outfits made as of January 1, 1932, and January 1, 1931, showed that there was an increase of 8 per cent in old ewes, an increase of 5 per cent in ewes 2 to 5 years old, a decrease of 6 per cent in yearling ewes, and a decrease of 20 per cent in ewe lambs being kept for breeding ewes. It is thought that the changes as shown by these reports are fairly typical of the sheep industry in the Western States.

The lamb crop of 1931 was estimated by the Department of Agriculture in July as 31,684,000 head, an increase of 8 per cent over the 1930 crop and the largest lamb crop ever saved in this country. Inspected slaughter of sheep and lambs for the first eight months, May to December, of the present lamb-marketing year was 12,606,000 head, or 9 per cent larger than for the corresponding period in 1930. The increase this year was all in lambs (including yearlings) since the slaughter of sheep was actually smaller this year than the small slaughter of last year. This relatively small slaughter of sheep was due to the very low prices prevailing for slaughter ewes. During most of this period the price was so low that returns to the shippers were little more than expenses of shipment from sections where the distance from market made these expenses relatively large.

Slaughter supplies during the last four months of the present lamb-marketing year, January to April, are indicated to be larger than a year ago. The estimated number of sheep and lambs on feed for market in the Corn Belt and Western States was 6,186,000 head, compared with 5,428,000 head January 1, 1931, and 5,886,000 head January 1, 1930. This number establishes a new record for lamb-feeding operations in this country. Numbers on feed this year were larger in both the 11 Corn-Belt States and in the Western States. In the Corn-Belt States there were increases over last year in every State but one. In the Western States there were rather large increases in North Dakota, Texas, New Mexico, and Oregon, with small increases in Colorado and Washington, and decreases in all the other States, the decrease in Utah being the most marked.

Feed conditions and feed prospects in the main sheep area of Texas are very good. This points to a large movement of grass-fat yearlings and wethers out of this State similar to that in 1931. In addition, there was a considerable increase in the number of lambs dropped in Texas during November and December of 1931, which may be reflected in a heavy movement of early lambs from that State in March and April.

Weather conditions in the early lambing sections of California in November and December, 1931, were rather unfavorable and old feed was short and new grass was late in starting; breeding ewes were below average in condition and losses of old ewes were rather large. As a result of the heavy precipitation in December and early January, prospects for green feed are much better than at this time during the last several years; with seasonal warm weather, abundant feed will result. The early lamb crop is probably somewhat smaller than last year but if feed conditions are better than last year, as now seems likely, much improvement in the finish of the lambs over last year is to be expected.

Lamb supplies during the marketing year of 1932-33 beginning May 1, will depend largely upon weather conditions during this winter and the early spring. With favorable feed conditions general in most areas east of the Missouri River, there is no reason to expect that the native lamb crop of 1932 will be smaller than that of 1931. In the Western States, however, conditions are not favorable for a larger lamb crop. The condition of sheep at the beginning of the winter was the poorest in years; because of last year's drought, winter range condition was low and supplies of locally produced hay and other feeds were inadequate for an average winter and very short for a hard winter. In general, the winter to date has been rather severe in the area west of the Continental Divide, but east of the divide and in Texas it has been relatively mild.

Breeding ewes, except in Texas, New Mexico, and Arizona, will probably be in rather poor shape at lambing time and winter losses will be above average and may be very heavy. Under present financial conditions in the industry, the tendency will be to restrict expenditures for feed and care at lambing. These conditions point to a ratio of lambs marked per 100 ewes below that of last year, and this reduction in percentage, together with heavier death losses of ewes, may result in a lamb crop no larger and perhaps even smaller than in 1931.

With consumer incomes during 1931 much smaller than during 1930, the demand for lamb and mutton was reduced, and the increased market supplies were moved into consumption only at greatly reduced prices. Per capita consumption of federally inspected lamb and mutton during 1931, amounting to 5.6 pounds, was 5 per cent larger than in 1930, but retail prices of lamb at New York declined 16 per cent. This reduction in demand was not so marked, however, as the reduction in demand for beef and pork. Per capita consumption of both beef and pork in 1931 was practically unchanged from that of 1930, but retail prices of beef decreased 15 per cent and those of pork 21 per cent. Improvement in consumer demand will depend largely on improvement in business conditions, but it is probable that lamb will meet increased competition from larger supplies of other meats during 1932.

Sheep and lamb prices were maintained at a relatively high level during the five years from 1924 to 1928, although market supplies were gradually increasing. In April, 1929, however, a sharp downward trend got under way which was not checked until October, 1930. Prices were fairly stable during the last three months of 1930 and advanced moderately during the first four months of 1931, but after the middle of May the trend of prices was downward until early December. The average price of lambs at Chicago in December, 1931, of \$5.64 per 100 pounds was the lowest monthly average since November, 1911. The average price of sheep and lamb slaughtered during the fed-lamb marketing season, December, 1930, to April, 1931, was \$8.05 per 100 pounds as compared with \$10.56 paid in the same months a year earlier. The average price paid for sheep and lambs slaughtered during the marketing season for the 1931 crop of grass lambs, May to November, 1931, was \$6.63 per 100 pounds compared with \$8.43 in the corresponding period of 1930. The price of Good and Choice feeder lambs at Chicago averaged \$5.12 during the last half of 1931, and \$7.07 during the last half of 1930. The estimated average value per head of sheep and lambs on farms on January 1, 1932, was only \$3.40 compared with \$5.35 a year earlier and \$8.92 on January 1, 1930. It was the lowest average value since 1905. In spite of an increase in numbers during 1931, the total estimated value of all sheep and lambs on farms on January 1, 1932, was \$99,100,000 less than the total value a year earlier.

Wholesale and retail prices of dressed lamb were also much lower in 1931 than in 1930. Comparisons of the yearly averages of good grade live lamb prices at Chicago and wholesale and retail prices of good grade lamb at New York for the two years, show that the reductions amounted to \$2.15 per 100 pounds in the price of live lambs, \$1.86 in the wholesale value of the dressed lamb obtained from each 100 pounds of the live animal (48 pounds), and \$2.43 in the retail value of the salable cuts obtained therefrom (46.8 pounds). In comparing the declines in live lamb prices with those of wholesale dressed lamb values, consideration should also be given to the decline in values of lamb by-products (pelts, fats, casings, etc.).

WOOL

World wool production, exclusive of Russia and China, which was estimated to be 3,210,000,000 pounds in 1928 and 3,186,000,000 pounds in 1929, reached a total of 3,212,000,000 pounds in 1930. A high figure is also indicated for 1931, as there has been an estimated increase of 4 per cent in the combined clips of 10 countries, Australia, New Zealand, Argentina, Uruguay, Union of South Africa, United States, United Kingdom, Germany, Hungary, and Rumania, which usually produce about four-fifths of the world's total. The larger clips in the United States, Australia, and the Union of South Africa have contributed most of the increase. Reduced clips have been reported for Argentina, Uruguay, and New Zealand.

The increases in 1931 production appear to result more from a heavy carry-over of old sheep than to a deliberate effort to increase wool production.

Low mutton prices in some countries made it unprofitable in many cases to send the old sheep to slaughter. In the United States many old sheep which might not have withstood rigorous or even normal weather conditions survived as a result of the very mild winter of 1930-31. In countries of the Southern Hemisphere conditions lately have been favorable, no severe droughts prevailing since the latter part of 1929 and early 1930. Although slaughter, especially of lambs, has been fairly heavy in some Southern Hemisphere countries, it has not been great enough to offset the large lamb crops and the increased carry-over of old sheep.

World total sheep numbers have been at a high level for several years, averaging 748,000,000 for the years 1928-1930, compared with 648,000,000 for the years 1921-1925, and 693,000,000 in 1909-1913. Numbers in 13 important countries show an increase of 2 per cent in 1931 compared with 1930. However, the increase between 1930 and 1931 was less than the increase between the years 1929 and 1930. In Australia, sheep numbers on January 1, 1931, were the largest on record and the 1931 lamb crop was reported to have been large. Sheep numbers increased in 1930 and 1931 in the United States, Union of South Africa, and the United Kingdom, but in New Zealand a decrease is reported for 1931.

Wool production in the United States has been increasing since 1922, and in 1930 amounted to 343,000,000 pounds of shorn wool and 63,000,000 pounds of pulled wool. Production in 1931 amounted to 369,000,000 pounds of shorn wool, and 66,000,000 pounds of pulled wool.

The Australian clip, after declining from 968,000,000 pounds in 1928 to 890,000,000 pounds in 1930 as a result of a drought in New South Wales, increased 8 per cent, or to approximately 950,000,000 pounds in 1931, following a period of unusually favorable weather and feed conditions. The New Zealand clip, however, showed a decrease in 1931 of approximately 4 per cent, the first decrease recorded there for several years.

The 1931-32 clip in the Union of South Africa is large, being estimated at 335,000,000 pounds, an increase of 9 per cent over 1930-31. The clip of that country has increased steadily from 176,000,000 pounds reported for 1924-25 to 307,000,000 pounds in 1929-30. Last season the anticipated increase in the clip was prevented by a policy of refraining from shearing six-months wool. This, together with an expansion in sheep numbers, has resulted in the increased clip for the 1931-32 season.

The Argentine clip is now estimated to be 333,000,000 pounds for 1931-32, a decrease of 5 per cent compared with 1930-31. In 1929-30 it was only 320,000,000 pounds, owing to drought, whereas the average for the three preceding years was 353,000,000 pounds. The Uruguayan clip, it is reported, will show a reduction, from last season's large production of 154,000,000 pounds because of the mortality among last season's lambs.

A comparison of statistics on production, imports, and reported consumption indicates that the supply of combing and clothing wool in the United States on January 1, 1932, was smaller than on the same date last year. Production of shorn wool in the United States in 1931 was estimated to be 18,000,000 pounds larger than in 1930 and pulled-wool production was 4,000,000 pounds larger. In the nine months, April to December 1931, however, imports of combing and clothing wool were 17,000,000 pounds less than in the corresponding period of 1930, whereas consumption of combing and clothing wool by manufacturers reporting to the Bureau of the Census was about 70,000,000 pounds (grease equivalent) greater.

Stocks of wool in countries of the Southern Hemisphere were fairly heavy at the beginning of the 1931-32 selling season, and have continued to accumulate during the last few months.

Stocks of wool in the United Kingdom are unusually large. Unemployment figures for the British wool-textile industry indicate a considerable decline in activity during the last two years which was not halted until October, 1931. The abandonment of the gold standard in that country was followed by a sharp increase in activity in the wool industry but the improvement appears to have been confined largely to the sections manufacturing for home trade. Exports of woollen and worsted piece goods during 1931 were 24 per cent less than in 1930 and 45 per cent less than in 1929.

Stocks of wool in the important wool-manufacturing countries of continental Europe are probably not excessive. Apparently consumption in these countries has been reduced, but imports have also been low. Comparing imports for the first 10 months of 1931 with the corresponding months of 1930, the declines

amounted to 19 per cent for France, 2 per cent for Germany, 17 per cent for Belgium, and 13 per cent for Italy.

The increased takings of wool by Japan have partially relieved the situation caused by continued high world wool production and decreasing mill consumption in other countries.

The steady improvement in mill consumption of wool in the United States which began in December, 1930, continued practically without interruption through July, 1931, and was only slightly checked in August and September despite the declines which occurred in general business activity during that period. In October, however, unsettled labor conditions and slow piece-goods markets resulted in larger declines in consumption which continued through the rest of the year. In most months of 1931, reported consumption was well above that for the corresponding months of 1930, and in July, 1931, it was the greatest reported for any month since May, 1923. Consumption of combing and clothing wool by reporting mills in the United States from January through November, 1931, totaled 384,000,000 pounds (grease equivalent) compared with 316,000,000 pounds in the first 11 months of 1930, and 395,000,000 pounds in that period of 1929.

Consumption of domestic wool during the 11-month period of 1931 exceeded by 38 per cent that reported for the same period of 1930, and by 13 per cent that for 1929, although the reported consumption of both domestic and foreign wools of this type in 1931 was only 23 per cent greater than in 1930 and was smaller than the total reported for 1929. During the last two years fine and half-blood wools have constituted an increasing percentage of the total consumption of combing and clothing wools while the lower grades have constituted a decreasing proportion of the total consumption.

The increase in the total quantity of wool consumed in 1931 may be attributed partly to a revived popularity of wool dress goods and to low prices, but the increase is in keeping with a tendency for wool consumption to recover from a depression sooner than general industrial production. Through the summer and early fall, wool consumption continued at a high level despite further declines in industrial activity. The slackening in the rate of consumption in late fall suggests the difficulties encountered in maintaining sales as wages and activity in industry generally continue to decline. The changes in proportions of the various grades entering into consumption may be attributed in part to style changes, but the relative prices and supplies of the different grades constituted important contributing factors.

Imports of combing and clothing wool into the United States in 1931 were the smallest for the last 30 years. Only 36,000,000 pounds of combing and clothing wool were imported during 1931 compared with 69,000,000 pounds in 1930, and 102,000,000 pounds in 1929. The average annual imports for the years 1928-1930, inclusive, were 113,000,000 pounds. Low imports resulting in relatively small supplies of foreign wools explain the decrease in the proportions of foreign wools entering into domestic consumption.

The increasing wool producing within the United States since 1922 has reduced the import requirements for combing and clothing wool. The lessened dependence on foreign supplies is indicated by the fact that the percentage of domestic wool in reported United States consumption rose from 49 per cent in 1923, to 79 per cent in 1929 and to 89 per cent in 1931. As domestic consumption increased during 1931, stocks were reduced, but so far it has not been necessary to increase imports. The extent to which imports are necessary in the next few years will depend upon the extent to which the improvement in consumption can be maintained or further increased, and whether domestic wool production continues upward or declines. The dependence upon foreign wool for a significant part of our domestic requirements determines the strength of prices in the United States relative to those in foreign countries.

The trend in wool prices has been downward since 1928. At their low point in June, 1931, domestic prices of 56s (three-eighths blood) wool at Boston were 57 per cent below the high point of June, 1928. From June to September prices recovered slightly, but in October they lost most of the gain and since then have been quite steady. The index of prices paid to farmers in December was 72 per cent of the 1910-1914 average, whereas in December, 1930, it was 3 per cent above the pre-war base.

Prices in foreign markets declined somewhat more sharply than those in the United States until the latter part of 1929. Since early 1930, prices abroad have fluctuated considerably as periods of temporary recovery have given way to further declines, but the trend has been gradually downward. After

the suspension of the gold standard in Great Britain prices at the London wool sales in terms of British currency improved, but the rise was not sufficient to offset the decline in the exchange rate. In November, wool prices at London averaged 62 per cent of their July, 1914, level when stated in currency or 47 per cent when stated in terms of gold. From the high point of 1928 to the low point of 1931 the decline in prices of 56s wool at London has amounted to 74 per cent.

The margin of domestic over foreign prices has tended to narrow since the latter part of 1929. The sharp declines and partial recoveries in prices abroad have not been entirely reflected in domestic prices and for that reason the margin has fluctuated rather widely, but through most of 1931 it was below a freely importing basis on most grades of wool.

LONG-TIME PRODUCTION TRENDS

The long-time trends in sheep production will be influenced by the shifts that are likely to occur as a result of the present unfavorable economic position of the industry. Each previous major depression in sheep and wool prices has been followed by important shifts in the geographical distribution of sheep numbers and by marked changes in the character of the industry. During both the Civil War and the World War, wool prices advanced relatively more than did sheep and lamb prices, and following these wars they made greater relative declines. During periods of low prices also there was a tendency for wool prices to remain low for a longer time than did sheep and lamb prices. These tendencies, along with the necessity for obtaining maximum gross returns per sheep if the industry were to pay operating costs and withstand competition from other farm and range enterprises, apparently were responsible for initiating shifts from an enterprise where wool was the major source of income to one where mutton, and later, lamb production was of greater importance.

During previous major depressions in the sheep and wool industry, the first reaction was liquidation, the rate of such liquidation being greater in those areas in which sheep producers were most severely affected. In the period of low prices and liquidation from 1909 to 1914, which followed years when the industry had been greatly expanded in the Western States, such as it is now, the reduction in sheep numbers was brought about largely by the heavy marketing of lambs and the insufficient keeping back of young stock to replace the heavy losses of aged sheep resulting from lack of care, exposure, and old age.

There is no definite evidence yet as to what shifts, if any, will take place in the geographical location of sheep numbers, or in methods of sheep management by way of reducing operating cost or increasing efficiency in production during and following the next period of liquidation. If it becomes possible for producers in Texas to raise the necessary feeds and develop a mutton-type sheep adaptable to that area, spring-lamb production in Texas might become an important enterprise. Such a development would materially increase the supply of early spring lambs in the months when the areas that at present specialize on such production market their lambs. It is also possible that early-lamb production may be further stimulated in certain areas of the Corn Belt, since this has proved to be a profitable enterprise when efficient methods of production have been practiced.

MOHAIR

The outstanding features of the mohair situation are: (1) Continued increase in production in the United States in the face of a continued decline in prices; (2) a clip in Turkey and the Union of South Africa slightly larger than the average for the last five years; (3) a considerable accumulation of stocks in producing countries; (4) a heavy carry-over of old mohair in consuming centers; (5) a considerable decline in consumption in the United States and in Great Britain, the principal consuming countries; and (6) lower prices in all markets.

The mohair industry in the United States is no longer on an import basis. Considerably more mohair is produced in the United States each year than the mills are able to consume with their present limited outlets. From 1920 to 1926, production of mohair in this country expanded rapidly, increasing from 8,500,000 pounds to 11,800,000 pounds in 1926, in response to a growing demand at advancing prices. Considerable quantities of foreign mohair had to be im-

ported to supplement the domestic clip. In 1927, the demand for mohair began to decline but production continued to increase until it amounted to about 19,000,000 pounds in 1931. This increase in domestic production resulted first in decreases in imports of foreign mohair and later in accumulation of stocks. Imports are now almost negligible and consist mostly of special lots of fine kid hair.

Supplies of domestic mohair have been accumulating rapidly. Stocks of unsold mohair in the United States at the beginning of 1932 were probably in excess of 23,000,000 pounds, as considerable quantities of the 1930 mohair clip are still being held by the growers or by their selling agents. Present indications are that the 1932 mohair clip will probably not be below 19,000,000 pounds. This would mean that the supply of domestic mohair available for consumption during 1932, exclusive of stocks already held by the mills, would amount to over 42,000,000 pounds or about four times the estimated consumption of mohair during 1931.

Demand for mohair has continued to decline and activity in the mohair-manufacturing industry has been greatly restricted during the last three years. The decreased demand is due partly to the general world depression, which has so greatly curtailed consumer purchasing power in all countries and has forced the principal users of mohair upholstery fabrics—furniture and automobile manufacturers—to curtail their output, and partly because style changes in these industries especially, for several years have been shifting to other fabrics.

Mohair prices in the United States reached a high point in the winter of 1927-28 and then declined sharply in 1929 and 1930. Prices on January 2, 1932, were considerably lower than those quoted on January 3, 1931. Quotations on domestic-sorted first-kid hair at Boston declined 5 cents a pound during 1931 and it is now quoted at 60 to 70 cents. Medium mohair sorts declined 15 cents a pound, being quoted at 30 to 35 cents on January 2, 1932.

Since the World War, mohair production has tended to decline in the Union of South Africa and to increase in Turkey. The combined clip for these countries is unofficially estimated at between 19,000,000 and 21,000,000 pounds for 1931-32 compared with approximately 21,000,000 pounds last year. In addition there was a carry-over of 6,000,000 pounds of old-clip mohair in South Africa and 3,000,000 pounds in Turkey. On December 19, stocks in the Union of South Africa were reported as 9,000,000 pounds, a quantity almost equal to a total season's clip. In Turkey, stocks at the end of November were reported as over 5,000,000 pounds.

Imports into the United Kingdom for the first seven months of the 1931-32 season (May 1 to November 30) amounted to only 6,975,000 pounds, being about 25 per cent below the corresponding period last season and 14 per cent below imports during the same period of 1929-30. Total imports for the 1930-31 season amounted to 13,923,000 pounds, or approximately the same as in 1929-30.

On a calendar-year basis apparent consumption in the United Kingdom during the first 11 months of 1931 was almost 34 per cent below 1930. During the three years 1928-1930 consumption ranged from 12,000,000 to 14,000,000 pounds compared with 20,000,000 pounds in 1927, an average of 20,000,000 for the years 1921-1925, and 20,000,000 pounds in the years 1909-1913. Exports of mohair yarns from Great Britain for the first 11 months of 1931 amounted to only 3,700,000 pounds and were 32 per cent under the same period of 1930. In pre-war years exports of mohair yarn averaged around 16,000,000 pounds annually.

Possibilities for increased consumption of mohair are indicated in reports from Turkey to the effect that Russia and Syria have recently been showing interest in qualities suitable for blending with carpet wools. Carpet manufacturers in the United States are also reported to be considering the possibility of using some of our lower grade mohair in the manufacture of specialty carpets.

HORSES AND MULES

Numbers, as well as the farm prices, of horses and mules continued to decline during 1931. The index of prices of all farm products received by farmers declined 24.4 per cent during 1931, while the prices of horses and mules declined approximately 12.3 per cent from December 15, 1930, to December 15, 1931. The number of horses and mules on farms on January 1, 1932, was 17,761,000 compared with 18,380,000 on January 1, 1931, and 25,748,000 on January 1, 1920. Receipts at leading markets, although somewhat less than during 1930, met with a fairly active demand. With an up-turn in the agri-

cultural price level, horse and mule prices will probably start on the upward phase of the price cycle which has been retarded so long—(1) by the introduction of mechanical power and equipment, and (2) by the depression.

The number of horses on farms January 1, 1932, was estimated to be 12,679,000 as compared with 13,165,000 a year earlier. The number of mules was estimated to be 5,082,000 January 1, 1932, compared with 5,215,000 a year earlier. The decrease was relatively greater for horses than mules, being 3.7 per cent as compared with 2.6 per cent for mules.

Already market prices for desirable types and weights reflect this growing shortage. Although the prices of most classes of livestock declined at the markets during 1931, horse and mule prices declined little or not at all. At the Kansas City market the average for all classes and weights of work stock was the same in 1931 as for 1930. At St. Louis prices declined a little. At Chicago the 1,300–1,600-pound class sold within the same price range as in 1930.

Monthly farm prices of horses in the United States declined about 12 per cent, December 15, 1930 to December 15, 1931, reflecting to some extent the increasing proportion of old horses on farms. In most of those States that normally import their work stock, and in localities where agricultural income suffered the least in 1931, horse and mule prices declined the least or were the same as on December 15, 1930. In the North Central States horse prices declined approximately 15 per cent, in the North Atlantic group they declined 12.5 per cent, and in the South Atlantic 10.1 per cent. Mule prices declined about 13 per cent in the South Central States, but in Missouri, one of the principal shipping States, they were 22.5 per cent less than a year earlier. Low prices of cotton and wheat in the South and Southwest greatly reduced the demand for work stock.

Census data show the decline of the horse and mule population between 1920 and 1930. In general, the greatest decreases occurred in the Corn and Wheat Belts. Portions of the Cotton Belt show a heavy decrease in total numbers of work stock, particularly horses, as well as do the truck and fruit farming sections of the East and West. On April 1, 1930, there were approximately 20 per cent less work animals over 2 years of age on farms than on January 1, 1920. This represents an average decline of about 2 per cent a year for this 10-year period. The peak of the horse numbers cycle came in 1918; the peak of the mule cycle in 1926.

In a few areas where farm acreage was expanded between 1920 and 1930 there was an increase in numbers of horses and mules. In general, however, the total acreage in farms did not change greatly. The significant fact is the material decrease in the number of work animals per 1,000 acres of farm land, indicating a decreased utilization of animal power.

The census figures show a very great increase in the number of tractors and trucks on farms between 1920 and 1930. The 1930 figures were 920,395 tractors and 900,385 trucks, compared with 246,083 tractors and 139,169 trucks in 1920.

With fewer farms and an increased use of mechanical power there has been a greatly reduced need for animal power during this period. There is no likelihood that the adoption of the tractor and truck for farm use has reached its peak but it is not unreasonable to assume that any further increase in introduction will be at a lower rate than was the case in the period 1920–1930. Some expansion in the use of tractors and trucks seems necessary to offset the rapidly decreasing number of work animals, since under the most favorable conditions it will be some years before this decrease can be halted.

At present the low level of agricultural prices is keeping farmers from buying mechanical power, as the prices of such equipment have not declined in proportion to agricultural prices. Under existing price conditions it is difficult for many farmers to meet out-of-pocket costs for fuel and repairs but they have low-priced farm feed for work animals. Farm wages also are at pre-war levels in most regions so that any savings in labor costs that formerly may have resulted from the use of mechanical power are now greatly reduced. These conditions have led many farmers to get a maximum of use from their work stock and to reduce tractor use to a minimum.

Any tendency to decrease the use of mechanical power may be expected to increase the need for work stock. Unfortunately the available breeding stock is now limited and it will be several years before the decline in numbers can be checked.

Available returns from most States that have stallion and jack registration laws show that the numbers of such animals used for public service again

gradually declined during the 3-year period 1929-1931. The total numbers of licensed stallions in Illinois, Indiana, Iowa, Kansas, Michigan, Missouri, North Dakota, Oklahoma, South Dakota, Utah, and Washington for 1931 was 8,207, a decrease of about 16 per cent from the 1929 figures of 9,721 stallions in the same States. Generally, the decline was much greater in the numbers of registered public-service jacks than in the stallion enrollment. These reductions, together with the fact that the average age of work stock is known to be high, indicate that if breeding is not resumed soon on an extensive scale, there will be a continuing reduction in the numbers of work horses and mules. The shortage of young draft stallions is now being felt in many States. The scarcity of good sires is accompanied by a decided shortage of young work mares suitable for breeding purposes. This shortage of suitable young mares and the small numbers of serviceable old mares discourage the keeping of good stallions in many areas. Even with a strong price incentive to increased breeding, progress would be slow for some years. Lacking this incentive numbers of breeding stock will continue to decline.

It is probable that when farm prices improve such improvement will be reflected rather quickly in a growing demand for work horses and mules. The comparative cost of mechanical power and of animal power and the available supply of work animals will be the limiting factors in setting the limits to such upward movement.

Farmers can not expect to replace their present work stock a few years from now at prevailing low prices. Those who expect to continue to use animal power on their farms should, as far as possible, replace their old stock with young mares at present prices. This would put them in position to undertake colt raising when horse and mule prices reach price levels that make this seem profitable.

There has been a sharp decrease in mule breeding in the States from which the Cotton Belt secures its work mules. Hence, unless other suitable sources of power are found, a shortage of mules will develop within the next few years. Farmers who are in position to produce mules under favorable conditions probably will find a good market for young mules.

DAIRY PRODUCTS

The number of milk cows and heifers 2 years old and older on farms on January 1, 1932, was 3.5 per cent above the number on hand a year ago, but the number of yearling heifers being kept for milk was 2.3 per cent lower. The number of heifers and heifer calves being saved for milk is now only about the number that would normally be required to maintain dairy herds at their present level. The culling of dairy cows has continued to decline since 1925, and the rate has been particularly low the past two years during which period the heavy decline in the price of cattle has reduced so greatly the beef value of discarded cows. The retention of herds of the older and less productive cows has, in a measure, held down the rate of production per cow.

Prices of dairy products during 1930 and 1931 have declined less than has the average for all farm products. Dairy prices have followed approximately the price level for all commodities whereas farm products as a group have fallen far below that level. Feed prices have fallen much lower than dairy prices, although the degree to which this is true varies in the different regions.

The returns from dairying continued to be relatively better than from alternative enterprises, and there was sufficient margin between feed costs and the price of dairy products to make possible the profitable utilization of farm-grown feeds in this enterprise up to the close of 1931. During January, 1932, a further decline in dairy products prices reduced these advantages.

The number of farms giving attention to dairy production on a commercial basis has increased. Considering this expansion, production during 1931 was smaller than was expected, mainly because of drought and poor pasture conditions during the season of heavy production. Manufactured dairy products show no increase in volume over 1930; farm production of milk and butter probably increased slightly. On the other hand, the storage stocks of most dairy products, particularly butter, are abnormally low. The need for additional farm income tends to induce the full use of the present stock of dairy cattle with the exception of those in the Northeastern States where recently reduced prices of fluid milk, with somewhat higher feed costs, are likely to put an effective check on expansion and even to reduce output below the 1931

volume. The low rate of employment in industry has checked such increase in consumption as might have been expected to follow low prices, and has actually reduced consumption of fluid milk.

Comparatively heavy production abroad of the principal dairy products has been accompanied by reduced prices in foreign markets, which increased the possibility of foreign butter being sent to this country. In spite of substantial tariff protection, a condition of potential foreign competition developed in our markets in the early fall months when domestic prices would normally show seasonal advances. Pressure of foreign competition has since been relieved only by abnormal declines in domestic prices.

NUMBERS OF COWS AND MILK PRODUCTION

On January 1, 1932, the number of milk cows and heifers 2 years old and older, on farms, was 24,379,000. This was an increase of 3.5 per cent above the number on the same date last year and 6.4 per cent greater than the number two years ago. The increase in number during the last half of the year was probably the greatest in any similar period for many years. This increase would not appear to have been due to any abnormal number of heifers coming into production but was rather the result of decreased culling due to the tendency of farmers to keep more cows as long as the prices of dairy products are more favorable than those of other products and as long as feed is cheap relative to dairy products. Recent sharp declines in the market prices of dairy products will probably lead to some reduction in the north-eastern States; but, with returns from other agricultural products greatly reduced, many farmers are willing to milk additional cows even though there is only a relatively small spread between the income received from the products and the market value of the feed. In the South the necessity of producing on the farms a larger share of the food needed is a compelling factor, and the large local supply of cottonseed products and the larger acreage of hay and feed crops harvested in parts of the South in 1931 have stimulated local dairy expansion on a commercial scale. In the Corn Belt and in the West the higher price of butterfat as compared with prices of hogs and sheep is tending to shift interest to milk cows. For these reasons the number of milk cows has been increasing in practically all parts of the country.

In view of the sharp changes in prices occurring in recent weeks it is difficult to predict accurately either the changes that will take place in the number of milk cows on farms or the trend of milk production. The number of milk cows has been increasing steadily since early in 1929. The record of cows and heifers slaughtered under Federal inspection, which provides a rough indication of changes in the number of milk cows culled from the herds each month, has been declining since 1925. This decline in inspected slaughter continued at least until November, 1931, when inspected slaughter of cows and heifers was only 57 per cent of the average for that month during the previous eight years, but in view of the number of aged cows in the herds, it does not seem likely that culling can be reduced much further. When the price of cows declined from the 1929 peak the number of heifers saved for milk cows was reduced, and the number of yearling heifers being kept for milk cows on January 1, 1932, was estimated at 4,665,000 or 2.3 per cent below the 4,777,000 on hand in January, 1931, and nearly 1 per cent below the 4,700,000 on hand in January, 1930. The number of heifer calves on hand and being saved for milk cows on January, 1932, is estimated as 4,891,000 which is about the same as the number being saved last year and 2.3 per cent below the number being saved in January, 1930. This decrease is shared by practically all States except those in the West and Southwest. For the country as a whole, the number of heifers and heifer calves being saved for milk cows is now only about the number that would normally be required to maintain dairy herds at their present level.

Although the number of milk cows has been increasing for several years, the full effect of the increased size of herds on the production of dairy products has not yet been felt because through most of the pasturage seasons of 1929, 1930, and 1931 milk production per cow was materially reduced by widespread drought. The winter of 1930-31 and the first half of the winter of 1931-32 were unusually mild and winter production was heavier than it would otherwise have been.

Production also responds gradually to the relative prices of feed grains and dairy products. Last June when butterfat prices were at the low point, the returns from feeding grain for butterfat production were abnormally low and production was below normal. Drought in some areas contributed to the reduction in output and the price of butter increased. When new grains were harvested, the cost of feed grains fell to a very low point. The price of dairy products had strengthened, and as feed costs were lower in comparison with butterfat than in any period of the last 20 years (except the fall of 1931), and as there was some increase in fall freshening, a marked increase in rate of production came in fall months.

Recently the price of butter has fallen again and prices of feed grains have risen, and because of the largely increased competition for the fluid-milk market, returns from market milk have generally declined. As dairymen now have more milk cows, have a larger proportion of them in production, and have on their farms much larger supplies of grain than they had a year ago, it is not surprising that the current output of dairy products is heavier and the marketing situation more difficult than at this time last year. Conditions vary, however, rather sharply between the various producing sections. As freight rates are now exceedingly high in comparison with grain prices, prices of both mill feed and feed grains have been very low in the principal producing areas and relatively much higher in the deficit feed areas of the Northeast. Feed prices are relatively much lower in the butterfat-producing States than they are in the intensive market-milk areas. In the North Atlantic States, where grain costs are now high compared with the greatly reduced return from market milk, milk production is sharply lower than at this time last year.

Milk production this winter does not seem to be seriously affected by shortage of either hay or grain supplies on farms. Hay production in 1931 was far below average, and in 1930 was even slightly below. The shortage seemed rather serious in a large area extending from Michigan to California, but the generally mild weather up to the middle of January has permitted late grazing over a large area and has reduced hay requirements. Farmers have not greatly increased the proportion of straw fed to milk cows except in the areas most seriously affected by the 1931 drought. Feed-grain production in 1931 was below average in comparison with livestock numbers but exports of grains and feedstuffs are at a low level and much wheat has been fed, so the total tonnage of feed grains and commercial feedstuffs available for the current feeding season appears to be only slightly below average and markedly above supplies available for feeding last winter. During the fall months the quantity of grain fed to milk cows was probably slightly less than was fed last year, for the late fall pasturage available more than offset the much lower prices of feed grains as compared with the prices of dairy products. By the first of January there was a sharp curtailment in grain feeding in the principal northern and eastern market-milk areas where the price of milk is low compared with the cost of shipped-in feedstuffs. The supply of silage, however, is probably somewhat above that of 1931.

MANUFACTURED DAIRY PRODUCTS

The combined production of the principal manufactured dairy commodities in commercial plants in 1931 is estimated to have been about the same as in 1930. Production by commodities was very irregular, and was likewise irregular in different months. Substantial increases occurred in both creamery butter and evaporated milk for the months of January to April, inclusive, but with the development of unfavorable production conditions, particularly in the intensive dairy States of the Middle West, the manufacture of these commodities dropped abruptly to a level below that of the preceding year. This lower level held throughout the summer and early fall; but the relation between feed costs and butterfat prices made butter production comparatively profitable, and when weather conditions became quite favorable generally during the last three months of the year, the manufacture of creamery butter took a sharp upward swing, which was maintained to the end of the year in spite of some decline in butter prices. The production of concentrated milk, however, continued to be less than during the preceding year.

Regionally, some interesting and significant variations in production of creamery butter occurred in 1931, particularly in the Middle West, where the great bulk of the domestic supplies of commercial butter originate. All States in that

general area showed material increases up to May, but in May and throughout the heavy producing months that followed, sharp decreases were reported in Minnesota, Iowa, the Dakotas, Kansas, Nebraska, and Missouri. Production in these States remained below 1930 until November, when the factors governing production became exceptionally favorable for that time of the year, and production for the last two months of the year rose sharply above production during the corresponding period of 1930. For this area, the 1931 production was about 1 per cent less than in 1930. In most of the area including Wisconsin, Illinois, Indiana, Michigan, and Ohio, the effects of the drought in 1931 were not so severe as in 1930, and production registered an increase over 1930 for every month save July. Total production for this group of States was about 6 per cent larger than in 1930. In the East, production of butter was about 13 per cent less in New England than for the previous year, and in the Middle Atlantic States about 2 per cent less. No material change was evident in the South Atlantic States where dairying centers mostly around the production of fluid milk for small towns or for farm use, an occasional creamery being the exception rather than the rule. In the South Central States, the net change for the year was an increase of about 11 per cent. Although the quantity of creamery butter originated in this section is as yet of little significance in relation to the total United States production, the striking increase in butter, as well as other dairy products, not only in 1931 but in preceding years, is an indication of a growing interest in commercial dairying in that region. In the far West, some variation in production is found. In the Mountain States, production was approximately 2 per cent less, whereas in the Pacific Coast States it was about 6 per cent more.

Considerable irregularity is likewise evident in the production of American cheese, owing largely to variation in production conditions in Wisconsin, where over 60 per cent of the domestic supply of American cheese is produced. Unfavorable production conditions in that State for the first eight months of the year led to a much smaller production than in 1930, but in September, and for the remainder of the year, under the influence of unusually favorable seasonal factors, production was above 1930. For the year, Wisconsin's production was about 3 per cent less than for 1930. Increased quantities of cheese were produced in the South during 1931 as compared with 1930. This increase was not particularly large in relation to total production, but was of some importance from the standpoint of restricting outlets in the South for cheese from other sections. The total production for the year in the Southern States was about 22 per cent greater than in 1930. Other regions to register increases were the East North Central States (excluding Wisconsin) with around 13 per cent, and the Pacific Coast States with about 6 per cent. Because of the decrease in other areas, particularly Wisconsin, the entire domestic production was about 2 per cent less.

STORAGE STOCKS

Although the carry-over of cold-storage stocks of butter at the beginning of the 1931 storing season on May 1 was heavier than the 5-year average for that date, these stocks were considerably lower than those of the previous year. Stocks continued below those of a year previous throughout the remainder of 1931, and on January 1, 1932, the total quantity of butter in cold storage amounted to but 26,550,000 pounds, compared with 63,401,000 pounds on January 1, 1931, and a 5-year average of 53,951,000 pounds. At the opening of the new storing season in May, 1931, stocks of American cheese, though slightly higher than the previous year, were appreciably above the 5-year average. This situation was somewhat relieved as the year progressed, and at the beginning of 1932 cheese stocks of 55,735,000 pounds were 7,500,000 pounds below a year previous and almost 4,000,000 pounds below the January 5-year average. Stocks of evaporated milk in manufacturers' hands are now very materially below those of the last few years at this season, but this may be attributed in part to intensive selling by manufacturers during the fall months. Manufacturers stocks were reduced, but there was a considerable increase in stocks held by wholesale grocers who took advantage of what were considered favorable price concessions.

MARKET CONDITIONS

The general decline in prices of dairy products during the last two years has been influenced primarily by the deflation in commodity prices and the business

depression, since the increases in domestic production of dairy products during the last two years were relatively small. The price decline during January, 1932, was further influenced by the increase in December and January production. From January, 1929, to December, 1931, the general level of wholesale prices in the United States declined about 30 per cent to approximately the pre-war level, while farm prices of all farm products declined 50 per cent and on December 15 were 34 per cent below pre-war. During the same period, farm prices of feed grains declined 53 per cent as compared with a decline of 37 per cent in farm prices of dairy products. During 1931 prices of dairy products were low compared with prices in previous years, but were high compared with many other farm products. This price relationship has tended to stimulate dairy production.

The monthly price of 92-score butter at New York in June, 1931, reached a low point, during the decline of the last three years, of 23.3 cents. Cheese prices on the Wisconsin Cheese Exchange (twins) reached a low monthly average of 10.4 cents in May. During the late spring and early summer months butter production was relatively large. Storage operators were reluctant to store because of their discouraging operations of the 1929-30 and 1930-31 seasons and, with the decline in business activity, prices of butter and cheese dropped to the lowest level in 20 years. With the relatively light movement of butter into storage during the early summer and the curtailment in production during the late summer, butter and cheese prices rose sharply during July, August, September, and early October. The rise in prices occurred even though demand conditions, employment, and pay rolls continued to decline. In November and December, monthly prices of 92-score butter at New York were 30.9 cents and 30.6 cents respectively. During January, 1932, sharp declines occurred.

With the improvement in production during the late fall and early winter, and the further decline in business activity and low prices in foreign countries, prices declined from the high point in mid-October and by the middle of January were at about the same level as in June.

Prices paid by milk distributors for basic quantities of fluid milk for city use declined about 23 per cent during 1931. The general decline in prices of manufactured dairy products during the last three years had left dealer's buying prices for city milk relatively high as compared with manufactured products, although quantities of surplus milk were so large as to reduce net prices to producers in some areas almost to the level of manufactured products. With increased production in prospect and some decreases in fluid-milk consumption, prices were reduced in practically all of the important fluid-milk markets, especially during the latter half of 1931.

The decline in wholesale prices of dairy products in the United States is being reflected somewhat in lower retail prices. The index number of retail prices of dairy products declined 16 per cent from November, 1930, to November, 1931. The retail price of fluid milk declined 2 cents per quart, butter 8 cents per pound, cheese 7 cents per pound, and evaporated milk 1.1 cents per can.

The estimated milk equivalent of creamery butter, cheese, and condensed and evaporated milk consumed during the first 11 months of 1931 was about 2.2 per cent larger than in the same months of 1930. The consumption of condensed milk was estimated to have declined 15.2 per cent, and cheese 1.4 per cent, whereas evaporated milk increased 1.4 per cent and creamery butter 3.4 per cent. With low prices for butter there was a shift from oleomargarine to butter, oleomargarine production during the first 10 months of 1931 being 30 per cent less than in the same period of 1930.

Current comprehensive data are lacking as to fluid-milk and cream consumption in cities, but such evidence as is available indicates that consumption declined slightly in 1930 in comparison with 1929, and declined further in 1931. Total milk and cream consumption in cities probably averaged about 5 per cent less in 1931 as compared with 1930. In some markets the decrease was greater whereas in some others there was a slight increase.

Receipts of fluid milk at New York by rail increased about 0.5 per cent per year in the period 1927-1929, but in 1930 there was a decrease of about 1 per cent. Increased truck receipts tended to offset decreased rail receipts during this period and in 1931 a decrease of about 6 per cent under the previous years. Total milk receipts at Philadelphia in 1930 were about 0.5 per cent less than in 1929, and in 1931 were some 2 per cent less than the preceding year. In Boston on the other hand, milk receipts showed an increase of close to 4 per cent in 1931, compared with 1930.

Receipts of fluid cream at New York showed an average yearly increase of 8 per cent in the period 1927-1929 but the yearly increases in 1930 and in 1931 were 1 and 3 per cent respectively. At Philadelphia, cream receipts decreased 0.5 per cent from 1929 to 1930, and 12 per cent from 1930 to 1931. Receipts of cream at Boston increased 1 per cent in 1931 as compared with receipts in 1930.

During the fall and winter of 1931, as in 1930, domestic prices of butter have been limited in their seasonal advance by foreign competition. Yearly average prices of butter in the United States have declined during each of the last two years fully as much (roughly 20 per cent) as in Copenhagen or London. However, the relation between average prices for the year in domestic and foreign markets does not closely reflect the actual competitive position. During the last two years, seasonal competition has continued, even with a tariff of 14 cents a pound on butter. Early in October, 1931, the price margins in New York over Canadian butter in Montreal, New Zealand butter in London, and Danish butter in Copenhagen, approximately our import duty. The volume of actual importation was small and principally from Canada, but offers of foreign butter laid down in our principal markets influenced prices out of proportion to actual volume of importation. Since the United States has been cut off as an outlet for Canadian cream and milk, butter production has been greatly increased in Canada and an exportable surplus of more than 10,000,000 pounds has developed within the last year.

The excess of United States imports over exports of all dairy products combined, on the basis of their total milk equivalent, further declined in 1931 to approximately 400,000,000 pounds from 606,000,000 pounds in 1930, and 780,000,000 pounds in 1929. The practical exclusion of Canadian cream and milk by the increased tariff rates on these products effective in June, 1930, accounts largely for the decline in total importation. Total imports of cheese declined from 76,000,000 pounds in 1929 to 68,000,000 pounds in 1930, and to approximately 60,000,000 pounds in 1931. Imports of cheese from Switzerland declined from 18,839,000 pounds in 1929 to 17,947,000 pounds in 1930, with imports during 1931 indicated as about the same as in 1930. Domestic production of Swiss cheese was increased from 19,406,000 pounds in 1929 to 26,393,000 pounds in 1930.

Consumption of butter in European countries generally has been stimulated by the low prices prevailing during last year, where large quantities of margarine have been used in place of butter. Supplies of imported butter absorbed in Great Britain and Germany were about 6 per cent greater during 1931 than in 1930. The increase in imports into Great Britain was about 20 per cent against a decrease in German imports of about 25 per cent. Some of the unusually large quantities of butter consumed in Great Britain would have been absorbed by Germany had not German buying power been lower than in other years. Consumption of imported cheese in Great Britain, on the other hand, appears to have been lessened materially in 1931 with London prices for cheese at the end of the year as much depressed as were the prices for butter.

Increased dairy production in Europe was moderate in 1931, as compared with increases in Canada, New Zealand, and Australia. Danish butter production was increased by about 2 per cent, against a 15 per cent increase in Canadian creamery butter (during the first 11 months). During the remainder of the winter and early spring, butter and cheese shipments from sources in the Southern Hemisphere will be the most important factor on the supply side in the European market situation, as they have been during 1931, since New Zealand and Australia are still near the peak of a season of record output for both countries. Gradings of butter in New Zealand and Australia afford the best indication of current production. The quantities graded in New Zealand were 7.4 per cent heavier during the first four months of the current producing season than a year ago, and Australian gradings about 30 per cent heavier. Shipments of butter afloat from New Zealand, Australia, and Argentina, principally to Great Britain, amounted on December 31 to 49,000,000 pounds against 45,000,000 pounds a year earlier and 33,000,000 pounds on the corresponding date in 1929. With the exception of periods during which domestic prices are seasonally highest, as in our winter months, prevailing tariff rates of 14 cents per pound on butter and 7 cents per pound on cheese may be expected to provide an effectual barrier against foreign products entering United States markets, but not to insure against the possibility of domestic supplies bringing our prices to the world level, as occurred last summer.

REGIONAL READJUSTMENTS

With more cows on farms in nearly every State than a year ago, with abundance of feed available at prices lower relatively than dairy-products prices, with farm wages at pre-war levels, and with prices of other products so low as seriously to reduce farmers' income from other sources, there are capacity and motive for still further expansion in dairy production.

These conditions and motives are not of equal importance in all parts of the country. The situation in the northeastern section, particularly in New England and New York, is in sharp contrast with those in the other dairy-producing areas. Here feed costs are relatively high and recent sharp reductions in fluid-milk prices have made it of doubtful wisdom to buy commercial feeds for the production of milk in excess of that volume which can be sold at base prices. Some reduction in output is, therefore, to be expected in this region.

Reduction in fluid-milk base prices for these States during the fall months of 1931 amounted to about 30 per cent of the rates in force a year earlier, to say nothing of smaller returns for surplus milk because of a decline in the price of butter. On the other hand, feed prices have risen by about 10 per cent in the same period.

In the Middle West, however, with cheaper feeds, which are on the farms and thus are not a matter of cash outlay, the motive to reduce production is not in evidence. With the prevailing low prices of hogs and other farm products a continued pressure for realizing additional income by dairying will continue to be an outstanding factor maintaining heavy dairy output and even increasing it.

In the South the low price of cotton in the last two years has caused a considerable shifting of crop land to feed crops, and depleted income from cotton has led farmers to resort to other sources of income, all of which has tended to increase the emphasis on dairying. There are potential resources for a very substantial expansion in dairy output in the South and it may be expected that these resources will be used in larger and larger measure if income from cotton continues low. In the Great Plains and in the Mountain States the dairy output has been curtailed by recent droughty conditions. Some increase in this region may be expected with better feed conditions. This is particularly true if the price of wheat does not recover substantially. In the Pacific Coast States the steady growth of population has stimulated increased dairy output and the substantial increase in production during last year may well be taken as an indication of the working out of economic conditions there, both on the farm and in the market, leading toward continued growth in the dairy output.

Throughout much of the agricultural areas of the United States farmers are being forced to a hand-to-mouth, self-sufficing type of production and consumption. This encourages a continuation of dairy output wherever feed is available and where sufficient dairy stock can be obtained at reasonable figures. For the country as a whole the tendency to expand dairy output will probably be maintained. It will be held in check by the limitations of the market and the reviving alternative opportunities as they may appear in other lines of production now more depressed than dairying.

POULTRY AND EGGS

The outlook is for a smaller production of eggs in 1932. The number of hens and pullets in farm flocks on January 1, 1932, was reported at about 5 per cent less than on the same date in 1931. Commercial flocks on the Pacific coast also showed a considerable decrease in numbers.

Market supplies of poultry during the first half of 1932 probably will be smaller than for the first half of 1931. The total receipts for the year will be influenced by the extent to which old hens will be sold and by the number of chickens raised and the age at which the young stock is marketed.

Up to about the close of 1931, conditions indicated that the number of chickens to be raised in farm flocks in 1932 would be increased. The 1931 season had been more favorable to poultry and egg producers than to producers of most other farm products. The severe break in winter-egg prices at the close of 1931, resulting from heavy storage stocks and large winter production of eggs, altered the situation. Owing to the availability of poultry and eggs for farm use, and the favorable outcome in 1931 in spite of the February slump in prices in that year, farmers may still decide to go ahead with an increase. If the low egg-

price tendencies shown in January should continue, however, a decrease in numbers of chickens raised in 1932 might occur instead of an increase.

A small total egg production is expected in 1932 because of fewer hens on January 1 and low midwinter prices of eggs. If bad weather in February and March should cut production and support the price of eggs, the resulting heavier feeding, fewer sales of hens, and larger hatching of pullets, might limit the expected decreases.

The carry-over of storage eggs in 1932, although less than in 1931, was unusually heavy. Two unprofitable storage years in succession will tend to curtail demand for eggs for storage this spring.

Poultry-feed supplies are large and poultry-feed prices were low in relation to egg and poultry prices during most of 1931. The feed-price situation was distinctly favorable to both poultry and egg production until the winter break in egg prices.

The poultryman, especially if engaged in general farming, is able to make adjustments to changes in demand within a shorter period and with a smaller sacrifice than is true with most other branches of livestock. Unprofitable layers can be marketed if egg demand lags. With a strong demand for eggs, fewer hens are marketed, and increased production per hen is sought by heavier feeding and better care. The normally large farm consumption can be considerably increased or decreased, according to the attractiveness of prevailing prices. A very large increase or decrease in numbers of chickens is possible within a period of six or eight months of a single season. Actual adjustments for the poultry industry as a whole are more deliberate but this possibility of rapid adjustment to changing conditions makes it difficult to anticipate future developments very far ahead or in other than rather general terms. At the same time study of seasonal and long-time trends together with attention to general conditions and current developments, is of much help to poultry and egg producers.

POULTRY

Laying birds in farm flocks were slightly fewer throughout 1931 than during 1930. Preliminary returns indicate that numbers at the beginning of 1932 were about 5 per cent less than at the beginning of 1931. Decreases shown by the monthly returns of farm flocks for January 1 are 4 per cent for the North Central States; 6 per cent both for the South and the far West; and less than 1 per cent for the North Atlantic States.

Pullets held for layers on December 1 were reported at 6 per cent less than in 1930, and at 10 per cent less than in 1929. Reduction in numbers of pullets on December 1 was 6 per cent for the North Central States, 2 per cent for the North Atlantic and the far Western States, and 7 per cent for the South, thus showing a smaller decline for numbers of birds in farm flocks in those portions of the country where large commercial flocks are important. These figures are based upon returns for farm flocks containing less than 400 hens and pullets of laying age on January 1, and therefore fail to show changes in charge commercial flocks. A tabulation of the returns from about 600 commercial farm flocks having between 400 and 1,000 hens and pullets each, shows numbers per flock to be practically the same on January 1, 1932, as at the beginning of 1931. The much smaller egg receipts in the final months of 1931 than in 1930, at the primary markets on the west coast, where commercial flocks are important, indicate that the decreases in commercial flocks have been greater than in farm flocks for that section of the country.

The number of chickens raised in 1931, judging from numbers of young chickens reported on farms during the year, was apparently at least 5 per cent less than in 1930. Farm hatchings made up a much larger proportion of the total in 1931 than in 1930, so that the decrease of about 26 per cent in commercial hatchings did not result in a corresponding decrease in farm flocks. The average date of hatchings by commercial hatcheries was much later in 1931 than in 1930. The increased proportion of farm hatchings, which ordinarily come much later than those in commercial hatcheries, tended further toward late average hatchings. This lateness of the hatchings in 1931 is reflected in the fact that numbers of young stock reported in farm flocks compared with numbers the previous year were 22 per cent less in May, 14 per cent less in June, 10 per cent less in July, and only 5 per cent less in October.

The cycle of change in numbers of chickens has been almost uniformly four years, an increase for 3 years followed by 1 year of decrease, coupled with a

long-time upward trend. The decrease in numbers in 1931, following only two years of increase, may have resulted from the falling price levels of 1930-31. The indication from the normal cycle is therefore confused. The usual reaction to increase after a year of decrease might not occur. Instead, 1932 might show the usual fourth-year decrease.

In view of the relatively favorable season to poultry and egg producers during most of 1931 it seemed likely that there would be a tendency toward an increase in hatchings in 1932 over 1931. At about the close of the year, however, the burden of rather heavy storage stocks of eggs and a record high rate of winter egg production per hen, along with the general price trend, resulted in a precipitate fall in winter-egg prices, which reached almost a record low January level. With this price break, occurring at the beginning of the seasonal increase of egg production which normally continues up to the April or May peak of layings, the situation is greatly altered. Conditions in January, if continued, will tend to discourage an increase in numbers of chickens to be hatched and may result in a further decrease this year rather than an increase.

The low prices received for eggs during the winter of 1930-31 led to a close culling of farm flocks and a heavy movement of dressed poultry into the four markets of New York, Chicago, Boston, and Philadelphia. The usual summer and autumn rise in fresh-egg prices checked the movement of hens but receipts throughout 1931 were nevertheless heavy. Part of the heavy receipts were undoubtedly due to some forced selling of poultry to satisfy the need for cash to meet the current expenses of poultry producers, and part to the fact that the decline in poultry and egg prices was accompanied by even greater declines in feed prices, making poultry production relatively more profitable and resulting in increased weight per bird marketed during 1931.

Total receipts of dressed poultry at the four markets for 1931 amounted to about 386,000,000 pounds as compared with 360,000,000 pounds for the year previous and 380,000,000 pounds for 1929. Receipts for these three years were the highest on record, and the receipts of 1931 were about 5 per cent over those of 1930. It is believed, however, that a part of the increased receipts of 1931 was due to a heavier movement of turkeys, particularly in December. Receipts of live poultry at New York and Chicago, the only two markets for which information on receipts of live poultry are available, were less than those of 1930 by about 986 cars, or about 15,000,000 pounds in terms of dressed poultry. This makes the total receipts of poultry, dressed and live, at the four markets for 1931 very similar to those of 1930.

Heavy early marketings of dressed poultry, together with small stocks in storage at the same time, caused the 1931 movement of dressed poultry into the freezers to start in June instead of late August as is usually the case. Dealers anticipated relatively light receipts of poultry later in the year and stored poultry so freely that by October 1 total stocks reported in storage were about 9,000,000 pounds more than on October 1, 1930, and 8,000,000 pounds above the 5-year average. The fact that fall receipts of dressed poultry were maintained at about a normal level, and that the demand for current consumption was gradually weakening, caused storage operators to become conservative, with the result that on January 1, 1932, stocks were reported at about 117,000,000 pounds, approximately 12,000,000 pounds more than the very low stocks on the same date in the previous year, but 7,000,000 pounds less than the 5-year average for January 1. A part of the increased holdings of January 1, 1932, was due to a larger stock of turkeys, the increase amounting to 5,736,000 pounds. Making an adjustment for changes in stocks of turkeys, other classes of poultry at the beginning of 1932 were only about 6,000,000 pounds more than at the beginning of 1931, and 8,000,000 pounds less than the 5-year average.

The urban consumption of poultry in 1931 was apparently smaller than in 1930, the decrease amounting to about 4 per cent. Consumption varied markedly during the year, being heavy throughout the first part when farmers were selling off their flocks rather drastically and generally low prices prevailed, but falling below 1930 during the latter part of the year in line with continued decrease in the general consumption demand, and because of the competition through lower prices for other meats.

The farm price of chickens in December, 1930, was 15.3 cents per pound or nearly 4 cents below December, 1929. Usually in the spring the farm price of chickens makes a pronounced seasonal rise which is followed by a gradual decline during the rest of the year. The spring price in 1931 did not advance

so much as usual and the price did not begin to fall materially until the last quarter of the year. The spring price advanced irregularly up to a peak of 16.7 cents per pound in April and it was maintained at about 16 cents during the next five months after which it declined to 13.9 cents in December, which was the lowest December price since 1916.

Feed for poultry is in ample supply this year. The corn crop, which provides the principal component of the chicken ration on most farms, was larger in 1931 than in 1929 and about a half billion bushels larger than the drought crop of 1930. The wheat crop was also large, being about 8 per cent above the 5-year average.

Poultry products were not immune to the general downward trend in prices. However, declines in the farm price of poultry and eggs were much less to December, 1931, than those of farm feed for poultry. The December 15, 1931, farm price of eggs was 96 per cent, of chickens 91 per cent, and of poultry feed 61 per cent of the prices of these items on December 15, 1930. Compared with December average prices for the years 1923-1927, the price of eggs was 55 per cent, of chickens 75 per cent, and of poultry feed 47 per cent.

The severe decline this year in winter-egg prices came two or three weeks earlier than the corresponding break of last year. In the winter of 1930-31 the farm price of 26.8 cents per dozen for eggs on December 15, fell to 22.1 cents on January 15 and to 14.1 cents on February 15. These figures for each month were the lowest in the record beginning in 1910. By March 15, prices had recovered to 17 cents; they held at 16.2 cents in April and fell to 13.3 on May 15 at the peak of the laying season.

This season farm egg prices fell from 25.6 cents on December 15 to 17.2 cents on January 15, the latter price being 7.6 cents below that of any January in the 23-year record of farm prices. The record of wholesale egg prices at Chicago available for the first market day of each month, indicates that January farm egg prices this year were probably the lowest since 1897.

Comparison of the prices for feed and for poultry products on January 15 shows that the price of feed is 46 per cent and that of eggs 44 per cent as much as the average January 15 prices for these products in the years 1923 to 1927, and that both are 61 per cent as high as the January 15 prices of the years 1910 to 1914. The January 15, 1932, prices of feed for poultry and of eggs were therefore about equally low for that date.

For chicken, however, the January 15 farm price of 13.3 cents per pound this year is 70 per cent as high as the January 15 average for 1923-1927, and 123 per cent as high as that of 1910-1914. Compared with feed prices, therefore, January prices of chicken are 52 per cent higher judged from 1923-1927 levels, and twice as high judged by prices for these products in January, 1910 to 1914.

EGGS

The number of eggs laid per hen during 1931 was unusually large. The reported daily layings per hen in farm flocks for the first day of each month in 1931 exceeded the average for the same month in recent years in every month save one. The number of eggs laid per 100 hens and pullets of laying age on December 1 was 17 in 1931 compared with 14.9 in 1930, and 12.8 for the 5-year average. The average of the 12 daily layings reported for the first day of each of the 12 months, amounted to 35.5 eggs per 100 hens and pullets in 1931 compared to 33.7 in 1930, with 33.3 for the 5-year average and with a previous high record of 33.9 in 1929. The favorable season, abundance and cheapness of feed, with a much higher-than-usual proportion of wheat in the farm poultry ration, and close culling, are some of the factors responsible for the high rate of laying during 1931.

Owing to the reduced number of layers, the total production of eggs shows only a small increase in 1931 over 1930. The total number of eggs laid per farm flock, in the 12 days reported during 1931 was only about 1 per cent greater than in 1930 and 3 or 4 per cent greater than the 5-year average.

The total farm production of eggs this year will probably be less than last year owing to a decrease of about 5 per cent in number of layers. The exceptionally large number of eggs laid per hen in 1931, owing to abundant feed, close culling in the spring, and the favorable season for poultry, is not likely to be surpassed in 1932.

The receipts of shell eggs at the four markets in 1931 were slightly less than those of 1930, amounting to about 15,276,000 cases compared with 15,401,000 cases for the preceding year. A very mild and open winter, together

with a heavy production from the large and very early hatched pullet crop of 1930 caused receipts to be especially heavy from the first of the year up through the middle of March. Sharp reductions in farm flocks in late February and March, following the extremely low midwinter prices for eggs, combined with more seasonal weather in early spring, led to some decline in the level of shipments as compared with 1930, and receipts of eggs at the four markets in the latter part of 1931 dropped below the receipts of the same period in 1930. Although farm production of eggs during 1932 is expected to show a decrease under 1931, receipts of eggs at the four markets may or may not decline proportionally. The weekly need for cash may cause farmers to market a larger proportion of the eggs produced. On the other hand, extremely low prices, such as prevailed in January, tend to increase farm consumption.

Fewer eggs were stored during the into-storage season of 1931 than were stored during the corresponding period of 1930. Total stocks in storage July 1, at the peak of the 1931 season, amounted to 9,507,000 cases, compared with 11,198,000 cases on August 1, 1930, and the 5-year average August 1 peak of 10,249,000 cases. Although peak holdings of 1931 were reached a full month or more earlier than ever before and were approximately 1,691,000 cases less than the peak holdings of 1930, and 742,000 cases less than the 5-year average, stocks on January 1, 1932, were only 400,000 cases less than the record-breaking stocks of January 1, 1931, and about 300,000 cases more than the 5-year average for that date.

The results of the storage-egg deal in 1931 resembled in many respects those of 1930. Although fewer eggs were stored and at lower prices than in the previous year, the combination of a continued lessened consumer demand and a liberal fresh-egg production developed a trade in storage eggs that was very unsatisfactory to those who were handling them. Prices on Refrigerator Firsts on the New York market from September through December averaged only about 2 cents higher than the prices at which they went into storage, which was not sufficient to pay storage and other costs, to say nothing of profits. The severe financial losses sustained on the 1930 storage deal adversely affected the strength of demand and reduced the volume of eggs stored in 1931. Even though the losses sustained in 1931 were more moderate than in the previous year, it is natural to expect that the demand for eggs to be stored in 1932 will be further weakened by the unsatisfactory outcome of both years.

Although no definite data on egg consumption for the country as a whole is available for 1931, the information which is available indicates that the quantity of eggs consumed in the principal urban centers was slightly larger than the corresponding consumption of either 1930 or the years just preceding. Prices were the lowest for many years, and in some months the lowest since long before the World War. Consumption, compared with previous years, was especially heavy for January, February, and March, when the glutted condition of the storage-egg markets and an unusually heavy midwinter fresh-egg production, caused the prices of both storage and fresh eggs to drop to the lowest points reached since the early part of the present century. It is estimated that during these three months approximately 17 per cent more eggs were consumed in the larger cities than were consumed during the same time in 1930. This level of consumption, however, was not long maintained, for with the beginning of the 1931 storage season prices held relatively close to the midwinter prices instead of showing the usual seasonal decline, and consumption became irregular. During the latter part of May, June, and early July, when prices were again approximately the same as the low points reached in February, consumption was somewhat above the corresponding consumption of 1930, but with prices for the last half of the year approaching more closely the comparative prices for 1930, consumption was generally less. For the entire year, however, consumption was possibly 2 or 3 per cent larger than in 1930.

FROZEN EGGS

The quantity of eggs broken commercially and frozen in 1931 is estimated to be about one-third less than 1930, but the frozen-egg industry has undergone rapid expansion within the last few years, and apparently is causing some changes in the distribution of eggs that may eventually have far-reaching effects. From small plants originally designed to utilize the small, irregularly shaped, and "checked" eggs in the receipts of the large markets, the industry has now reached the stage where large breaking plants are maintained close

to the centers of production which no longer confine their breakings to small-sized and cracked eggs but also break eggs of the same quality as those required by the regular shell-egg trade. It is obvious that the economies in handling, storing, and using frozen eggs make them well suited for manufactured products in which eggs are used. It is in this field, especially in the baking and confectionery trades, that the use of frozen eggs is becoming more important each year and is replacing to a large extent the use of shell eggs, particularly storage eggs, in these industries. It is to storage eggs that frozen eggs will perhaps offer the greatest competition, and in the future will undoubtedly serve to restrict to an increasing degree the outlets for storage eggs of the lower grades, which, although not meeting all the requirements of the more selected shell-egg trade, are well suited for manufacturing purposes. It is evident that with a decrease in the demand for storage eggs for manufactured products, a greater dependence must be placed upon shell-egg outlets for disposal of storage supplies. To insure storage eggs meeting the requirements of these outlets, the demand for eggs for storage is increasingly toward eggs of high quality.

Storage stocks of frozen eggs were again large in 1931, although the 115,000,000 pounds reported for the peak on August 1 was slightly less than the 116,000,000 pounds reported for a year earlier. The decrease in stocks during the latter part of the year, however, was larger than a year ago, amounting to approximately 35,500,000 pounds to January 1 compared with a corresponding reduction of 33,000,000 pounds in 1930. Total stocks of frozen eggs on hand at the beginning of 1932 were about 79,000,000 pounds compared with 83,000,000 pounds on January 1, 1931.

The imports of frozen eggs in 1931 showed a marked decline from those of the preceding year, which in turn were only about 37 per cent as large as the imports for 1929. Practically all of the 1931 imports were made up of frozen yolks. Total frozen-egg imports for 1932, including frozen whole eggs, yolks, and albumin, amounted to only 714,000 pounds compared with 5,130,000 pounds in 1930, and 13,771,000 pounds for 1929. The explanation of the rapid shrinkage in frozen egg imports during the last few years is found in part in the increase in the tariff rate in 1930 from 7.5 cents to 11 cents and in part in the rapid expansion of the domestic frozen-egg industry. Improvements in the methods of breaking, packing, and storing, and the high quality of the domestic product, has made it possible to compete with the imported product.

Imports of dried eggs, including dried whole eggs, yolks, and albumin, in 1931 were only about 63 per cent as large as the imports of 1930. Most of the imports came in during the first part of the year. With an increase on July 24, 1931, from 18 cents to 27 cents per pound in the existing tariff rate, the importations for the last half of the year were relatively small. Some increase in the domestic production of dried eggs is anticipated.

Although egg prices in 1931 in common with those of other commodities, were considerably below 1930 levels, the difference gradually grew smaller. The average price per dozen of Fresh Firsts at New York by quarters during 1931 was lower by 14.3 cents, 6.2 cents, 3.7 cents, and 2.7 cents respectively than the corresponding prices of 1930. This difference, in the case of better grades, has not diminished so much, corresponding 1931 figures for Fresh Extras being 13.9, 6.1, 5, and 4 cents, respectively; Pacific Coast White Extras were 12.5, 8, 5.6, and 4.6 cents, respectively, below corresponding quarterly average prices in 1930. Peak prices in 1930 were reached in November; Fresh Firsts averaged 33.5 cents and Pacific Coast White Extras averaged 52.9 cents. The seasonal decline in 1931 continued until June, when Fresh Firsts averaged 17 cents and Pacific Coast White Extras were 26.3 cents, prices being depressed by heavy production and a limited demand for eggs for storage. In the fall, with production continuing relatively heavy, peak prices in November, 1931, were not so high as a year before; Fresh Firsts averaged 29.2 cents and Pacific Coast White Extras were 45.4 cents. The price of the latter grade in December was, however, above last year's level in December.

TURKEYS

The upward trend in turkey production seems likely to continue, because of the increasing number and size of specialized flocks handled on a commercial scale by producers using modern methods. Improved methods of incubation and brooding are reducing the cost of raising turkeys and making it possible to sell them at prices nearer to the market price of chickens. Production of

turkeys will tend to expand as long as the increasing consumption at the narrowing price differential between turkeys and chickens leaves a price for turkeys that shows a profit to the producer.

The relatively favorable returns to turkey producers in 1931 will encourage an increase in production in 1932. The size of the 1932 crop will be determined to a considerable degree, however, by weather conditions during the hatching and growing season. The losses from unfavorable weather, although largely overcome in the case of those using the improved methods of brooding, are still an important element in the number of turkeys raised from the ordinary small flocks of poults allowed to range with the hen. Also, losses to older birds held in large flocks, from various causes including diseases, are severe at times.

Farm prices for turkeys for the 1931 Thanksgiving market for the United States as a whole were between 2 and 3 cents per pound lower than for the same period in 1930. Some decline in the price had been generally anticipated, on account of the estimated increase in the crop as compared with 1930 of nearly 2 per cent, and the general uncertainty of consumer demand because of prevailing industrial conditions. The October and November farm prices for live turkeys, averaging 18 cents, represent a return to the price levels of 1916.

Although a large percentage of the turkey crop was somewhat more mature than is usual for Thanksgiving, general conditions were unfavorable for marketing the normal and expected percentages of the crop. Among the unfavorable conditions were the unseasonably warm weather, and the producers' early ideas of value which were considerably higher than the offers of dealers. As a result, Thanksgiving marketings were light, relative both to the previous year and to the total 1931 crop, and the market situation was generally stronger than anticipated. By the close of the Thanksgiving transaction, supplies were practically cleaned up at retail prices only slightly lower than for Thanksgiving 1930.

The Thanksgiving marketing season closed in such a strong position that market confidence was maintained for Christmas trade. Farm prices in December averaged about 1 cent higher than for November. As the holiday approached, however, it was found that market supplies were rather burdensome, and wholesale prices worked to lower levels, averaging between 3 and 4 cents per pound below the levels of a month earlier. But this decline did not clear the market, as considerable supplies were left unsold.

There has been a distinct shift this year in the turkey market to a demand for smaller sized birds. In previous years large young toms commanded a premium over small toms and hens, but this differential has been gradually lessening until this year the smaller birds were quoted at 2 to 4 cents per pound premium. This unusual demand for small birds was probably caused by more families having their Thanksgiving and Christmas dinners at the home table and by the need for greater economy. This shift in demand, if continued, will require breeders and producers to pay more attention to quick maturity and finish of both hens and toms.

The carry-over in cold storage on January 1, 1932, was 10,300,000 pounds, as compared with 4,566,000 pounds on January 1, 1931. The current carry-over, however, does not compare so unfavorably with the 5-year average of 9,000,000 pounds, and was exceeded by the stocks on hand January 1, 1924, 1925, and 1927. The necessity for the trade to push the sale of turkeys, especially to the hotel and restaurant trade, will have the favorable effect of keeping turkeys before the public during the remainder of the winter season. There have been indications for a number of years of a tendency for turkeys to be consumed over a wider period, and the reserve supplies now on hand will enable this trend to be continued.

One factor contributing to the heavy carry-over this year was the increase in imports. In spite of an increase in the tariff rate to 10 cents per pound, imports were heavier than in 1930, and amounted to nearly 5,000,000 pounds. Most of these birds arrive before the Thanksgiving movement of the domestic crop begins. Although imports can not be ignored, the importance of foreign turkeys in our markets may be easily overestimated, since the 1931 imports represent only about 2 to 3 per cent of the total domestic production.

The outcome of the 1931 turkey-marketing season was favorable to producers considering the general conditions prevailing. The farm price of turkeys held up much better than the farm price of most other products. The absolute prices of turkeys touched pre-war levels but the 1931 relation of turkey prices to feed prices was higher than in any of the past 20 years except in 1921.

The outcome in 1931 may tend to stimulate excessive promotion of turkey production in 1932, with resulting disappointment to many who may be led to venture into this field and unsatisfactory returns to those already producing turkeys.

The improvements in method of commercial hatching and shipment of day-old poults, and in brooding with artificial means and under controlled sanitary conditions, make possible a very rapid expansion in production, such as could not have occurred a decade ago.

HAY AND PASTURE

Although the shift from timothy and other tame grass hays to alfalfa, clover, and other legumes has continued for several years, legume hays still offer better returns per acre because of the declining demand for grass hays. The drought of the last two years has greatly restricted the maintenance and expansion of tame-hay acreage, but further expansion of hay and pasture land seems evident owing to the increasing numbers of dairy cows, other cattle and sheep on farms, and the relatively high prices of hay in comparison with other feeds. The increase in the world acreage devoted to cash crops, and the resulting low prices, are making it relatively more difficult to obtain satisfactory returns from the production of cash crops on the more rough and hilly or other low-yielding lands of the United States. In many areas where there is a shortage of hay and pasture land, the better types of these poorer lands are being converted to the production of hay to advantage and many of the poorer types are reverting to pastures and forests.

The 1931 crop was light, being estimated on December 1, 72,366,000 tons compared with an average production of 84,491,800 tons for the 5-year period 1926 to 1930, inclusive. The production of clover and timothy in 1930 was reduced materially by the drought. In 1931, as a result of the killing out of a considerable acreage of the new seeding in 1930 because of lack of moisture, the production of these two classes of hay was again curtailed, being estimated December 1 at 27,594,000 tons compared with 27,570,000 tons produced in 1930 and 38,405,000 tons in 1929. Low yields of alfalfa in the Great Plains and Western States in 1931 were offset in part by the comparatively high yields east of the Mississippi River. The total production of alfalfa in 1931 fell to 20,914,000 tons compared with 22,871,000 tons in 1930 and 23,854,000 tons in 1929. Wild-hay production was estimated at 8,133,000 tons compared with 10,751,000 tons in 1930 and 11,194,000 tons in 1929. The 1931 crop of annual legume hay, especially in the Southern States was large because of increased acreage and good yields. In the Corn Belt States in 1931 the production of annual legume hay, most of which was soybean hay, was 69 per cent greater in 1930 and 65 per cent greater than in 1929. A total of 4,420,000 tons of annual legume hay was produced in 1931 compared with 2,708,000 tons in 1930 and 3,065,000 tons in 1929.

Because of the shortage of all other types of hay and the poor filling of heads of grain crops in some areas, principally in the Northwest and on the Pacific coast, the acreage of grains cut for hay was much larger than usual in both 1930 and 1931. Production of grain hay in 1931 was estimated at 4,645,000 tons compared with 4,145,000 tons in 1930 and 3,506,000 tons in 1929. About the usual quantities of millet, Sudan, sorgo, and other miscellaneous crops were cut for hay in 1931.

Despite the smaller hay crop in 1931, supplies remaining outside of the drought areas on December 15 were not far different from other recent years because of the unusually slow demand for hay so far this feeding season. This lack of inquiry has been due to several causes. The most important are: The low purchasing power of farmers, the high prices of hay when compared with prices of feed grains and commercial feedstuffs, the increase in hay acreage in the Southern States which heretofore have been large consumers of hay, and the unusually mild weather during the fall and early winter, together with ample fall rains which extended the pasture season much later than usual in many of the cattle and dairy producing areas.

Supplies of hay remaining for market in the principal timothy and clover producing States on December 15, 1931, were larger than for the last several years in all except a few North Central States where the crop was considerably below average. The outturn in the North Atlantic and Middle Atlantic States in 1931 was much larger than in 1930 because of more favorable weather.

But as the sections usually supplied with hay from the surplus from these States are also rather well provided with hay and forage the movement of timothy, clover, and grass hay from them has been the slowest on record.

The yield of alfalfa and prairie hay in the principal producing States was somewhat below normal in 1931. The usual southern and eastern inquiry for these hays has not developed so far. But because of the drought in the Dakotas and Montana there has been a heavier movement of both of these hays into those States from neighboring surplus-producing sections. Unusually dry weather was responsible for a somewhat smaller-than-usual crop and increased consumption of alfalfa and prairie hay in the States west of the Mississippi River. In the States east of the Mississippi River production was greater than last year but not sufficiently large to offset the reduced production in the Western States. For the country as a whole, remaining supplies of these two classes of hay are about equal to those usually on hand at the middle of the feeding season.

Hay prices have declined much less than the prices of most other home-grown feeds during the last two years. The average farm price of tame hay for the country as a whole on December 1 was \$9.06 or 26 per cent below the farm price on December 1, 1929. Wild-hay prices averaged \$6.18 or only 23 per cent lower than two years earlier. During the same period farm prices of wheat declined 59 per cent, corn prices declined 54 per cent, oats 46 per cent, and barley 35 per cent in spite of the unusually short crop in 1931. This smaller decline in hay prices in some areas largely because of short crops has materially increased the relative advantage of hay in comparison with most other crops and greatly increased its importance as a part of the cost of producing livestock and livestock products, when hay must be purchased. Because of the relatively high prices for hay, farmers in some areas are finding it advantageous to supply a larger part of their hay and pasture requirements on their own farms whenever possible.

The marked increase in the acreage devoted to hay in the Southern States from 1929 to 1931 is evidence that farmers are growing a greater part of their hay supplies than formerly. The acreage of tame hay in the Cotton Belt States increased nearly 600,000 acres or 12 per cent from 1929 to 1931. The present relation of hay prices to prices of other farm products in many areas is such as to encourage further expansion of the hay acreage especially in the rough and hilly or other low-producing areas where hay supplies are frequently short and the cost of producing cash crops is relatively high.

The increasing numbers of cattle and dairy cows and the declining numbers of horses are resulting in an increase in requirements for alfalfa, clover, and other legumes and a decrease in the need for timothy and other tame-grass hays. Although the percentage of legume hays being produced has increased, the farm price is higher than that for timothy hay. On December 15 the farm price of alfalfa hay was \$10.38, and clover \$9.70 compared with \$9.14 for timothy hay. In view of the higher prices and larger yields for legume hays this tendency to shift toward the production of legume hays is likely to continue.

The increase in the numbers of sheep, dairy cows, and other cattle on farms is also likely to result in an increase in the acreage devoted to pastures, especially in those areas in which pastures have been unusually short in recent years. In some areas, sweet clover is becoming of considerable importance in supplying the need for increased pasturage. Present low prices for cash crops have greatly increased the relative returns that can be made from rough and hilly lands by converting some of them into pastures.

FEED CROPS AND LIVESTOCK

The ratio of prices of feed crops as a group to prices of livestock and livestock products as a group, during the first few months of the feeding season from crops produced in 1931, were favorable to expansion of livestock numbers. The recent sharp declines in prices of livestock and livestock products in contrast with the comparatively stable feed-crop prices have resulted in present ratios which are less favorable. The probabilities are that the ratios will continue at about the present level throughout the remainder of the season. Feed-crop production in 1932 will probably be on a high level, but present indications are that the spring-pig crop will not be materially different from a year ago and both dairy cattle and other cattle numbers are on the increase so that the feed-crop-livestock ratios for the 1932-33 season are not likely to be greatly different from those for the present season.

Total production of the principal feed crops in most parts of the United States in 1931 was materially larger than in 1930, but was greatly reduced by drought in the northwestern part of the Corn Belt. Production in this area was smaller than a year ago. The combined production of corn, oats, barley, and grain sorghums in 1931 of 97,000,000 tons was 11.3 per cent larger than in 1930, but was 7.6 per cent below the 1925-1929 average. The acreage devoted to these crops increased 2.6 per cent from 1929 to 1930 and 2.3 per cent from 1930 to 1931. Production of hay in 1931 was 2.5 per cent less than in 1930 but was 15.6 per cent below the average production for 1925 to 1929. The acreage of hay cut in 1931 was about 1,000,000 acres less than in 1930, due to the sharp decline of 1,800,000 acres in the acreage of wild hay.

The number of livestock on farms on January 1, 1932, expressed as animal units was about 2 per cent larger than a year earlier. There was an increase of 9.4 per cent in the number of hogs, 2.4 per cent in the number of cattle and calves, and 2.2 per cent in the number of sheep and lambs, while horses and mules declined 3.7 per cent and 2.6 per cent respectively. The combined livestock population has tended to increase since January 1, 1930, with most of the increase occurring during 1931.

The production of corn, oats, barley, and grain sorghums, the principal feed grains in 1931, was 2,223 pounds per animal unit, compared with 2,038 pounds in 1930, and 2,294 pounds in 1929. Production of feed grains per animal unit, was below average for all three of these years, largely because of the small production of corn. The production of hay of 1,918 pounds per animal unit for 1931 was about 3.4 per cent below 1930 and 18.4 per cent below 1929. The level of prices of the 1931 feed crops from the beginning of the crop season to January 1 was 65 per cent of the pre-war (1910-1914) average, while the corresponding level of livestock and livestock-product prices was 83 per cent of pre-war. During last year the prices of livestock have declined from 101 per cent of the pre-war level to 70 per cent and livestock products from 112 per cent to 95 per cent, and prices of feed crops have declined from 87 per cent to 65 per cent. This greater decline in the prices of livestock has made feeding of livestock less favorable than a year ago.

At the present ratio of feed prices to livestock prices, only about normal feeding is to be expected during the remainder of the winter except in the northwestern part of the Corn Belt, where production of feed supplies was curtailed by drought. Owing to the shortage of supplies in this area, the ratio of feed prices to most kinds of livestock and livestock products is not favorable to normal feeding. This unfavorable ratio, together with the shortage of feed supplies, has resulted in considerable numbers of livestock being shipped out of that area at unusually light weights. Unless the remainder of the winter-feeding season should be unusually favorable in this area, there is likely to be some further liquidation of livestock numbers. For the country as a whole the late fall pastures and mild winter have permitted the economical use of feeds, and supplies of feeds in most areas on January 1 were about equal to average. With normal weather from now until the pasture season begins, there will probably be about an average carry-over of most feed crops on farms at the end of 1931-32 season.

Although the December, 1931, pig survey indicates little change in the spring pig crop, the increase in cattle numbers, especially dairy cows on farms on January 1, 1932, indicates that feed requirements for the 1932-33 season will be greater than in the 1931-32 season, especially if the winter in the 1932-33 season should be less favorable for feeding. This increased number of livestock, however, is likely to be at least off-set by increases in feed-grain production. A further increase in corn acreage in 1932 is likely, which with average yields would result in a considerable increase in corn production. Barley production in 1932 should also exceed the 1931 production which was materially curtailed by the drought. Oats production in 1931 was also below average, because of poor yields, so that with the same acreage in 1932 and average yields, production would be considerably larger than in 1931. Hay production has been materially below average for two years, because of smaller-than-average yields. In view of the outlook for larger production of feed crops next year, production per animal unit may be somewhat greater in 1932 than it was in 1931.

During the next few years, work-stock numbers will continue to decline and sheep numbers also will probably decline gradually, while cattle numbers will continue upward. Since these changes will tend to offset one another, the

equilibrium of livestock numbers and feed production will depend upon a stabilized hog production. Increased production of livestock outside the intensive feeding area may occur, however, regardless of the relative prices of feed crops and livestock because of the tendency toward a self-sufficient type of agriculture, stimulated by the very low level of prices of cash crops, such as cotton, tobacco, and wheat.

FEEDSTUFFS

Consumer demand for straight and commercially mixed feeds has been materially reduced owing principally to the larger supplies of feed grains for the 1931-32 season, compared with the previous season, and the restricted purchasing power of the dairy and livestock industries. This reduction has come in spite of the larger numbers of livestock this year. The smaller outturn of the main products, such as flour, cottonseed oil, corn sirups, and the like, has curtailed the production of feedstuffs including wheat feeds, cottonseed cake and meal, gluten feed and meal, respectively. The small supplies of domestic flaxseed and alfalfa hay have been factors in the limited production of linseed meal for domestic use and of alfalfa meal. Prices of feedstuffs (as a group) are lower than at any time since before the World War.

The combined tonnage of feed grain and feedstuffs supplies for the 1931-32 season is slightly below average but considerably larger than for 1930-31. The December 1 estimate indicated a corn crop of 2,557,000,000 bushels, which was about 500,000,000 bushels over the short 1930 crop, but less than the average production of the previous five years. This larger 1931 crop was supplemented by farm stocks November 1 of nearly 93,000,000 bushels, compared with 72,000,000 bushels last year. The oats supplies at the beginning of the season, August 1, was 1,197,000,000 bushels, compared with 1,354,000,000 bushels in 1930. Barley production was 199,000,000 bushels, compared with 305,000,000 bushels last year. Total supplies of barley, including stocks on farms and in markets on August 1 of 21,000,000 bushels, amounted to 220,000,000 bushels. Production of grain sorghums was 105,000,000 bushels, compared with 64,000,000 bushels produced in 1930. The quality of the 1931 corn crop was excellent, but the quality of oats and barley was poor, on account of the drought. Hay supplies for 1931-32 are slightly smaller than a year ago, the reduction being confined principally to the wild-hay crop. The December 1 estimate of all hay was 72,366,000 tons, compared with 74,214,000 tons for 1930.

Supplies of raw materials from which by-product feeds may be produced are plentiful, but the present depression has limited the output of the main products. As a result, production of by-product feeds has been reduced. Supplies of wheat mill feeds have been smaller on account of the reduced grindings of flour. The estimated outturn of wheat feeds at merchant mills during the last season ended with June, totaled 4,745,000 tons, compared with 4,895,000 tons in the previous season; 4,855,000 tons in 1928-29, and 4,834,000 tons in 1927-28. Wheat-alfalfa production, July through December, this season was about 7 per cent under that of the same period a year earlier. Screenings supplies in the Northwest are small because of the light carry-over and short spring-wheat crop, and because of the short Canadian spring-wheat crop, screenings supplies in that Dominion available for shipment to the United States were greatly reduced.

Large supplies of cottonseed are available this season. Cottonseed production in 1931 was estimated at 7,523,000 tons compared with 6,185,000 tons in 1930 and 6,590,000 tons in 1929. The mill carry-over of old meal on August 1 was unusually large and totaled 147,000 tons, which, together with the meal equivalent of the carry-over of seed at mills on the same date, made a total carry-over of about 159,000 tons. This compares with 76,000 tons on August 1, 1930. If a normal proportion of the large supply of cottonseed available for the 1931-32 season should be crushed, it would yield roughly about 2,650,000 tons of meal which, added to the mill carry-over, would make a total potential supply for the season of 2,809,000 tons. Last season 2,238,000 tons were available, and in 1929-30 about 2,327,000 tons. However, present indications suggest that less than the normal proportion of the cottonseed supply will be crushed. Normally about 85 to 90 per cent of the cottonseed supply available for crushing is processed annually, but in the previous severe depression of 1920-21 only 76 per cent was crushed. Crushings of cottonseed from August through December, 1931, totaled 2,958,000 tons compared with 3,135,000 tons in the same period last year despite a cottonseed crop 22 per cent larger than in 1930-31. The slower rate of ginnings this season compared with the last may also be a contributing factor.

Domestic supplies of linseed meal are very short, on account of the small flaxseed crop and reduced crushing activity. The 1931 flaxseed crop as indicated by the December 1 estimate was 11,018,000 bushels compared with last year's harvest of 21,240,000 bushels.

Wet-process corn grindings, from which gluten feed and meal are by-products, were of small volume last season, influenced by the limited outlet for the main products made from corn. About 66,600,000 bushels of corn were ground by this process in the period November, 1930, through October, 1931, compared with about 77,500,000 bushels in the same months of the previous season and 88,200,000 bushels in 1928-29. The November and December, 1931, grindings were about equal to those in the same months the year previous. Grindings in past years have fluctuated in general with changes in business activity. Most of the wet-process corn-grinding plants are in the North Central States, where corn supplies are large. Smaller corn-meal output has reduced hominy feed production.

The 1931 crop of soybeans was large, reflecting the increased acreage and better-than-average yields. Crushings have increased with the larger supply and markets are being found for soybean oil, but at low prices. As a result of this expansion in crushing activities, production of soybean meal has increased. However, they still remain only a small percentage of the total supply of high-protein concentrates.

Smaller supplies of alfalfa hay especially in the western area and relative cheapness of wheat mill feed have reduced alfalfa-meal grindings this season compared with the outturn for similar periods for recent years. About 301,000 tons of alfalfa meal were produced in the season ended May, 1931, 351,000 tons in the previous season, and 380,000 tons in 1928-29. Production of meal for June through December this season totaled approximately 131,000 tons, compared with about 210,000 tons in the same months of 1930, and 216,000 tons in this period in 1929. There has been an accumulation of meal at mills this season and mill stocks at the close of December were about 38,200 tons. Exports have been of very small volume.

Production of by-product feeds was relatively light in 1931 despite the plentiful supply of raw materials from the 1930 and 1931 crops from which they may be processed. In the 1930-31 season production of the principal feedstuffs, adjusted for the usual seasonal variation, advanced sharply early in the season from 98.6 per cent of average (July, 1924, to June, 1930=100) in July to 105.5 per cent in September, 1930. Production then receded sharply, reaching the season's low of 82.1 in March, 1931. Some recovery occurred in the spring months and the 1931-32 season opened with production at 96.1 per cent, in July, 1931. From that month to December the index fluctuated between 84.0 in August and 95.6 in November. The index for December was 90.4 per cent.

The decline in the consumption of feedstuffs has occurred in spite of increased livestock numbers. Livestock numbers were slightly larger at the close of 1931 than a year earlier. The horse and mule population is smaller, but milch-cow numbers are 3.5 per cent larger than a year ago. Cattle numbers on January 1, 1932, were 2 per cent greater than on that date in 1931. Hog production has been stimulated by relatively cheap feed. The increase in sheep numbers in 1931 over 1930 was about 2 per cent. The number of chickens on farms at the first of 1932 was about 5 per cent less than on January 1, 1931, according to preliminary returns covering farm flocks. No adequate data are available to show changes in commercial flocks.

The corn-hog ratio was above average during the fall months, but in November and December the ratio became less favorable. The United States corn-hog ratio based upon farm prices as of October 15 was 14.1 bushels, compared with the 20-year average of 11.2 bushels and showed the relative cheapness of corn compared with hogs. However, the December 15 ratio was 10.9 bushels. The narrow margin between the cost of feed and the price of butter widened in the fall of 1931, but became smaller at the close of the year and was smaller early in 1932. Chicken and egg prices were high compared with feed prices at mid-December, 1931, but the weakness in poultry-product prices in January, 1932, has made the relationship less favorable.

A number of factors have developed this season (1931-32) which have limited the consumption of feedstuffs and the movement of hay from surplus to normally deficit areas. Liberal supplies of feed grains and cheap wheat have caused heavy feeding of those products especially of wheat instead of commercial feeds on farms. The small farm income from the 1931 crops and limited

credit are also contributing factors. The fall and early winter was unusually mild and has been a factor in the reduced feed requirements so far in the 1931-32 season.

Prices of feed grains, hay, and feedstuffs are at unusually low levels, as are the prices of products into which these commodities may be converted. The December 1 farm price of corn for the United States was 36 cents per bushel, the lowest for that date since 1900. Oats and hay are extremely cheap compared with past years. The average United States farm price of oats on December 1 was 23.1 cents per bushel, wild hay, \$6.18, and tame hay \$9.06 per ton. Feedstuffs as a group are the cheapest since before the World War. The index of feedstuff prices during December, averaged 52.4 per cent of the 1926 level, compared with 78.6 per cent in December, 1930. This index stood at 49.3 per cent on January 26, 1932.

SOYBEANS FOR OIL AND MEAL

Prices obtained for soybeans of the 1931 crop were lower than those in any previous year of the last decade. Despite the physical adaptability of soybeans to many conditions of soil and climate the increase in acreage in 1931 was not so great as that in recent years. The decline in the prices of vegetable oils and their accompanying protein concentrates, and the resulting effect upon the price of soybeans, acted to reduce the advantage which this crop has had in many areas. Soybean oil competes with linseed, cottonseed, and certain other oils and the meal competes with linseed, cottonseed, and other protein feeds in the market. The present limited market outlet for soybean products should be kept in mind when judging of the probable returns from adding or increasing the cash-crop soybean acreage as against the other alternatives possible on the farm.

The commercial production of soybeans has increased rapidly since 1924. Of the 14,917,000 bushels of soybeans gathered in 1931, 87 per cent were contributed by six States—Illinois, Indiana, North Carolina, Missouri, Iowa, and Ohio. More than 40 per cent of the total was furnished by Illinois alone. The acreage of soybeans in 1931 was about five fold greater than 10 years ago. Acreage has grown very rapidly during the last few years, the annual increase being about 40 per cent in 1930 and 10 per cent in 1931. The increase has been greatest in the North Central States, especially in Illinois, where soybeans are produced mainly for oil and meal. Soybeans produced in North Carolina are mainly for seed purposes, primarily for distribution in the Cotton Belt where they are used for the production of forage. Yields of soybeans in the commercial producing States as a whole have averaged usually from 12 to 16 bushels per acre. Yields of 20-25 bushels have been recorded in central Illinois.

During the year ended September 30, 1931, 121,455 tons of soybeans were crushed in the United States, compared with 48,000 tons in 1930 and 26,400 tons in 1929. Stocks of soybeans at mills on September 30, 1931 were 14,800 tons compared with 3,490 tons on the same date in 1930 and 2,100 tons in 1929. Receipts of 1931 crop soybeans at mills during the period October-December, 1931, were somewhat less than the previous year, as indicated by records of cars inspected under United States Standards. The absence of "contract" soybeans in 1931 accounts in part for the slower movement, for shipments to apply on advance contracts in 1930 were rushed to the market as harvested.

The United States tariff on soybean oil was increased from 2½ cents to 3½ cents per pound, effective June, 1930. At the same time soybean cake and meal, formerly on the free list, received a duty of \$6 per ton. Mixtures of soybean meal containing small quantities of corn meal, wheat, and rice bran, previously admitted on a basis of 10 per cent ad valorem, were ordered taxed at \$6 per ton on and after January 7, 1931. The duty on soybeans is 2 cents per pound.

Owing to these additional tariff restrictions, imports of soybean oil, cake, and meal were much smaller during the year ended September 30, 1931, than in previous years. Imports of soybean cake and meal during this period were only 23,998 tons compared with 73,524 tons in 1930 and 69,530 tons in 1929. For the first time since the development of the soybean-crushing industry in the Middle West the domestic production of soybean meal has exceeded the imports. Only 5,364,000 pounds of oil were imported compared with 11,230,000 pounds in 1930 and 17,182,000 pounds in 1929. Stocks of crude oil on September 30,

1931, were 11,374,000 pounds compared with 10,000,000 pounds in 1930 and 9,010,000 pounds in 1929.

Soybean oil and meal in recent months have been in closer competition with cottonseed oil and meal than formerly. With an ample supply of linseed oil at relatively low prices soybean oil was forced to seek an outlet in industries using nondrying oils. The result was lower prices for soybean oil more in line with cottonseed oil. Crude soybean oil averaged 3.7 cents per pound, tank cars f. o. b. mills in December, 1931, compared with 6.7 cents in December, 1930, and 9.6 cents average in December of the years 1925-1929. On January 4, 1932, this price was 3.25 cents.

Affected by the drastic decline in price of cottonseed meal and to a less extent linseed meal, prices of soybean meal have ruled mostly within a range of \$20 to \$25 per ton f. o. b. mills since the spring of 1931. Distress stocks have in some cases been sold at less than these prices. Cottonseed meal declined from around \$26 f. o. b. southern markets in March, 1931, to \$11 to \$12 in October and was quoted mostly at \$14 to \$16 in December. Linseed meal averaged \$32.50 in March, 1931, declining to \$25.25 in early October, and has ruled mostly \$31 to \$32 since that date.

On the basis of these low prices for oil and meal, the prices offered growers for soybean at the beginning of the movement of the new crop in October were not encouraging. Old-crop beans sold as late as June, 1931, at 70 cents per bushel delivered mills. Bids were made for the new crop as low as 23 to 25 cents per bushel, basis United States No. 2 Yellow, f. o. b. country stations. Prices advanced later to 40 cents and in some cases 45 cents per bushel. In the meantime European mills became interested in the low prices and high quality of the crop and over 100,000 bushels were exported in November, 1931. Further exports, however, are contingent upon the outturn of oil and meal from these initial shipments and future prices of soybeans in the United States compared with those of oriental countries.

Despite reduced prices in Manchuria for the 1930 crop, the 1931 planted acreage was only slightly less than in 1930. Production in 1931 is placed at only 1½ per cent below the record crop of 1930. Manchurian markets are reported to be very slow and with the large carry-over from the 1930 crop the supplies are excessive. Political and military disturbances, however, have not interfered with the movement of the crop. December, 1931, prices in Manchuria were approximately 15 per cent lower than in December, 1930, and may reduce the 1932 acreage but the alternative cash crops in Manchuria are few and the special adaptability of soybeans to the soil and climatic conditions of that region together with new lands being brought into cultivation in north Manchuria may maintain the soybean acreage without substantial reduction.

The foreign situation respecting soybeans does not appear to have much direct bearing on the American situation at present, but the indirect effects are of considerable significance. Manchurian production becomes an inseparable part of the world-wide vegetable-oil supplies of Europe and because of varying degrees of interchangeability of soybean oil with other oils has an indirect bearing upon the prices in the United States of linseed and cottonseed oil, as well as lard and butter.

CLOVER AND ALFALFA SEED

Red and alsike clover seed production has decreased far more than hay production since 1929. If farmers this year bring their clover acreage up to that of 1929 and thus overcome losses sustained from the killing of stands by drought and heat during the last two years, available supplies of these seeds may well be expected to be absorbed. Sweetclover and alfalfa acreage for seed production were below those of recent years. Current supplies of sweetclover seed are close to normal planting requirements whereas those of alfalfa seed are somewhat in excess. Although prevailing prices of clover and alfalfa seed are about one-third lower than last year and two-fifths lower than the 5-year average, they have not declined relatively as much from pre-war prices as have many other agricultural products.

Sales of red-clover seed in the spring of 1931 were not so large as in 1930, but they were of sufficient size to draw upon the carry-over. Total production of red and alsike clover seed in 1931 was 73,326,000 pounds, compared with 91,386,000 in 1930 and with the near-record crop of 157,638,000 pounds in 1929.

Imports of red-clover seed for the fiscal year ended June 30, 1931, amounting to 2,805,300 pounds, were about 650,000 pounds larger than for the preceding year, but less than one-fourth as large as the average annual imports 1925-1929. No seed except 30,800 pounds of United States-grown seed that had been shipped to England, has been imported since May, 1931. Export from the United States have been the largest since 1927. They amounted to 670,304 pounds in 1931, compared with 535,472 pounds in 1930, and 523,535 pounds in 1929.

Foreign competition in red-clover seed hardly seems to exist at present. The European crop was relatively small, and of inferior quality. There will be but a small surplus for export at prevailing prices. In Europe prices are about 4 or 5 cents a pound lower than in the United States. This, however, is more than offset by the tariff of 8 cents a pound. Current wholesale prices in the United States are lower by about \$9.75 per 100 pounds (36 per cent) than a year ago on a corresponding date and by \$13.15 (44 per cent) than the 5-year average, 1926-1930.

Available supplies of alsike-clover seed are much smaller than usual because of the small quantity of old seed carried over, the decreased production in 1931, and the decline in imports. These factors, however, were offset in part by a reduction in sales last year as well as in other recent years. The 1931 crop was the smallest since 1928 and imports for the last fiscal year dropped to the lowest point on record, amounting to only 93,800 pounds, compared with 7,220,300 pounds the preceding year and about 7,600,000 pounds, the average annual imports for the five years 1925-1929. Large imports are not expected during the next six months or more because the Canadian crop was even smaller than the short crop of 1930. Current wholesale prices are lower by about \$7.80 per 100 pounds (33 per cent) than a year ago and by \$13.25 (46 per cent) than the 5-year average.

Production of sweetclover seed in 1930, amounting to 45,600,000 pounds, and in 1931, amounting to 50,900,000 pounds, was more nearly in line with planting requirements than for several years. Acreages in 1930 and 1931 were about equal but were 20 to 40 per cent smaller than the acreages in 1925-1929. Chiefly because of the decreased production, the carry-over is the smallest in seven years or more. Imports, after declining for five years, reached the vanishing point in 1931. Sales in the spring of 1931 were slightly larger than those in 1930. Current wholesale prices are lower by \$2.85 per 100 pounds (32 per cent) than a year ago and by \$3.45 (36 per cent) than the 5-year average, 1926-1930.

Alfalfa-seed production in 1931, amounting to 51,200,000 pounds, was about 25 per cent smaller than in 1930, when the largest crop since 1926 was produced, and 15 per cent smaller than in 1929. Production was smaller than in 1930 in Montana, South Dakota, North Dakota, Idaho, Wyoming, Colorado, Kansas, Oklahoma, Arizona, Texas, and Wisconsin, but larger in Utah, California, Oregon, Nebraska, New Mexico, and Michigan. Greatest decreases occurred in the more northern producing districts where the drought was more detrimental to the crop than elsewhere. Sales in both spring and fall were smaller than in 1930. Exports fell off sharply, amounting in 1931 to 218,044 pounds, compared with 832,965 pounds in 1930 and 825,830 pounds in 1929. Imports were unusually small, no seed having entered the United States during the second half of 1931. Stocks are more than sufficient to take care of normal requirements. Current wholesale prices for common alfalfa are lower by about \$7.85 per 100 pounds (33 per cent) than a year ago and by about \$6.60 (30 per cent) than the 5-year average. Grimm alfalfa prices are lower by about \$11.65 (33 per cent) than a year ago and by about \$15.50 (40 per cent) than the 5-year average.

POTATOES

With intentions to make only a slight decrease in acreage in 1932, with fair chances of a better growing season than those of the last three years, potato growers in the late-producing States face another season of increased supply with no compensating improvements in demand conditions.

Total production in 1931 amounted to 376,000,000 bushels, or about an average crop compared with 333,000,000 bushels in 1930 and 329,000,000 bushels in 1929. The increased volume was due chiefly to an increase in acreage from 3,038,000 acres in 1930 to 3,382,000 acres in 1931. Yields averaged about 110 bushels to the acre in 1929 and 1930 and 111 bushels in 1931 compared with a record of 127 bushels in 1924 and prospects for an average of about 120 bushels under normal weather conditions.

In the 11 Southern States, acreages were increased from 382,000 to 463,000 in 1931. Yields also averaged somewhat higher (87.5 bushels in 1931, 84.3 bushels in 1930) and production was therefore considerably higher, amounting to 40,618,000 bushels in 1931 compared with 32,204,000 bushels in 1930 and 27,945,000 bushels in 1929. This large increase contributed to the lower potato prices during the first part of 1931, in contrast with the higher prices of 1930 which were partly sustained by the relatively small supplies of both early and late crops of that year.

The seven intermediate States (New Jersey, Delaware, Maryland, Virginia, Kentucky, Missouri, and Kansas) produced 37,160,000 bushels in 1931 compared with 36,328,000 the previous year. The acreage was nearly 8 per cent larger than in 1930, but yields were lower, averaging 107 bushels compared with 113 bushels the year before.

In the 30 late States, production increased from 264,678,000 bushels in 1930 to 298,470,000 bushels in 1931 owing chiefly to an increase in acreage since the average yield of 116 bushels per acre was only slightly higher in 1931 and the average of 113 bushels in 1930.

Certified seed potatoes in the United States last year were produced in one-third larger quantity than in 1930, mainly through an increase in acreage. The production of about 8,700,000 bushels exceeded the 1929 production somewhat but was about one-sixth smaller than the record quantity certified in 1928. There has been dull demand for seed, probably because of the low price being received for table stock. Prices received by growers for certified seed, last fall, averaged about 60 cents per bushel or down to the 1928 level, compared with approximately \$1.25 in 1930 and \$1.65 in 1929. These low prices may encourage the use of good seed, particularly in areas where its use is essential to good yields.

Prices received by producers of late-crop potatoes during the fall months of 1931 were about half of those received a year earlier, and reflected the increase in total supply of about 13 per cent, a decrease in prices of foods in general of about 12 per cent and a slower rate of consumption. On December 15, the average United States farm price which includes prices in deficit as well as surplus areas, was only 45.7 cents per bushel compared with 89.8 cents per bushel a year earlier or a decline of about 50 per cent. In the selected surplus-producing sections, prices declined even more except in the West. F. o. b. shipping point prices per 100 pounds for U. S. No. 1 potatoes during December, 1929, 1930, and 1931 averaged as follows: At Presque Isle, Me., \$2.01, \$1.25, and \$0.44; at Rochester, N. Y., \$2.40, \$1.54, and \$0.68; at Waupaca, Wis., \$2.11, \$1.24, and \$0.59; and at Idaho Falls, Idaho, \$1.92, \$0.93, and \$0.69, respectively.

In the two eastern areas prices in December, 1931, were 81 to 86 cents lower than in December, 1930, in Wisconsin they were 65 cents less, and in Idaho only 24 cents less, the smaller decline in Idaho being due to a smaller 1931 production in 10 Western States compared with that of 1930 and in contrast with increases in most of the other late Northern States.

The unusually low prices this season have tended to restrict sales by farmers. These restricted sales in turn tended to check the price decline and to promote some advances during the first part of January. The 18 surplus States which produced 261,000,000 bushels in 1931 compared with 231,000,000 bushels in 1930, shipped only 84,000 cars so far this season (through January 16) compared with 104,000 cars in the previous season of smaller supply. These shipments do not include movement by truck, but it is clear that the relatively small volume marketed by rail so far this season indicates a larger than normal proportion of the year's supply available for marketing during February-June, 1932. These forthcoming supplies will be important factors in determining the course of late-crop prices for the remainder of the season and will compete with the southern early crop.

The total United States potato acreage in 1932 is likely to be only slightly lower than that of 1931. Since the decline in potato prices has been no greater than the decline in other farm products during the past year—if growers carry out their intentions as reported to the Department of Agriculture on January 1—the total United States potato acreage in 1932 is likely to be 1 or 2 per cent smaller than in 1931. The intended changes in acreage vary considerably between different groups of States and between the commercial and noncommercial or farm crop in the early and intermediate States.

The intended decrease in total acreage in the 11 early Southern States amounts to 11 per cent. This is expected to occur through a 31 per cent decrease in the commercial acreage for shipping purposes while the remaining

acreage, largely for home or local supplies, is expected to be increased about 2 per cent.

In the seven intermediate States an intended decrease of 2 per cent is indicated for the total acreage. A material decrease is expected in Virginia and some reduction in Kansas. These are partly offset by increases in New Jersey, Delaware, Kentucky, and Missouri. Maryland reports no change. This intermediate group plans a reduction of 13 per cent in the commercial acreage, but an increase of 5 per cent in the farm-crop acreage.

The reduction planned in the commercial acreage in the early and intermediate States would result in an acreage slightly below the reduced acreage of 1929. The reports from commercial growers in these States show a greater degree of uncertainty concerning plans for the approaching season's plantings than has prevailed for several years. Although expenses will average lower on many important items entering into the cost of producing potatoes, credit is restricted and the difficulty of securing the usual finances to grow a crop is reflected in a majority of the reports.

The reports from the 18 surplus late-potato States indicate plans for only a slight decrease in the 1932 acreage. The most marked decreases planned are, in general, reported from commercial districts located far from markets.

The 12 other late States (the five New England other than Maine, West Virginia, Ohio, Indiana, Illinois, Iowa, New Mexico, and Arizona) which produce potatoes mainly for home or local consumption, show intentions to increase their acreage 4 per cent. The increases in the five Central States more than offset the minor decreases in the five New England States outside of Maine.

Changes in yields per acre from the low yields of the last three years are likely to be the chief factor in determining the volume of the 1932 potato crop. Hot and dry conditions in certain eastern and central areas placed the 1931 potato crop under a handicap during the early part of the growing season, which was not completely overcome by beneficial rains and a generally favorable finish to the growing period. In the West, a water shortage held potato yields below the quantity usually to be expected in some of the States, especially Colorado and Utah. As a result of these conditions, the estimated average yield for the country as a whole was 111.3 bushels per acre, making 1931 the third successive year of comparatively low yields. In each of the past three seasons, the yield has been close to 110 bushels. Favored with only average weather conditions, crops of 120 to 123 bushels per acre could ordinarily have been expected. Considering the acreage shifts that seem likely to occur, and barring the experience of unusual weather hazards in 1932, it is not unreasonable to anticipate a yield the coming season at least 10 bushels greater than in 1931.

The considerable acreage reductions now being planned in the Southern States are likely to result in an improvement in market conditions. Ordinarily such reductions could be expected to produce pronounced improvements, but this year the large carry-over from the 1931 late-potato crop, together with the continued low level of consumer incomes are likely to act as restraining factors.

The acreage and yield prospects for the main late-potato crop in the Northern States suggest a somewhat larger crop in 1932 than in 1931 and a continuation of approximately 1931-32 market conditions unless a material change takes place in consumer incomes and in the level of food prices in general. The 1932 potato crop will probably be produced with a much smaller cash outlay, for prices of material and labor are now lower than a year ago.

SWEETPOTATOES

Farmers in the Cotton Belt planted a greatly increased acreage to sweetpotatoes in 1931, as is usual when the price of cotton is low. In most of the Cotton Belt States, however, yields per acre of sweetpotatoes were far below average as a result of adverse growing conditions, so the total crop was below that of 1929. The crop was moving from the farms in December at the lowest prices for that month in 30 years but, except in the commercial area from Virginia to New Jersey where yields were unusually heavy, the prices were not unfavorable compared with the prices being received for other farm products of importance in the South.

So large a percentage of the acreage of sweetpotatoes in the Southern States is in fields of less than an acre that no statistics on either acreage or yield per acre can be relied upon implicitly. The estimates indicate, however, that the area of sweetpotatoes in the United States in 1931 was 778,000 acres, an increase of 20 per cent over the 648,000 acres harvested in 1930.

The yield per acre averaged 80.9 bushels compared with 82.8 bushels in 1930 and 100.6 bushels in 1929. Although the yield per acre was less than it was last year, production was increased from below 54,000,000 bushels to nearly 63,000,000 bushels or 17 per cent. With other food prices also lower, the December 1 farm price was 37 per cent below that of a year earlier.

Looking ahead, southern farmers are faced with a need to produce on their own farms an even larger share of the food required by their families than they produced in 1931. In most cases this will mean an acreage of sweetpotatoes large enough to supply family needs even though yields should again be low. Because of this situation southern farmers who grow sweetpotatoes for sale face the probability of substantially increased local supplies pressing on southern markets and there are indications that some southern growers are planning to shift a larger part of their acreage to varieties that are suitable for shipment to northern markets.

In the four States along the Atlantic coast from Virginia to New Jersey, where sweetpotatoes of the dry type are grown chiefly for shipment to northern markets, the acreage planted has not been affected by the price of cotton and returns have depended largely on local production and on the demand in northern markets. In these States the acreage of sweetpotatoes was increased from 63,000 in 1929 to 65,000 in 1930 and to 70,000 in 1931, and production was increased from 9,093,000 bushels in 1929 and 5,555,000 bushels in 1930 to 10,113,000 bushels in 1931. Although shipments were heavy, this 1931 production was more than could be marketed to advantage and prices reported as being paid to Virginia and Delaware growers in December were lower than has been reported from any other States in any December since the Civil War. In view of the exceedingly low price and the prospective increase in competition from the Southern States some reduction in the acreage planted in Virginia, Maryland, and Delaware in 1932 is to be expected.

COMMERCIAL VEGETABLES

The commercial shipping vegetables, with only a few exceptions, brought lower prices during the 1931 marketing season than in 1930. Following the tendency exhibited by the low general level of food prices, unusually low prices were received even for some vegetables and truck crops that were produced in smaller quantity than the year before. The decline in vegetable prices, as a whole, however, has not been so sharp as that shown by field crops in general. There is evidence that, because of this situation and the high gross returns per acre on vegetables, growers look upon vegetable production as holding inviting prospect for expansion or as a relatively profitable alternative for other cash crops that have paid disappointingly low returns the last few seasons. Before shifting from these crops to vegetables, growers should give careful thought to the higher costs and greater risks usually involved in the production and marketing of the perishable crops.

Appraisal of the prospects for vegetable producers in any season is rendered difficult by the various uncertainties that are peculiarly associated with production of these perishable and highly unstable crops. Unusually favorable weather conditions, or the reverse, may so quickly change the crop situation, or even affect the attitude of the consuming market toward some products, that earlier prospects will be completely upset. Marked variations in quality or grade and conditions affecting the rate of harvesting and marketing of the various crops are elements the influence of which can not be foreseen.

In general, it does not seem likely that the competition of supplies from various producing areas will be less in 1932 than in 1931 and for some parts of the marketing season it may be materially increased. In 1931, yields per acre averaged somewhat lower than usual for most of the vegetables, yet rather more-than-the-usual quantities were left unharvested because of market conditions. As usual, surplus production was most serious for vegetable crops planted on a largely increased acreage or for which the yields per acre were unusually heavy; in general, overproduction was most in evidence in areas at some distance from consuming markets. The commodities which were most seriously in excess of market requirements in 1931 were early beets, cucumbers, and onions, and early and midseason cabbage, carrots, and watermelons. Prospects for 1932 are affected by the lower level of food prices now prevailing and by the increased attention being given to home gardening both around urban areas and on farms. The demand for certain vegetables and vegetable fruits, furthermore, may not be quite so great as in 1930 and 1931 when it appears to

have been increased by the abnormally hot weather during part of the consuming period.

Reasonable diversification of vegetable crops and production at lower unit cost, which are important considerations in any season, will be especially important in 1932. Under present conditions, growers located nearest to the markets have greater advantage than usual. With food prices lower and freight rates relatively high, the margin between market prices and shipping costs has been materially decreased. This greatly reduces the distance that the lower quality or the lower priced vegetables can be shipped. With cheaper labor and other reduced expenses, cost of truck transportation of vegetables has decreased more than freight rates which gives greater advantage to areas within trucking distance of their market and is causing shifts between producing areas.

For the first time since 1925, there was a slowing-up in the acreage expansion of commercial shipping vegetables in 1931. In the four years from 1926 to 1929, the commercial acreage of 20 truck crops (not including early potatoes and strawberries) has shown successive annual increases ranging from 5 to 9 per cent. In 1930, there occurred an unusually sharp increase of 12 per cent, but in 1931 the increase amounted to less than 3 per cent.

In 1931, the value per acre of the 20 truck crops combined, fell 17 per cent below the 1930 value, which in turn was 20 per cent lower than that of 1929. Although these reductions were sharp, amounting to a total of 34 per cent in two years, the general field crops have shown a much more serious decline in acre value during the same period, averaging 50 per cent. The nearest approach to this great decline in the major vegetables occurs in cabbage, with a 51 per cent reduction; tomatoes with 49 per cent; watermelons, 44 per cent; and lettuce, 43 per cent. In comparison, potatoes show a 2-year decline of 68 per cent in acre value; dry beans, 60 per cent; cotton, 55 per cent; tobacco, 46 per cent; and peanuts, 44 per cent.

The generally lower prices received by growers in 1931 are undoubtedly causing growers to plant more moderate acreages for the 1932 season. On the early season acreage of 15 of the crops, growers' reports on actual or intended plantings indicate that the 1932 acreage has been or will be decreased about 2 per cent. In 1931, the early crops represented in these reports had nearly one-fourth of the estimated United States acreage of the 20 commercial truck crops. Among the early crops for 1932, important increases are shown for asparagus, beans, cauliflower, onions, and spinach; the major decreases are reported in cabbage, cucumbers, lettuce, and tomatoes.

WINTER VEGETABLES FROM CUBA AND MEXICO

Winter vegetables, such as tomatoes, green peas, peppers, and eggplant, have continued to come into the United States from Mexico and Cuba in about the usual volume the past few seasons. There have been some shifts among the commodities, with green peas, for example, assuming relatively more importance in the imports from Mexico. Such declines as have taken place in shipments in the last season or two can probably be attributed largely to the depressed market conditions in the United States. Because of the increased tariff, shippers of vegetables into the United States markets are apparently paying more attention to quality.

Plantings of early vegetables in Mexico for 1931-32 were apparently somewhat less than in 1930-31, but the acreage in Cuba was about the same. On the Mexican west coast a cold wave in January is reported to have caused considerable damage to the growing vegetables. Shipments of vegetables from these countries to the United States thus far this season (1931-32) have been running considerably behind those of last season, largely because of the lateness of plantings in Mexico and the replantings that were necessitated in Cuba as a result of damaging rains in November.

CANNING VEGETABLE CROPS

The acreage of nine vegetable crops grown for commercial canning or manufacture, following heavy annual increases of 16 per cent or more in each of the three seasons from 1928 to 1930, was reduced by 19 per cent in 1931. The canning crops did not show so great a reduction in acre value as the shipping vegetables in 1930, but declined nearly one-fourth in 1931,

with a total decline of 30 per cent since 1929. For every one of the canning vegetables except sweet corn, the 1931 production was below that of 1930. The gross tonnage of the nine crops was 27 per cent less than the exceptional tonnage produced in 1930 and 20 per cent less than in 1929, but about 5 per cent above the 1928 tonnage. Compared with the 1930 production, the greatest reduction occurred in tomatoes with a crop 42 per cent smaller. Decreases for a number of the other important crops were: Peas, 39 per cent; cabbage, 37 per cent; asparagus, 33 per cent; snap beans, 24 per cent; and cucumbers, 22 per cent.

Reports of the United States Department of Commerce on the 1931 pack of several important products indicate reductions of 44 per cent in canned tomatoes, 40 per cent in peas, 28 per cent in green beans, and 21 per cent in wax beans, compared with the 1930 pack of these commodities. The pack of canned corn, on the other hand, shows an increase of 24 per cent.

No extensive data are available on the stocks of canned goods upon which to appraise the general situation with respect to present holdings compared with previous years. A recent report issued by the Department of Commerce gives the comparative holdings of a representative group of canners and distributors but only for the two dates, October 1, 1931, and January 1, 1932. The reporting canners indicate a disappearance of October 1 stocks during the last quarter of the year amounting to 27 per cent of corn, 22 per cent of peas, and 19 per cent of green and wax beans. Canned-tomato holdings increased tremendously during the quarter as a new pack has gone into storage since October 1. During the same quarter, distributors' stocks of canned peas declined 17 per cent and green and wax beans 9 per cent, while their stocks of canned tomatoes increased 10 per cent and corn 4 per cent.

CABBAGE

Although the 1931 cabbage acreage was reduced about 2 per cent below the record of 1930, and the production was lower than in either 1929 or 1930, prices averaged about 46 per cent below those of the previous two seasons, dropping to the lowest point on record. The exceptionally low prices were largely a reflection of the restricted buying power of consumers, although heavy market supplies during certain parts of the early season contributed materially to the decline. Principally as a result of the extremely low returns obtained from the crop, decreases are being made in the early and second early acreage for 1932. Further decreases will probably also occur in some of the intermediate and late States.

Production of domestic and Danish types of cabbage in the late States last season amounted to less than 500,000 tons compared with about 615,000 tons in 1930 and a little more than 550,000 in 1929. Acreage had been decreased about 15 per cent, Wisconsin making most of the reduction. The production of domestic-type cabbage, which includes the major portion of the sauerkraut crop, amounted to 236,400 tons, the smallest crop since 1921. Although the crop was 27 per cent smaller than in 1930, prices averaged 11 per cent lower in 1931. The late Danish or storage crop of cabbage, at 261,300 tons, was 10 per cent smaller than the 1930 crop but prices received by growers up to about December 1 were nearly one-fifth lower than the year before.

According to the reports of growers and dealers on January 1, 1932, the holdings of Danish cabbage on that date amounted to 62,242 tons, compared with stocks amounting to 61,126 tons on January 1, 1931. New York had more than its usual proportion of the January stocks owing to the large crop produced and to the light crop in Wisconsin in 1931. Warm weather and the poor quality of much of the cabbage placed in storage in New York is reported to be causing an unusually heavy shrinkage.

The fall crop of cabbage in South Carolina and Norfolk section of Virginia, starts the movement of the new crop each year with marketings usually from November to February. It is only within recent years that the crop began to take on any importance as a part of the movement during the fall and winter months, acreage increases in the fall of 1929 and 1930 more than doubling the production compared with previous years. For the 1932 crop, the plantings last fall were reduced 35 per cent to 650 acres.

The early States (California, Florida, Louisiana, and Texas) reached a record of 40,600 acres in 1931, or 41 per cent larger than the year before. With exceptionally good yields in Florida and Texas, where the principal acreage increases occurred, the production amounted to 247,000 tons. This exceeded

the previous record crop of 198,500 tons in 1929 and was nearly four-fifths larger than the 1930 crop, upon which exceptionally good returns were secured. Prices fell to an extremely low level and nearly one-fourth of the crop was left unharvested. Acreage for 1932 was reduced 14 per cent, but it is still about 12 per cent larger than the average acreage of the previous five years.

In the second-early States (Mississippi, Alabama, Georgia, the Carolinas, and eastern Virginia) acreage was reduced slightly in 1931 but very good yields were obtained. Production from the 13,300 acres in this group in 1931 was 7 per cent above the low production of 1930, but 16 per cent below the average production for the preceding 5 years. Prices to growers were, however, the lowest on record.

A 9 per cent decrease in acreage occurred in the intermediate shipping group which includes most of the other Southern States and Washington, New Mexico, Missouri, Iowa, Illinois, New Jersey, Long Island, and areas in Ohio and Virginia. Yields were larger than in 1930 but production was slightly lower. Prices were at an unusually low level.

LETTUCE

Lettuce acreage, which has increased more than fourfold during the past decade, was again expanded in 1931 but the increase was much less pronounced than has been the case during recent years. Yields were smaller by 7 per cent and production was lower than that of 1930 by 5 per cent but the average value per acre declined 22 per cent. Increases in acreage in the early and the late groups of States more than offset decreases in the second early and intermediate districts and the total 1931 acreage of about 177,000 acres was nearly 3 per cent above the previous record acreage of 1930.

Of the States producing Iceberg-type lettuce, acreage increases in 1931 were most marked in the earliest crop planting in California and Arizona and in the late crop in California, whereas decreases were most noticeable in the second-early districts of Arizona and in the Colorado late acreage. Of the Big Boston-type producing districts, the most pronounced increase occurred in the early acreage in Florida and the late acreage in New York was reduced about 7 per cent from the level of the previous year.

The yield per acre was low in 1931 and, in the early, second-early, and late States, was well below average. The total production of 18,600,000 crates was about 5 per cent below the 1930 production and about 8 per cent below the 1929 production.

Demand for lettuce in 1931 was less than in previous years and prices to growers for the country as a whole averaged about 16 per cent below 1930 prices notwithstanding the reduced crop. Price declines were most marked in the early lettuce-growing districts in Arizona and Florida but prices generally showed a downward tendency in most producing districts.

The early 1932 lettuce acreage (Arizona winter crop, Imperial Valley of California, Florida, and Texas), according to December estimates, is 48,850 acres, representing a decrease of 21 per cent, or about 13,000 acres below the acreage of the previous season. Some decrease is also indicated for the second-early States in recent reports.

TOMATOES

The harvested acreage of tomatoes grown for market in 1931 was the highest on record, with 160,810 acres as compared with the previous high mark of 156,350 acres grown in 1930. Owing to the unfavorable growing conditions in some sections the yield per acre was the lowest in the last 14 years, decreasing from an average of 108 bushels in 1930 to 103 bushels in 1931. This lower yield resulted in a 2 per cent decrease in total production in 1931.

The average price received by growers was the lowest in years, averaging about one-third less, for the country as a whole, than the average price received in 1930. The 1931 yields were noticeably reduced by unfavorable growing conditions; otherwise marketing difficulties might have been even greater. The business depression, which was reflected in lower commodity prices and restricted purchasing power, was the largest factor contributing to the low prices received for the crop. The total estimated farm value of tomatoes grown for market in the second-early, intermediate, and late States together, decreased from about \$15,800,000 in 1930 to \$12,700,000 in 1931.

Total car-lot shipments of fresh tomatoes during 1931, exclusive of the movement by truck, amounted to 27,591 carloads as compared with the previous 1930 record of 34,050 carloads, or a decrease of about 19 per cent. In the heavier producing States of California, Florida, Mississippi, Tennessee, Indiana, and New Jersey, shipments were decreased sharply. Texas and Ohio showed increases, Texas alone shipping 8,772 cars in 1931 as compared with 7,538 in 1930.

The fall-crop acreage in Florida and southern Texas for the 1932 season was reduced about 50 per cent from that harvested the previous season. The acreage of the late-winter crop in the South Florida district is reported to have been decreased about 25 per cent this year. The crop has been favored by very good weather conditions.

In the other early sections of Florida, which usually begin shipping the latter part of April, the acreage was reduced from 19,000 acres in 1930 to 15,400 in 1931. Plantings in the lower valley of Texas were increased slightly in 1931 to 10,300 acres and in the Imperial Valley of California to 1,600 acres. Total production in these three areas was 2,149,000 bushels, or about equal to the average of the two previous seasons. The Florida and Texas crops were retarded by the cool spring, and the active shipping season was delayed until the latter part of May, resulting in greater overlapping with movement from the second-early States. Prices to growers in this early group averaged less than one-half of the prices received in 1930.

Acreage in the second-early group, comprising the States of Georgia, Louisiana, Mississippi, South Carolina, and parts of Texas other than the lower valley, continued upward to 1931, to 39,050 acres compared with 34,130 in 1930. East Texas increased its acreage from 12,400 acres in 1929 to 19,500 in 1930, and to 25,000 in 1931. The Mississippi plantings also increased slightly to 9,600 acres but light yields resulted in rather a short crop for that State. Acreage decreases occurred in Georgia and South Carolina. Total production for this group was slightly less than the record crop of 1930, but prices averaged 20 per cent lower than the low level of the previous year.

In the intermediate States comprising Arkansas, Tennessee, Missouri, Virginia, Maryland, New Jersey, North Carolina, parts of California and Ohio, and one county in Illinois, the 1931 acreage was increased to 39,120 acres, or 10 per cent more than the large acreage of the previous year. Yields were rather light but production almost equaled the previous record crop of 1929, and prices were the lowest in years.

In the late States—Colorado, Delaware, Indiana, Iowa, Kentucky, Michigan, New York, Oregon, Pennsylvania, Utah, Washington, northern California, and parts of Illinois and Ohio—the 1931 acreage of 31,670 acres was slightly larger than the previous high acreage of 1930. With lower yields, production amounted to about 4,000,000 bushels, or practically the same as in 1930. A sharp decrease in production in the northern district of California was offset by increases in several other States. The average farm price for this group was about 13 per cent lower than the 1930 average, only California and Oregon showing higher prices than in 1930.

The late fall acreage in the southern district of California was reduced from 10,500 acres in 1930 to 8,500 in 1931. With lower yields, production was decreased about 36 per cent, and the price to growers was about 37 per cent greater than in 1930.

The estimated production of tomatoes for manufacture for the 1931 season was 1,014,600 tons, compared with 1,745,600 tons in 1930 and with an average of 1,300,000 tons the previous five years. The light production in 1931 was brought about by a 29 per cent reduction in acreage from the peak acreage of 1930 and by the lowest average yield per acre in 14 seasons. The pack of canned tomatoes in 1931, as reported by the United States Department of Commerce, was 9,573,025 cases of No. 3 cans, compared with 16,997,799 cases in 1930, when the pack was the second-largest on record. No data are available on the pack of other tomato products, such as juice, paste, pulp, puree, catsup, soups, sauces, etc. Reports from canners during the last two seasons have indicated that nearly half of the total tonnage of tomatoes for manufacture was used for tomato products other than canned whole tomatoes.

Notwithstanding the fact that a large portion of total production is always utilized in these other tomato products, a close relationship has existed in past years between the total estimated production of tomatoes for manufacture and the size of the pack of canned tomatoes. According to this relationship, an average yield per acre (4.22 tons for the 5-year period 1926 to 1930)

on the 1931 acreage would normally have resulted in a pack of canned tomatoes of approximately 12,000,000 cases. The average pack for the five years preceding 1931 was about 12,455,000 cases. Should no change be made in the 1932 acreage of tomatoes for manufacture, and should average yield per acre be obtained on this acreage, the pack of canned tomatoes in 1932 would probably be near this average pack. The small production in 1931 has placed canners in a more favorable position to dispose of their surplus stocks held over from previous seasons. With the possibility of increased yields and the fact that more open-market tomatoes may find their way into the canneries in 1932, excessive plantings in 1932 could easily reverse this situation.

No definite data are available on total stocks of canned tomatoes on hand January 1, 1932. A quarterly summary of the holdings of a certain number of representative canners and distributors was begun on July 1, 1931, by the Food-stuffs Division of the United States Department of Commerce, with the purpose of showing the trend of disappearance by a quarterly comparison of the holdings of identical firms. A report by that department shows that 280 representative canners held a total of 3,765,000 cases of old and new crop tomatoes on January 1, 1932, and 1,572,000 cases of old-crop tomatoes on October 1, 1931, the increase being due to the inclusion of the new pack in the January 1, 1932, holdings. The holdings of 513 distributors consisted of 1,550,000 cases on January 1, 1932, compared with 1,407,000 cases on October 1, 1931. The usefulness of this type of report will not be fully established until a more complete series of quarterly reports has been compiled.

ONIONS

On a harvested acreage 8 per cent below that of 1930, the total production of onions (early, intermediate, and late crops) in 1931 was 27.5 per cent below the peak production of 1930. The average yield per acre was the lowest on record because of unfavorable growing conditions for the late crop. Up to December 1, 1931, the average price received by growers was 79 cents per bushel, compared with a seasonal average price of 51 cents per bushel in 1930. For the crop in 1928, which was 9 per cent larger than that of 1931, the average price to growers was \$1.19 per bushel.

In the early Bermuda and Creole onion States—California, Louisiana, and Texas—which in 1931 produced 21 per cent of the total onion crop, the acreage now planted for harvest in 1932 is estimated at 24,050 acres, or an increase of 23 per cent over the 1931 acreage and 14 per cent over the 5-year average for the period 1926 to 1930. Of this total, Texas has about 21,000 acres of which more than half is planted on dry-land areas. Much of the dry-land planting is late and the January condition of the crop, although good, will not determine the final outcome. The average yield per acre will depend more than ever upon rainfall in the dry-land areas. Production of early onions in 1931 was slightly below that of 1930, and prices received by growers averaged 77 cents per bushel compared with 75 cents in 1930 and with \$1.06 per bushel for the peak production in 1929. Storage stocks of late onions on January 1, 1932, were only 50 per cent as large as those of a year ago and were the lightest in the last five years. With storage holdings at these exceptionally low levels, the marketing of the first shipments of Bermuda and Creole onions should be somewhat favored.

In the intermediate shipping States—California, Iowa, Kentucky, New Jersey, north Texas, Virginia, and Washington—which market their crop in June and July, production in 1931 was 19 per cent larger than that of 1930, and the average price to growers was 72 cents per bushel compared with 76 cents in 1930. Production of these midseason onions is usually less than 10 per cent of total production, and the marketing season is relatively short. In 1932, growers of this type of onion are faced with the possibility of more direct competition with the Bermuda type, owing to the increased acreage and later plantings in the early producing States. Should average yields per acre be obtained on the Bermuda and Creole onions, it would mean a production of early onions close to the record-high production of 1929. A part of this production would be marketed in competition with the intermediate crop.

The acreage of late onions in 1931 was nearly 13 per cent below the peak acreage of 1930, and was 6 per cent below the 5-year average for the period 1926 to 1930. Long periods of extremely hot weather during the growing season, together with unusually heavy thrip infestations in the

Northern States, resulted in the lowest average yield per acre on record. Production declined from the high record of 20,032,000 bushels in 1930 to 12,605,000 bushels in 1931. The average price received by growers to December 1, 1931, was 80 cents per bushel compared with the record low price of 43 cents per bushel in 1930. In 1928, when the crop was only 3 per cent larger than that of 1931, the average seasonal price to growers was \$1.35 per bushel. The following season, or in 1929, the late States as a group made a sharp increase in the acreage, amounting to 15 per cent. The Colorado acreage was nearly doubled, and California, New York, and Michigan made pronounced increases. The late-crop yield per acre in 1929 was about average and, as a result of the large crop, prices were less than half those of the 1928 season.

With the growers and local dealers holding less than 3,000,000 bushels of late onions in storage on January 1 this year, compared with nearly 6,000,000 bushels the year before, the marketing situation for the remainder of the late shipping season is relatively favorable. In planning their acreage for 1932, growers of onions in the late producing States should bear in mind that the decrease in acreage in 1931 was only 6 per cent below the 5-year average and, had average yields per acre been obtained, production would have been one-fourth larger than the crop actually harvested. A significant feature about the 1931 crop is that the estimated farm value of the 12,605,000-bushel production is \$10,126,000 compared with \$8,697,000 for a production of 20,032,000 bushels in 1930.

CITRUS FRUITS

The combined production of oranges and grapefruit has increased tenfold during the last 40 years and has been increasing at an average rate of about 6 per cent per year during the last 10 years. By the fall of 1931 the total number of trees in orange and grapefruit groves was twice as large as it was in 1920. Although about 69 per cent of the trees reported by the 1930 census were listed as of "bearing age," many are still too small to produce fruit in paying quantities and only about one-third are 15 years old or older—the age at which they have reached or are approaching full production. Both in Texas and Florida plantings in the winter of 1930-31 showed some decrease from the heavy plantings of 1928. Allowing for the continued plantings in Arizona, the total area set was apparently about 20,000 acres in both 1930 and 1931. Many of these recent plantings have been made in relatively new areas in which there is little information on which to base estimates of probable production from present groves when their young trees shall have reached 15 or 20 years of age, and all calculations may be upset by freezes or other adverse conditions, but production from the groves already in bearing has increased to a point where it exceeded 54,559,000 boxes of oranges and 18,690,000 boxes of grapefruit in even a moderately favorable season like that beginning in the fall of 1930. The exceptionally low prices received by growers that season and again in the current season show the difficulties to be faced in marketing the rapidly increasing production.

ORANGES

In the country as a whole there are about 537,000 acres of orange groves, excluding groves now being set. Slightly more than four-fifths of the trees will be 5 years old or older by April, 1932, or are nominally of bearing age, but only two-fifths are as much as 15 years old.

The Florida statistics are conflicting, but judging from the records of orange, tangerine, and Satsuma trees in groves and on urban properties, as collected in connection with the fruit-fly eradication work, supplemented by allowances for recent plantings and for the areas not surveyed, the present area in orange trees in Florida is probably somewhere around 265,000 acres. Roughly, slightly more than one-fifth of the Florida orange trees are less than 5 years old, nearly three-fifths are 5 to 15 years old and are therefore of bearing age, but not in full bearing, and one-fifth are at least 15 years old and have reached or are approaching full production. The proportion of young trees is apparently sufficient to permit production to continue to increase at an average rate of about 4 per cent per year. Of the 23,000 acres of oranges in Texas, only about half are 5 years old and a negligible proportion is in full bearing. The California orange groves include about 230,000 acres, of which 26,000 acres, or 11 per cent, are classed as not yet of bearing age. According to the 1930 census,

nearly three-fourths of the young trees in California were Valencias, a variety shipped largely during the months when few oranges are being picked in Florida and Texas. In California the production of Washington navel oranges, the variety that competes with southeastern oranges, has probably about reached its peak. Arizona has about 7,000 acres of oranges; about 25 per cent are of bearing age and about 10 per cent are approaching the age of full production. Production is also increasing in Louisiana, Alabama, and Mississippi.

During the last 18 years exports of oranges have averaged about 8 per cent of the United States commercial orange crop. Most of these exports have gone to Canada. With the increase in the orange crop during recent years there has been a decided upward trend in exports. In 1930-31 season (November, 1930, to October, 1931, inclusive) the total orange exports were the second largest on record, amounting to 4,936,000 boxes, of which Canada took 3,137,000 boxes and the United Kingdom 1,136,000. An interesting development was the large increase during the season in imports by continental European countries, mainly Germany, Netherlands, Sweden, and Norway. These imports amounted to 462,000 boxes against 213,000 in 1928-29, which was the largest previous year. Oranges are exported to Canada the year round, with December and March the months of heaviest movement. Exports to European countries occur mainly during the summer orange season (May to October) and consist mostly of California Valencias. The large and growing competition from countries in the Mediterranean Basin makes winter exports in quantity unprofitable. The present crop that is being harvested in the important Mediterranean Basin countries, Spain and Palestine, is a large one. The plentiful supplies and the low purchasing power of consumers has resulted in low prices.

In the 1931 summer orange season (May to October) Europe, and particularly the United Kingdom, imported large quantities of oranges, most of which, excluding the late spring shipments from Spain, were supplied by Brazil, South Africa, and the United States. Shipments from South Africa fell somewhat below those of 1930 but those from the United States, although not up to the 1929 level, increased greatly over 1930. Those from Brazil, however, assumed the record proportions of 1,750,000 boxes and actually exceeded for the first time shipments from either South Africa or the United States and thus identified Brazil as the source of the principal future competition during the European summer orange season.

The Canadian tariff of June 2, 1931, which placed a duty equivalent to 75 cents a box on American oranges but left on the free list oranges imported from South Africa, Australia, and Jamaica has stimulated some trial exports from South Africa and Australia to Canada. In the three months, July to September, British South Africa shipped about 12,700 boxes, Australia 18,000, and Jamaica 2,100 boxes. The latter figure is about normal for Jamaica. Exports to Canada from these countries have not assumed any commercial importance, but reports indicate that shippers in both Australia and South Africa intend to try to develop the Canadian market further in the 1932 summer orange season.

GRAPEFRUIT

Grapefruit production has been increasing at an average rate of 7 per cent per year during the last 10 years, and the proportion of young trees is now much larger than it was 10 years ago. The available statistics are conflicting but, excluding plantings since the summer of 1931, the area in grapefruit trees in the continental United States is perhaps 193,000 acres. Somewhere around 43 per cent of the trees will be less than 5 years old in the summer of 1932, and only about 17 per cent are as much as 15 years old. Florida now has perhaps 93,000 acres in grapefruit trees, of which perhaps one-third are as much as 15 years old. The California bearing acreage is reported at 12,000 acres, with 3,000 nonbearing. Texas, with an acreage of 72,000, has only 30 per cent of this acreage that will be as much as 5 years old in the spring of 1932. In Arizona the bearing acreage is increasing rapidly. That State now has about 13,000 acres of grapefruit, and only about 30 per cent of the trees are of bearing age. Porto Rico reports 6,120 acres with trees over 6 years old; 1,680 acres with trees 2 to 5 years old; 310 acres with trees 1 to 2 years old; and 200 acres with trees 1 year old.

The upward trend in grapefruit exports was continued in the 1930-31 season (October to September). Total exports amounted to around 7.3 per cent of the crop, or 1,363,000 boxes, of which 855,000 went to the United Kingdom,

426,000 to Canada, and 52,000 to continental Europe. Takings by most countries increased, but the greatest increase occurred in the case of the United Kingdom which country took 273,000 boxes more than in the previous record year of 1928-29. The per capita consumption of grapefruit in most countries is still very low but the trend is strongly upward. The United States and Porto Rico supply most of the grapefruit consumed in foreign countries, but the production and exports of Palestine, the West Indies, Brazil, Argentina, and South Africa are increasing. In 1926 the United Kingdom imported 93,000 boxes of grapefruit from countries other than the United States or Porto Rico. By 1928 these imports amounted to 164,000 boxes and in 1931 they exceeded 375,000 boxes.

In competing in European markets, Porto Rico has a number of distinct advantages over most grapefruit-producing countries. Shipping rates are relatively favorable, production costs are low, and fruit of the desired small sizes can be produced the year around. Commercial grapefruit production in Porto Rico during the 5-year period, 1926-27 to 1930-31, has averaged about 1,010,000 boxes yearly, of which 672,000 boxes have been exported. Grapefruit from Palestine is of high quality and gives promise of offering some of the strongest competition for American fruit in export markets. Exports increased from 2,000 boxes in 1927-28 to 57,000 boxes in 1930-31, and if the present rate of export is maintained in the present season, the total may reach 100,000 boxes. No large expansion of grapefruit production is expected in South Africa. Exports during the last three seasons have averaged 100,000 boxes a year, most of which went to the United Kingdom. Some increase in production has occurred in the British West Indies, especially Jamaica. Exports in 1930-31 amounted to 95,000 boxes or a little less than last season. Exports from the Isle of Pines in 1930-31 totalled to 235,000 boxes, an increase of 15,000 from the previous year, but still 34,000 boxes short of the pre-hurricane exports in 1926-27. The grapefruit industry in Brazil and Argentina is receiving a great deal of attention and may be expected to be of importance in a few years.

Grapefruit exports from the United States in the first two months of the present season (1931-32), have been maintained at approximately the same level as last season but the smaller grapefruit crop, coupled with the unfavorable demand conditions in Europe, suggest that total exports are not likely to be as large as were those of last year.

LEMONS

The United States lemon acreage, which is located almost entirely in California, has not changed much since 1921, although the abnormally hot weather during the summers of both 1930 and 1931 greatly increased the demand for lemons, and stimulated plantings. Production has averaged during the 5-year period, 1926-27 to 1930-31, about 7,092,000 boxes a year, of which around 250,000 boxes have been exported. Practically all the exports go to Canada. United States imports from Italy are heaviest during the spring and summer, and average around 900,000 boxes a year. Italy is the world's largest producer of lemons, followed by the United States and Spain. In both Italy and Spain, the industry is practically stationary, as the trees are mostly all in bearing and no new plantings of importance have been reported. The Italian industry has suffered from lack of markets and low prices in the last few years and is receiving serious attention from the Government. Efforts are being made to improve the pack and to regulate shipments. In years of small California crops, substantial imports from Italy may be expected.

APPLES

The general apple situation is such that, in seasons of favorable weather, heavy supplies of the commercial crop may be expected to continue, assuming that orchards will be given average care and that plantings will be at about the average rate of recent years. Efforts of European countries to expand and to modernize their fruit industries, and the expected continuation of increasing supplies of fruits that compete with apples, suggest the continuation of difficulties in marketing large apple crops. In the past, apple growers have incurred heavy losses by setting new trees on poor locations, or by the selection of unprofitable varieties. It is as important to-day as ever before that new plantings be confined to suitable varieties and to soils and sites that are

likely to produce a crop in years of generally light production as well as in years of heavy production.

A tree survey of commercial orchards for 41 States showed that in 1928 the 10 most important apple varieties, in terms of number of trees, in order of importance were Delicious, Winesap, Jonathan, Baldwin, Stayman Winesap, Ben Davis, Rome Beauty, York Imperial, McIntosh, and Grimes Golden. These 10 varieties constituted about 60 per cent of the total trees in commercial orchards. Plantings of Delicious trees, 73 per cent of which were under 14 years of age in 1928, point to increasing supplies of this variety for several years. Production of the McIntosh and the Stayman Winesap varieties is expected to increase, since 60 per cent of these varieties were under 14 years old in 1928. Another group of varieties in which there are prospects for increased production is composed of Winesap, Jonathan, and Grimes Golden. In 1928, 43 per cent of the trees of these three varieties were under 14 years of age. Ben Davis plantings have declined for several years. Only moderate plantings of Baldwin, Rome Beauty, York Imperial, and the many less important varieties have been made during the last 10 years.

From 1910 to 1930 economic factors have been forcing an adjustment of the apple industry. During this period the number of apple trees declined about 101,000,000 or 46 per cent. The removal of these trees has gone far toward correcting the situation caused by overplanting 25 years ago and has done much toward placing the industry on a sounder economic basis. In spite of these removals, however, production has averaged only 3 per cent less for the period 1928-1931, than for the period 1908-1912, and about 13 per cent less than for the high period, 1913-1917. These smaller declines in the production as compared with tree numbers were due to the shift that has taken place from the farm to commercial orchards with better locations, better care of these orchards, and the increasing bearing capacity of many trees as they approached or reached full bearing age. This trend is manifest in the average yield per tree which increased from 1.2 bushels per bearing tree in the period 1908-1912, to an average of 1.9 bushels during the period 1928-1931. Commercial production increased until a peak of 39,000,000 barrels was reached in the very favorable growing season of 1926. Since 1926 it has averaged somewhat higher than for the five years previous to 1926, and the 1931 commercial crop was the fourth largest on record.

Important adjustments that have taken place in tree numbers are indicated by data from the Bureau of the Census. Although the total number of apple trees in 1930 was 46 per cent less than in 1910, the number not of bearing age was 58 per cent less, and the number of bearing age 41 per cent less. During the period 1920 to 1925, plantings were at a somewhat higher rate than from 1910 to 1920 or 1925 to 1930, and consisted of some of the more popular and more profitable varieties.

According to data available, the production of oranges, grapefruit, peaches, pears, and grapes, together with the imports of bananas, increased 58 per cent from 4,933,000 tons in 1919 to 7,770,000 tons in 1931. The Hawaiian pineapple pack nearly doubled from 1924 to 1930, and for the latter year amounted to 12,672,000 cases. These tremendous increases in competing fruits have undoubtedly added to the difficulty of disposing of large apple crops.

In the following discussion yield figures were obtained by dividing average annual production for each period indicated by the number of bearing trees reported for the census year included in the period.

From 1908-1912 to 1928-1931 average production in the three Pacific Coast States increased nearly 300 per cent, although numbers of trees decreased 28 per cent as the result of removal of trees from poor locations and a thinning-out process. This tremendous increase in production in the face of decreasing tree numbers was caused chiefly by a steady increase in yield per bearing tree from an average of 1.6 bushels during 1908-1912 to 5 bushels during 1928-1931. Washington produces two-thirds of the apples grown in these three States. Tree numbers in Washington have declined 22 per cent since 1910; but yield per bearing tree has increased from 1.5 bushels for the period 1908-1912 to 6.4 bushels for the period 1928-1931.

For some years the increases in production have been at a lower rate, and production during the last four seasons averaged 12 per cent greater than during the previous five years. Although only 14 per cent of the trees in these three States are yet to come into bearing, it is believed that the potential bearing capacity of the orchards is being maintained by resets and by increase in age of trees. As shown by the survey, in 1928 about 33 per cent of the trees that

were under 14 years of age were Delicious; 19 per cent were Winesap; 8 per cent, Rome Beauty; 6 per cent, Yellow Newtown; and 4 per cent, Jonathan. In California the Gravenstein is prominent. Plantings in the Pacific Coast States the last few years have been light and confined largely to Delicious and Winesap.

In the eight Mountain States production increased 68 per cent on the average from 1908-1912 to 1918-1922. During the next 5-year period it increased slightly and then declined somewhat. Idaho, the principal producing State in this group, and Wyoming and New Mexico, are producing more apples than formerly, but production in Colorado, Utah, Montana, Arizona, and Nevada has declined. Numbers of trees decreased 64 per cent from 1910 to 1930; but yields increased from 1.2 bushels per bearing tree during 1908-1912 to 2.6 bushels in 1928-1931.

In 1930 only 11 per cent of the trees were not of bearing age. Plantings have been light during late years. During the last four seasons these eight States produced less than 6 per cent of total production, and over a period of years they are not expected to exert any great influence on changes in production for the country as a whole.

The principal varieties planted, in order of number of trees, are Jonathan, Rome Beauty, McIntosh, Delicious, and Winesap. Recent plantings have been confined largely to Delicious, Jonathan, and Rome Beauty.

During the last four seasons the South Central States produced only slightly more than one-half (55 per cent) of the quantity of apples they produced 20 years earlier. Between 1910 and 1930 the number of trees was reduced by 23,121,000, or 63 per cent. Although this decrease was going on, yields increased from 0.7 bushel per bearing tree in 1908-1912 to 1.1 bushels in 1928-1931.

This group of States now has more apple trees than does the Pacific coast group, but produces only about one-fifth as many apples. Only about one-fifth of the crop in the South Central States is classed as commercial. The region is subject to weather hazards and to severe damage from diseases and insects. For decades farmers in parts of the region have been setting out apple trees and then neglecting and removing them as they failed to produce well, or as strong competition was encountered from other growing regions. During the last 10 years many old orchards have been cut down, and in the region as a whole, considerable planting of the more popular varieties has occurred. According to the tree survey, in 1928 nearly 50 per cent of the trees in commercial orchards of the region were under 9 years of age, and according to the 1930 census 33 per cent of all apple trees in the region were yet to come into bearing. In order of number of trees, the Delicious is the most important variety planted in late years, although Winesap, Jonathan, and Stayman Winesap represent a relatively large proportion of the young trees. It is believed that the newer orchards of the region are more favorably located than many of the earlier plantings, and that the past rate of tree mortality may be reduced. If this should happen, some increase in production may be expected over a period of years.

The North Central States contain about 31 per cent of the total number of apple trees in the United States, and produce 18 to 20 per cent of the apples. From 1910 to 1930, the number of trees decreased 58 per cent and production decreased 41 per cent. Yield per bearing tree increased from an average of 0.8 bushel in the years 1908-1912 to 1.2 bushels for the last four years, 1928-1931.

A large part of the decrease in tree numbers came in the first half of the period 1910-1930, and many of the orchards now remaining are well supplied with young trees, many of which were planted during the last 10 years. According to census figures, about 29 per cent of the trees in these States had not yet reached bearing age in 1930. In some districts of this region, particularly southern Ohio, reports indicate that a considerable number of trees died from the effects of the 1930 drought, but this loss will have little effect on production as a whole.

Tree numbers have declined less in Ohio, Michigan, and Wisconsin than in the other States of the region, while in Iowa, Missouri, Nebraska, and Kansas the percentage decrease was most severe. Apparently there are enough young trees to maintain, and possibly increase, commercial production, if well cared for. The principal varieties planted in the last few years are Jonathan and Delicious. The trees under 9 years old in 1928, were composed largely of Delicious, Jonathan, Winesap, Stayman Winesap, Grimes Golden, Yellow Transparent, and Rome Beauty.

The Atlantic States include West Virginia and all Atlantic Coast States from New York to Florida. These States produce about 38 per cent of the apple crop. From 1910 to 1930, all trees declined 21 per cent in number, but trees not of bearing age decreased 46 per cent.

It is probable, however, that much of the decrease in total tree numbers occurred in farm orchards and poorly located commercial orchards. Improved practices of orchard management are being increased in some important apple sections, and any further decline in production should be gradual and probably less severe than tree removals and recent light plantings would indicate. Yields per bearing tree averaged about 1.8 bushels during 1908-1912 and in 1928-1931 were approximately the same. In late years both production and yields per tree have decreased in New York and Pennsylvania, and have increased in New Jersey, Delaware, Maryland, Virginia, and West Virginia. In 1928, trees under 19 years of age in these seven States varied in the individual States from 55 to 77 per cent of all trees, according to the tree survey of commercial orchards. Reports from the Cumberland-Shenandoah district indicate that tree losses from the 1930 drought are not as severe as was anticipated, probably not over 5 per cent.

This survey also showed that a large proportion of trees under 14 years of age in the States south of New York were of the following varieties, listed in order of number of trees: Stayman Winesap, Delicious, Winesap, Rome Beauty, York Imperial, and Grimes Golden. In New York the younger trees are of the McIntosh, Delicious, and Wealthy varieties. Relatively small percentages of Baldwin, Rhode Island Greening, and Northern Spy have been planted in recent years. Early varieties are prominent in Delaware and New Jersey.

From 1910 to 1930, the number of trees in the New England States decreased 36 per cent. Yields per bearing tree remained about the same at 1.6 bushels during the periods 1908-1912 and 1928-1931, and production fell off 39 per cent. The removal of many farm and old orchards probably accounts for a very large part of the reductions in tree numbers and in production. In 1930, 27 per cent of the trees were not of bearing age, and the percentage of trees not of bearing age was greater than in any of the previous three census years. Decline in production has slowed up in late years, and probably will not continue much further, if the orchards are well cared for.

The most important varieties in order of number of commercial trees in the region are: Baldwin, McIntosh, Ben Davis, Wealthy, Delicious, Northern Spy, Gravenstein, and Rhode Island Greening. In 1928, according to the tree survey, some plantings were being made of each of these varieties, particularly of the McIntosh, Baldwin, and Delicious. Plantings of Ben Davis and Rhode Island Greening were especially light.

In the last five seasons (1926-27 to 1930-31) apple exports from the United States have averaged one-sixth of the total commercial crop. About one-seventh of the commercial barreled apple crop and one-fifth of the commercial boxed crop were exported during this period. Despite a larger apple crop in this country, this season (1931-32) apple exports are running somewhat behind those of last season, which were the third largest of record. This decline in exports has been due to increased competition from large continental European apple crops this season and extremely unfavorable economic conditions including unfavorable exchange rates in our most important foreign markets.

It becomes increasingly apparent that more attention should be given to market demands as to grade and quality in our foreign markets. In the present (1931-32) season great improvement has been shown in the quality of barreled apples received in European markets from Nova Scotia, the principal competitor in the American barreled apple trade on the British market. The Buy-British-Goods campaign is also tending to increase the competition of Canadian apples. Certain varieties of Canadian apples have sold this year for the first time at prices equal to or above similar varieties from the United States.

In the 1930-31 season France became, for the first time, a fairly important outlet for American apples. But the French market was overloaded with low-quality and poor-condition fruit, with the result that returns have been much below what might reasonably have been expected. The French market is probably the most discriminating in Europe. Only the best apples, well-colored, in sizes ranging from 2½ inches up, can be sold to advantage in that country.

From a long-time point of view there appears to be a definitely upward trend in the consumption of fruit in European countries. The extent to which this will be reflected, in larger takings of American apples, will depend to a consider-

able extent upon the competition of European-grown supplies. Apples are produced in practically all European countries. Serious efforts are being made in many of these countries to put their fruit industries on a more modern basis. Progress in this direction is being made, particularly in Netherlands, Switzerland, northern Italy, and parts of Germany. In these countries new plantings are being made with proper spacing and proper distribution of varieties, and production and marketing methods are being improved. Although some of the most important surplus apple-producing countries of central and southeastern Europe still show no evidence of significant improvement in the apple industry, it is clear that on the whole more competition, especially from the point of view of quality, may be expected.

PEACHES

A combination of favorable conditions in 1931 for peach production over most of the country resulted in probably the largest United States crop of peaches ever produced. This unusually large crop occurring in a year of depressed business conditions resulted in the lowest average price since the beginning of the Bureau of Agricultural Economics price record in 1918. Notwithstanding the low returns in 1931 the outlook is for some improvement in the peach industry as a whole. In the South the planting of peach trees in commercial orchards in recent years has apparently not been sufficient to maintain the present number of bearing trees. In California the production of clingstone varieties appears to have reached a peak for the present cycle and for freestone varieties the production trend is slightly downward. In the other peach-growing areas as a whole no large change in the number of bearing trees is indicated, although in some of the Rocky Mountain States the trend is upward and in some of the North Atlantic States it is downward.

Judging from surveys and other available information the annual plantings of peach trees in commercial orchards in the South during the last four years have averaged less than 5 per cent of the number of trees now in commercial orchards. Assuming the average length of life of southern peach trees to be 13 to 15 years, this rate of planting is not sufficient to maintain the present number of trees.

The 1931 peach crop in 11 Southern States (North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Tennessee, Arkansas, Oklahoma, and Texas) was among the largest on record. The crop-condition figure for Georgia in 1931 expressed in percentage of a full crop was 91 compared with 58 in 1930 and a 10-year average of 70. The figures for other important southern peach States show similar comparisons. The extremely heavy production was due to the combination of a number of factors. The trees were in good condition following the light crop of 1930, and there was little, if any, damage from winter freezes or spring frosts. Weather conditions at pollination time and during the growing season were generally good, and there was very little damage from insects and disease. About two-thirds of the southern peach trees are now at an age at which they are capable of bearing heavy crops. This occurrence of such generally favorable conditions of production is unusual.

Although the 1931 production in the South was at a high figure, car-lot shipments from 11 Southern States of about 23,000 cars were exceeded both in 1926 and 1928. Even including the quantity marketed by truck, the commercial movement in 1926 and 1928 was apparently greater than in 1931. Considerable fruit was not shipped in 1931 because of unsatisfactory market conditions. In 1931 the average farm price of peaches in seven important Southern States was 60 cents per bushel. In the eight years prior to 1931 the average farm prices ranged from 92 cents in 1926 to \$1.71 in 1923. Under better business conditions in the consuming markets than prevailed in 1931, it has therefore been possible in some years to market larger quantities of southern peaches at higher prices.

Commercial-peach-tree surveys made by the United States Department of Agriculture, in some instances in cooperation with State agencies, in 1929, included five leading Southern States—Georgia, North Carolina, South Carolina, Tennessee, and Arkansas. A supplementary survey was made in Georgia in 1930. In 1931, 98 per cent of the car-lot peach movement from the South originated in these States, which largely supply the fresh-peach markets up until the first part of August. Eighteen per cent of the trees reported in the 1929 survey in commercial orchards in the five States were under 5 years old; 65 per cent were 5 to 9 years old; 14 per cent were 10 to 14 years old; and 3 per cent

were over 14 years. About two-thirds of the trees were near the age of greatest potential productivity. Plantings in 1930 and 1931 in most Southern States were not large.

Census figures for the 11 southern peach States, which include both commercial and farm orchards, show that the total number of peach trees in 1930 was 31,878,586, which is only 83 per cent of the total number in these States in 1925. The number of trees listed in the census as not of bearing age in 1930 was 23 per cent of the total number of trees in these States.

The 1930 survey showed that in Georgia, which has produced 38 per cent of the crop in 11 Southern States during the last four years, 16 per cent of the trees in commercial orchards were less than 5 years old in the fall of 1930; 60 per cent were from 5 to 9 years; 20 per cent were from 10 to 14 years; and 4 per cent were more than 14 years old. The 1930 census indicates that only 14 per cent of the total peach trees in Georgia were not of bearing age and that the total number of trees was only 62 per cent of the number in 1925. The situation in the leading southern peach State is, therefore, that more than four-fifths of the trees are of bearing age and the number of trees not of bearing age is considerably less than would be necessary to maintain the present number of bearing trees. The census indicates that Georgia had 9 per cent less bearing trees in 1930 than in 1920. The phony peach disease has apparently been reduced through control work to a point at which its effect on production is very limited. It has been found in most of the other Southern States.

Some of the early and midseason varieties have been planted rather heavily in south Georgia. The early varieties from south Georgia are the first peaches to reach the market. Good prices have frequently been received for limited quantities of the earliest varieties, but the demand for them is restricted and the markets are easily oversupplied.

In North Carolina 79 per cent of the trees in commercial orchards were 5 to 9 years of age in 1929 and 11 per cent were under 5 years old. In South Carolina 67 per cent of the trees in commercial orchards were 5 to 9 years old and 25 per cent were under 5 years. In Tennessee 75 per cent of the commercial trees were from 5 to 9 years old and 14 per cent were under 5 years, according to the survey; while in Arkansas, in which a larger percentage of the commercial trees were young than in the other Southern States, only 52 per cent were 5 to 9 years old and 36 per cent were under 5 years in 1929.

In the North Atlantic States there has been a decline in the number of peach trees during recent years. The 1930 census shows for this group of States only 83 per cent of the number of peach trees included in the 1925 census, and that 29 per cent of the trees in 1930 were not of bearing age. In New Jersey a survey in 1930 in cooperation with the New Jersey Department of Agriculture indicated that only 9 per cent of the trees in commercial orchards were under 4 years old, and that 40 per cent were more than 9 years old.

In the group consisting of Delaware, Maryland, Virginia, and West Virginia, there has been a slight decrease in the number of peach trees in the 5-year period from 1925-1930 according to the census. The number of trees not of bearing age in this group of States appears to be about sufficient to maintain the present number of bearing trees.

In the North Central States the census figures show a slight decrease in the number of trees from 1925 to 1930 and the number of trees not of bearing age in 1930 for the group as a whole does not indicate any pronounced change in production from the average of recent years. In Illinois, the principal peach-producing State in this region, the 1931 crop apparently marked the peak of production for the present cycle. Twenty-six per cent of the Illinois trees were reported as not of bearing age in the 1930 census and plantings in 1931 were light.

In some of the Western States there has been an increase in the number of trees since 1925. This is particularly true in Colorado where the number of trees increased 93 per cent from 1925 to 1930. Forty-two per cent of the peach trees in Colorado were reported in the 1930 census as not of bearing age which indicates the probability of a decided increase in production. Increases in the number of trees from 1925 to 1929 also occurred in Utah, Washington, and Oregon according to the census.

In California there was a 10 per cent decline in the number of trees during the period 1925 to 1930 according to the census, and only 14 per cent of the trees were not of bearing age in 1930. The peak of production of clingstone varieties for the present cycle has apparently been reached, although surplus production may continue for several years unless there is a marked reduction in the number

of trees. As was the case in 1930, large quantities of California peaches were not harvested in 1931 because of market conditions. Owing to the light plantings in recent years a slightly downward trend in production of freestone peaches in this State is indicated.

Damage from insect pests was unusually light in 1931 in most commercial peach areas except California. The oriental fruit moth is, however, a continuing menace in the eastern, mid-western, and some southern peach districts. Growers are confronted with serious problems of financing in most sections, but commercial growers generally are reported as making efforts to care for their trees. In some areas there has been a tendency toward expansion of local markets through the use of the motor truck and roadside stands.

CHERRIES

Production of cherries in the 10 more important commercial States (New York, Michigan, Wisconsin, Montana, Idaho, Colorado, Utah, Washington, Oregon, and California) in 1931 amounted to about 95,590 tons, being about 12 per cent smaller than the large crop of 1930 but around 14 per cent larger than the average of the preceding five years. Production in the principal sour-cherry States (New York, Michigan, and Wisconsin) amounted to 45,500 tons in 1931 or about 11 per cent less than the exceptionally large 1930 crop but 22 per cent more than the crop of 1929. In the sweet-cherry States of the Pacific coast, California produced 23,000 tons in 1931, this being nearly a third larger than the 1930 crop and perhaps the largest crop of cherries produced in the history of the State. Owing to low prices, growers abandoned about 3,000 tons of fruit. Washington and Oregon, however, because of adverse weather conditions during the season, lost considerable fruit and production amounted to but 19,000 tons, as compared with about 29,000 tons in 1930 and 24,000 tons in 1929. The proportion of the 1931 crop utilized for maraschino manufacture in these States was considerably larger than in the preceding season.

In spite of the fact that production in the 10 States during 1931 was considerably smaller than during the year preceding, the average seasonal farm price for all cherries combined was about 38 per cent less than that received in 1930. In the three Eastern States producing mainly sour cherries the 1931 average farm price for the season was about 40 per cent below that received for the large 1930 crop and about 48 per cent lower than the price that prevailed for the 1929 crop. The corresponding figures for the Pacific coast States, where sweet cherries predominate, show that the farm price in 1931 was about 43 per cent less than in 1930 and about 61 per cent less than in 1929.

The lower prices prevailing for the 1931 crop were due to a number of factors, the more important being the prevailing depressed business conditions, which not only affected the current prices but made more difficult the moving of the relatively large pack of canned cherries from the 1930 crop and the consequent lesser demand on the part of canners for the raw fruit in 1931.

Bearing trees in the 10 State increased about 9 per cent from 1920 to 1930. The percentage of the total trees not of bearing age in 1920 was about 22 per cent and in 1930 about 39 per cent. In the three Pacific coast States (Washington, Oregon, and California) the increase in bearing trees from 1920 to 1930 amounted to about 36 per cent. In 1920 about 27 per cent of the total trees were not of bearing age; in 1930 the nonbearing trees constituted 37 per cent of the total. In the three important Eastern States (New York, Michigan, and Wisconsin) the number of bearing trees was about the same in 1930 as in 1920, whereas the number of nonbearing trees was around 125 per cent more in 1930 than in 1920. In 1920 about 22 per cent of the total trees in these three States were nonbearing as compared with 39 per cent in 1930.

The expansion in the number of trees has apparently been accompanied by a decline in the number of farms growing cherries, indicating an increase in the average size of orchard. This would tend to indicate that a shift is in process from the general farm orchard to specialized orchards and the abandonment of less favorable locations to more specialized commercial areas. This fact, together with the large proportion of nonbearing trees reported in the 1930 census, would indicate that the upward trend of production in evidence over the last decade can be expected to continue.

If it should happen that the present level of general commodity prices continues over the next few years, it seems likely that the shifts now in evidence will be accentuated and the abandonment of the general farm orchards and those in the commercial areas on less profitable locations will be forced at a more rapid rate than has been in evidence in the past.

GRAPES

The bearing acreage of grapes is still so large as to produce burdensome surpluses in seasons of normal growing conditions, even though total production has been declining during the last three seasons.

CALIFORNIA GRAPES (EUROPEAN TYPES)

In California there has been some reduction in acreage from the peak which was reached in 1927. Some acreage has also been abandoned, but much of this still remains as a potential source of supply. The bearing capacity of the vineyards was estimated in 1931 to be about 13 per cent lower than in 1927. With average growing conditions, however, the total production might still be in excess of that which was harvested in 1930, when approximately 20 per cent of the crop was left on the vines. Insect injury during 1931 may cause some reduction in future yields, but the industry is still faced with the hazard of recurring surpluses.

The small California crop of 1931 was not due to the small change in bearing capacity, but to excessive summer heat, serious insect damage, and a shortage of water, all of which resulted in a yield per acre of approximately 40 per cent below the 10-year average. Total production in the State was estimated at 1,287,000 tons, compared with 2,181,000 tons in 1930 (of which 433,000 tons were not harvested), and 1,827,000 tons produced in 1929. Shipments of fresh grapes from the State amounted to only slightly more than 39,000 carloads in 1931, as compared with 65,000 cars in 1930 and 59,000 in 1929.

TABLE GRAPES

With the greatly reduced supplies in 1931, California grapes packed for table use sold on eastern auctions at higher average prices than in 1930, in contrast to the decline in the general commodity price level. Thompson Seedless (Sultanina) and Red Malaga were in fairly good demand, but white Malaga has been meeting with less demand as table stock and an increasing percentage of this variety has moved into juice channels. Production of Flame Tokay was severely reduced in 1931 by the hot winds and other unfavorable factors, and the light supplies brought comparatively favorable returns in eastern auctions. With normal growing conditions, however, the Tokay crop may be expected to again approach previous production levels.

JUICE GRAPES

The demand for black juice grapes was so poor in 1931 that with about 40 per cent lighter shipments, prices barely equaled those of 1930. There has been some decline in the bearing acreage of the strictly juice varieties during the last three years but this decrease has apparently been offset by the increased productivity of maturing vines, and crops as large as the 486,000 tons produced in 1930 might still be obtained from the present acreage. Such production has proven to be excessive in past seasons. Eastern demand for juice grapes has also decreased during recent years.

Previous to 1927, black juice varieties commanded considerably higher prices than did table grapes in eastern markets, but during the last four seasons their prices have averaged lower than the table stock. Early maturing juice varieties, such as the Zinfandel, have arrived on the markets before the normal seasonal demand has developed, and have brought low returns compared with returns from later shipping varieties. Custom and temperature conditions usually delay the demand for juice grapes until the latter part of the season. It is important that adjustment in production and shipping be brought about to eliminate the depressing effect of these early shipments of juice stock upon later markets.

Because of the relatively stronger demand in 1931 for grapes as table stock and raisins than for juice purposes, relative small quantities of Thompson Seedless and Muscats were shipped as juice stock. Yields per acre of Muscats were more reduced by the extreme summer heat than was true of any variety except Flame Tokay. This fact, together with early maturity, caused growers to dry a larger proportion than usual. The result was the lightest interstate movement of fresh Muscats in 10 years, and eastern auction averages were somewhat higher than in recent seasons.

RAISIN GRAPES

Notwithstanding the larger percentage of the production of raisin varieties dried in 1931, the total tonnage of raisins produced was smaller than in any year since 1921, and prices have been higher than a year earlier. After allowing for such quantities of Thompson Seedless and Muscats as can be marketed for table or juice purposes, the present acreage of raisin varieties is, however, still sufficient to produce in years of normal yield a supply well in excess of domestic demand, and severe competition from foreign raisins is expected to continue in export markets. About 25 per cent of the California raisin shipments during the crop years beginning September 1, 1929 and 1930, were exported to overseas markets.

Production of raisins in Australia, Smyrna, Spain, Greece, and Crete, which averaged only about 85,000 tons during 1921-1923, increased to an average of 142,000 tons annually during the three years 1928-1930, and preliminary estimates for 1931 are about 121,000 tons. Foreign production of currants has also been increasing. The currant output of Greece and Australia increased from an average of 131,000 tons in the years 1921-1923 to 164,000 tons for 1928-1930, with preliminary estimates of about 105,000 tons for 1931. Normal production and exports of raisins and currants from these countries will probably continue to be about as large as in recent years, and some additional competition from Russian and Persian raisin exports to European markets may likewise be expected.

AMERICAN TYPES

In the States east of the Rocky Mountains in which American-type grapes are produced, the combined production in 1931 exceeded that of previous seasons. Michigan produced somewhat less than the record crop of 1930, but New York, Pennsylvania, and Ohio had heavy yields, and returns in these States were unsatisfactory. There is very little new acreage to come into bearing, and no indication of continued increases in production. On the other hand few vineyards have been removed and comparatively few have been neglected or abandoned, consequently there is no immediate prospect of material decreases in production except as yields per acre vary from year to year. Heavy competition from California grapes also continues to be one of the principal factors affecting the marketing of the eastern crop.

STRAWBERRIES

Present indications are that the total commercial strawberry acreage for harvest in 1932 will be about 23 per cent higher than the small harvested acreage of 1931, and only 5 per cent less than the average acreage of the large crops harvested from 1927 to 1929, inclusive.

In both 1928 and 1929 the harvested strawberry acreage exceeded 200,000 acres, and in these years, in some of the important second-early and intermediate-shipping States, prices were barely sufficient to cover the cash outlay for harvesting. Largely because of low prices and the drought, acreage fell from the 1928 peak of about 207,000 acres to about 154,000 acres in 1931. Prices of strawberries in 1930 were, in general, the highest since 1926. These favorable prices stimulated plantings to a point where the indicated 1932 acreage for harvest of 190,540 acres has been surpassed only by the large acreages harvested in the seasons of 1927 to 1929.

Acreage increases are indicated in 1932 for each of the different groups of States but are most marked in the second-early and intermediate States where acreage reductions from 1928 to 1931 were especially large. In the other groups of States the indicated acreage for picking in 1932 will be the highest in years, although not much larger than in 1931.

Plantings for harvest in 1933, except in the early States, will be made during the spring months of 1932, and growers will be largely influenced in their planting operations by the prices received in 1931. Although the 1931 prices were lower than the high prices of 1930, they were still favorable, especially when compared with prices of other farm crops. The relatively favorable position of strawberries in 1931 suggests the probability of further increases in acreages in 1933, especially in the second-early and intermediate States where the indicated 1932 acreage is considerably below the high acreages of 1927-1929. It is in these two groups of States that marketing difficulties have been greatest in years of heavy production.

In the early-shipping States of Florida, Louisiana, Alabama, Mississippi, and Texas, the indicated acreage for harvest in 1932 of 45,730 acres is the highest of record and about 13 per cent above the 1931 acreage. Strawberry acreage in these early States has increased markedly during the last decade. During the first half of this decade prices to growers in the early States were upward, reaching a peak in 1926. Since 1926 the trend has been downward and prices in 1931 averaged 16 per cent less than for the five preceding crops. Although 1931 prices were relatively low, the yield per acre for that season was about 40 per cent above the average for the five preceding years. The crop that year amounted to 76,560,000 quarts and brought the growers \$14,643,000, or a 20 per cent larger gross income than the previous high return for the 1928 crop.

In the second-early States of Arkansas, Tennessee, North Carolina, Virginia, South Carolina, and Georgia, the estimated acreage for picking in 1932 is 43,580 acres, which is about 43 per cent larger than the low harvested acreage of 1931. It is, however, about 20 per cent below the average of the three large acreages of 1927-1929. Although increases in acreage for 1932 are indicated in each State of this group, the increase in Arkansas and Tennessee combined is expected to be about 9,800 acres, or 74 per cent of the total increase for this group.

Production in 1931 was 36 per cent less than the average production for the five years preceding 1930. Prices to growers in 1931 averaged 15 per cent less than in 1930 and were about the same as in 1929, but slightly higher than the low prices of 1928.

In the intermediate States of Missouri, Kentucky, Delaware, Maryland, New Jersey, Kansas, Illinois, and Oklahoma, present estimates indicate a total commercial acreage for picking in 1932 of 47,010 acres. This figure exceeds the 1931 acreage by 11,540 acres, or 33 per cent, but is 24 per cent less than the average for the three large acreages harvested during 1927-1929.

Yields in these intermediate States in 1931 were low, being only slightly higher than the low yields of 1930, and only 72 per cent of the average yields for the five crops preceding the 1930 crop. With a small acreage and with low yields, production in 1931 was smaller than for any year in more than a decade, and was only about 50 per cent of the average production of the five preceding crops.

Prices to growers in 1931 averaged 22 per cent less than the very favorable price of 1930, but were considerably above the low prices received in both 1928 and 1929.

In the late States of Indiana, Iowa, Michigan, New York, Ohio, Pennsylvania, and Wisconsin, indications are that the commercial acreage for picking in 1932 will be 28,380 acres or 13 per cent larger than the average acreage of the five preceding crops and 6 per cent above the high acreage of 1924. In these States changes in acreage since 1919 have not been especially marked.

Both yield per acre and total production in 1931 were the largest since 1927, and prices to growers were about 42 per cent below the favorable 1930 price and the lowest for more than a decade.

In the Pacific Coast and Mountain States (California, Oregon, Washington, and Utah), much of the production is utilized by frozen pack and other local processing plants. Strawberries sold for consumption as fresh fruit are largely utilized in western markets. The indicated 1932 acreage for picking of 25,840 acres is slightly larger than the previous record acreage of 1928 and exceeds the 1931 harvest acreages by about 10 per cent.

The 1931 production in these States was about 14 per cent greater than in 1930 but was 8 per cent less than the record 1928 production. Prices to growers in 1931 were 10 per cent lower than in 1930, and 12 per cent lower than the average price for the five years 1928-1930, inclusive.

CANTALOUPE

If, in 1932, the acreage of cantaloupes and miscellaneous melons, in the early, second-early, and intermediate areas, continues upward or remains as high as in 1931, an average yield per acre would result in a crop of such size that a considerable proportion of it would probably be left in the field.

With most other truck crops which require a lot of labor and offer a chance for getting a high value per acre, cantaloupes and miscellaneous melons shared in the general increase in acreage planted in 1931. For the United States as a

whole the acreage of 138,180 was 7 per cent higher than in 1930 and 22 per cent above the 1928-1930 average acreage. The 1931 increase over the 3-year average acreage was especially marked in the second-early producing areas, of lesser degree in the intermediate States, and was hardly noticeable in the late States. Yields in 1931 were slightly above the low yields of 1930, but 11 per cent below the average yields of 1928-1930. Hence total production was only 10 per cent above the average of the previous three years.

For all but the intermediate States, the decline in price per crate from the previous 3-year average was less than the decline in the general price level for the same period. The combination of low yields and low prices, however, lowered the value per acre about in proportion with the drop in the general price level.

The acreage in Imperial Valley, Calif., in 1931 was 51,640 acres or slightly higher than the 1930 acreage and 26 per cent higher than the average 1928-1930 acreage. The estimated yield of 152 crates per acre in 1931 was higher than in 1930 but below the usual average. The price averaged 25 per cent below that of the previous three years while the decline in value per acre was about 30 per cent below.

The second-early producing areas include Arizona and parts of California and Texas. The other important producing States in this group are Arkansas and the Carolinas. Texas increased its second-early acreage from 2,320 acres in 1930 to 11,530 in 1931 and was responsible for most of the 21 per cent increase in this group of States. Yields at 120 crates per acre in 1931 were below average for this group so that total production was only 4 per cent above the average of the previous three years. The average 1931 farm price was about one-fifth lower than the average for the previous 3-year period and the value per acre was nearly two-fifths below the average.

The intermediate group, of which Maryland, Indiana, Delaware, Washington, and New Mexico are the main producing States, increased their acreage 10 per cent from 18,620 acres in 1930 to 20,460 in 1931. Yields were slightly above average and prices to growers dropped about 30 per cent below the previous 3-year average.

The late group—mainly Colorado, Michigan, and New Jersey—had a slight decline in acreage in 1931, having 18,510 acres as compared with 19,310 in 1930. Yields were unusually low or about the same as in 1928. Prices to growers dropped 12 per cent below the average for 1928-1930.

WATERMELONS

A 1932 planting of watermelons as large as the record acreage of 1931, unless yields are lower than the usual average, would probably again result in large quantities of marketable watermelons being unharvested. In 1930 the quantity left in the fields in the early and second-early States represented more than 6 per cent of the entire country's commercial crop, and in 1931 nearly 4 per cent. Watermelons nevertheless appear to have paid relatively better returns than did some other cash crops, but the prospects for 1932 may not offer much inducement for a shift to watermelons.

The 1931 commercial watermelon acreage of 238,820 acres was the largest on record, slightly exceeding the previous high acreage of 1930, but owing to a lower yield, total production was about 8 per cent below 1930. Lower production was followed by a more marked reduction in car-lot shipments. There were approximately 52,000 cars, or about 14 per cent below the record movement in 1930. Notwithstanding this reduced production, prices to growers in the United States declined about 13 per cent and the total farm value of the 1931 crop declined about 18 per cent compared with 1930.

The early acreage in Florida and Imperial Valley of California in 1931, was 40,300 acres, compared with 43,200 acres planted in 1930. There was a decrease in Florida of about 10 per cent, but an increase in California of 9 per cent. Prices to Florida growers decreased about 20 per cent in 1931. The marketing problems were complicated by the lateness of the Florida shipping season, which resulted in increased competition with other sections. Prices to California growers, who produced their largest crop in 1931, were the lowest in more than a decade and about 9 per cent less than the average price realized for the 1930 crop.

There was a slight decrease in the 1931 acreage in the second-early States (Alabama, Arizona, Georgia, Mississippi, North Carolina, South Carolina, and Texas), which planted a record of 147,290 acres in 1930. The decrease of 6

per cent in Georgia, which had about 52 per cent of the total acreage in this group, was partially offset by increases in the Carolinas. Production in this group was about 23 per cent lower than in 1930, the decrease in Georgia amounting to approximately 37 per cent. Prices to growers, however, showed improvement over 1930 prices only in South Carolina and, for the group as a whole, averaged about 15 per cent below 1930.

The record acreage shown for the country as a whole in 1931 was mainly due to the larger acreage grown in the late States (Arkansas, Colorado, Delaware, Illinois, Indiana, Iowa, Maryland, Missouri, Nevada, New Jersey, Oklahoma, Oregon, Utah, Virginia, Washington, and California). The acreage in this group exceeded that of 1930 by 19 per cent and was 8 per cent larger than the previous high record of 1926. The yield per acre was considerably above that of 1930 and the estimated total production of 19,256,000 watermelons exceeded the previous record crop (15,785,000 in 1926) by 22 per cent. The price to growers in 1931 dropped 30 per cent below that of the previous year.

DRY BEANS

The total production of dry edible beans in 1931 appears to be fully equal to the average annual disappearance during the last three years. This new crop supply is distributed among varieties or commercial classes more closely in line with the usual requirements for each class than was the 1930 crop. However, the unusually heavy carry-over of Pintos, Great Northerns, Pinks, Blackeyes, and Baby Limas adds materially to the available supply and changes to some extent the distribution of the total supply by classes. The 1931 crop is moving relatively slowly at very low prices and unless utilization is increased materially another heavy carry-over at the end of the present season seems highly probable.

The total acreage harvested in 1931 was 11 per cent less than that of 1930, about the same as that of 1929, and 15 per cent greater than the estimated average for 1924-1928. The average yield for the United States was 690 pounds (11.5 bushels) which was 30 pounds greater than in 1930 and the highest since 1925, but only 3 or 4 per cent higher than the 10-year average yield of 666 pounds. The total production was 12,705,000 bags of 100 pounds each, compared with 13,757,000 bags in 1930, 12,240,000 bags in 1929, and 10,325,000 bags average for 1924-1928. An average yield in 1932 on an acreage equal to that of 1931 would produce 12,432,000 bags, which without the impending carry-over this year is about equal to the average annual disappearance the last three years. There was an increase of 25 per cent in the production of Pea beans and 75 per cent in Red Kidneys, and a reduction of about 50 per cent in Pintos and Blackeyes.

Average prices of all types of beans declined with the movement of the 1931 crop and on December 1 averaged \$2.46 per 100 pounds to growers. This price compares with \$3.90 on the same date in 1930, \$6.27 in 1929, and an average of \$5.67 for the years 1924-1928. It is about a third less than the average price of \$3.80 for the pre-war years 1910-1914. Prices of individual classes may vary from the average of all classes, but with few minor exceptions they have all declined drastically since December, 1929.

Both imports and exports of beans were light during September, October, and November, 1931—the first three months of the new crop marketing season. Imports, less re-exports of foreign beans, were only 3,000 bags during this period, compared with 135,000 bags in 1930 and 312,000 bags in 1929. Exports of domestic beans for these months were only 31,000 bags, compared with 37,000 in 1930 and 56,000 in 1929. Net annual imports for the season from September, 1930, to August, 1931, were 508,000 bags, compared with 1,135,000 bags for the previous 12-month period and 464,000 bags for the years 1924-1928.

A large proportion of the beans imported during recent years has been made up of white beans competing with domestic Pea beans and other classes of white beans. The unusually small imports for the early months of the current season are attributed to plentiful supplies of domestic white beans and low prices rather than any shortage of foreign beans. The price of domestic Pea beans at New York in December averaged only \$3.01 per 100 pounds wholesale, or barely topping the 3-cent a pound import duty. Prices of imported pea beans averaged \$1.20 per 100 pounds, and Otenashis (large whites) averaged \$1.76 per 100 pounds in bond at New York City in the same month. There is a surplus above domestic requirements both in the Danubian countries and in Japan, although the 1931 acreage of export types in Japan was

reduced materially following the low prices received for the previous crop. In Rumania there is less tendency to change bean acreages in response to changes in price.

OUTLOOK BY CLASSES OR TYPES

PEA BEANS

More favorable growing conditions in Michigan and New York in 1931, compared with the bad drought conditions of 1930, resulted in a more nearly average production of Pea beans, despite a somewhat smaller acreage. However, the average yield per acre in Michigan, the principal producing State, was only 540 pounds (9 bushels) in 1931, compared with the 10-year average of 666 pounds (11.1 bushels). The total production of this class was 3,709,000 bags compared with 2,825,000 bags in 1930, 3,305,000 bags in 1929, and 3,646,000 bags the average for 1924-1928. Prices continued downward with the movement of the new crop. The average farm price in Michigan on December 1 was \$2.10 per 100 pounds compared with \$4.30 on the same date in 1930, \$6.20 in 1929, and \$5.45 average for the years 1924-1928.

GREAT NORTHERN

Production of Great Northern beans in 1931 was estimated at 2,006,000 bags. This is about 3 per cent less than the high record crop of 2,066,000 bags produced in 1930. The total harvested acreage of all beans in the three States producing mainly Great Northern (Idaho, Montana, and Wyoming) was somewhat less than in 1930 but about 19 per cent greater than in 1929. The average yield per acre in these three States was 1,119 pounds in 1931 compared with 1,139 pounds in 1930, 1,112 pounds in 1929, and the average of 1,069 pounds for the 5-year period of 1924-1928.

The large 1930 crop of Great Northern beans moved into trade channels under declining prices, the crop year beginning with a farm price of \$5 to \$5.50 per 100 pounds in September, 1930, and closing at about \$2 in August, 1931. The carry-over from the 1930 crop was unusually heavy and the December 1, 1931, farm price was about \$1.50 per 100 pounds.

RED KIDNEY AND DARK KIDNEY

The 1931 crop of 586,000 bags of Red Kidney and Dark Red Kidney was 75 per cent larger than that of 1930 and 40 per cent larger than 1929. Although production is still considerably below the 724,000 bags—the average for 1924-1928—it has been followed by a marked decline in prices.

PINTO

The 1931 crop of Pinto beans, estimated at only 1,499,000 bags compared with the record crop of 3,024,000 bags in 1930 and 2,305,000 bags in 1929, was about 11 per cent larger than the average for 1924-1928. The sharp falling off in production in 1931 was due to a substantial reduction in harvested acreage and to low yields as a result of lack of moisture. The heavy production in 1929 and 1930 was due to very high yields on large acreages. The accompanying low prices discouraged planting in 1931 to some extent and with a heavy abandonment the area harvested in Colorado and New Mexico was estimated at 481,000 acres compared with 601,000 acres in 1930 and 539,000 in 1929. The carry-over on September 1, 1931, was unusually large and prices to growers averaged only \$1.94 per 100 pounds on December 1 compared with \$2.29 on the same date in 1930, \$4.44 in 1929, and \$4.80 average for 1924-1928.

LIMA AND BABY LIMAS

The production of both Lima and Baby Lima beans in California was somewhat less than in 1930, although still considerably above the average of preceding years. The 1931 outturn of standard Limas was estimated at 1,064,000 bags compared with 1,102,000 bags in 1930, 987,000 bags in 1929, and 861,000 bags average for 1924-1928. Baby Limas in 1931 were estimated at 663,000 bags compared with 696,000 bags in 1930, 486,000 bags in 1929, and 378,000

bags average for 1924-1928. With lower prices for the 1930 crop, a smaller acreage was planted in 1931 and the production was further reduced by the drought. Prices for Limas f. o. b. San Francisco averaged \$5.30 per 100 pounds in September and \$4.80 in December, 1931, compared with \$9.40 and \$6.20, respectively, during the same months in 1930. Baby Limas showed similar declines from 1930, being quoted at \$3.25 in September and \$3.20 in December, 1931, compared with \$7.90 and \$4.50 on respective dates the previous year.

PINK

The 1931 production of Pink beans is estimated at 567,000 bags compared with 666,000 bags in 1930, 644,000 bags in 1929, and 533,000 bags average for 1924-1928. Prices for Pinks have held up better than for most beans and on December 1, 1931, averaged \$4.65 f. o. b. San Francisco compared with \$4.45 at the corresponding period a year ago.

BLACKEYE

The 1931 production of 462,000 bags of Blackeye beans was only about one-half that of 1930 and substantially under the 515,000 bags produced in 1929, but, with a carry-over of 182,000 bags greater than in 1930, prices have continued unusually low.

PEANUTS

The outstanding features of the current marketing situation for peanuts harvested for nuts are that the 1931 crop was the largest produced in more than a decade, the carry-over of old crop supplies into the current marketing season was very small, imports so far have been of small volume, and prices to growers have been lower than for any year of the twentieth century.

The production of peanuts harvested for nuts in 1931 was about 13 per cent above the large 1929 crop and about 45 per cent larger than the 1930 crop. The 1931 crop of 1,083,110,000 pounds exceeded the average annual production of the 5-year period of 1925-1929 by about 282,000,000 pounds, or 35 per cent. The 1931 harvested acreage of 1,419,000 acres exceeded the 1930 acreage by about 25 per cent and was about 4 per cent greater than the large 1929 acreage. The average yield per acre in 1931 was about 16 per cent higher than in 1930 and about 5 per cent above the average yield for the 5-year period ended with the 1929 crop. Yields approximating 1930 yields were reported in southeastern States but in Virginia, North Carolina, and in the Southwestern States yields were materially better than those reported for 1930.

The crop for the country as a whole is reported to be of exceptionally good quality. Prices to growers have declined rather consistently since the beginning of the season, and in January, 1932, were at the lowest levels of the current season, and the lowest reported in more than 30 years.

The 1931 crop was the largest produced in more than a decade, but the 1930 crop was the smallest reported since 1926 and the carry-over of old-crop peanuts into the current marketing season was lower than for any recent year and materially reduced from the large carry-over of the 1929-30 season. Stocks in Chicago, the principal receiving market, were reported to be equal to about one-third of similar stocks in October for each of the two previous seasons and are chiefly Spanish-type peanuts. Shipments of peanuts to consuming markets have been approximately 40 per cent greater this season than for the corresponding period last season in the Virginia-North Carolina section; about 75 per cent greater in the Southeast; and about 60 per cent greater in the Southwest. Considerable of this increased movement was to satisfy the current demand of a market that was relatively bare of peanuts at the beginning of the season, but consumption of peanuts and peanut products appears to have increased with the present low prices. Storage stocks in Chicago about the middle of January were reported as less than those for corresponding dates of recent years.

Average annual crushings by oil mills for the five marketing seasons, ended October 31, 1930, were approximately 60,000,000 pounds of peanuts in the shells. Takings by oil mills are usually of low-grade peanuts but in years of large production and low prices, crushings have tended to include nuts of better quality. Although peanut prices are low, prices for cottonseed oil and other sources of vegetable oils are even lower and present prices for peanuts of average quality

are still relatively too high to permit of heavy purchases by oil mills for crushing in view of the present low prices of other vegetable oils.

For the group of States (Virginia, North Carolina, and Tennessee) which produce chiefly Virginia-type nuts, both acreage and production in 1931 were very large. The 1931 production of 476,360,000 pounds exceeds the 1930 production by about 173,650,000 pounds, or 57 per cent, and is larger than the crop of 1929 by about 72,000,000 pounds, or 18 per cent. Importations for the current season of oriental peanuts which are of the Virginia type have so far been slightly heavier than during the 1929-30 season, but otherwise the smallest imports in more than 20 years and only about 18 per cent of the average annual imports for the five seasons ended October 31, 1929. For the 12-month period ended October 31, 1931, imports were the equivalent of about 14,000,000 pounds of peanuts in the shell. The carry-over of old-crop farmers' stock Virginia peanuts at the beginning of the current season was reported to be small in volume and of poor quality.

In the Southeastern States (Georgia, Alabama, Florida, South Carolina, and Mississippi), which grow both the runner and Spanish types, 772,000 acres of peanuts were harvested in 1931. This was an increase of about 29 per cent over the 1930 harvested acreage. Production in this group of States in 1931 was about 30 per cent greater than in 1930. The supply of old-crop peanuts in the Southeastern States at the beginning of the 1931-32 season was reported to have been small.

In the Southwestern States of Texas, Oklahoma, Arkansas, and Louisiana, which grow chiefly Spanish-type nuts, 220,000 acres of peanuts were harvested in 1931. Acreage in these States was increased about 33 per cent as compared to 1930. Yields for 1931 were much better than the low yields of 1930 and the total production of 118,350,000 pounds was about 69 per cent greater than in 1930. Owing to the relatively small 1930 crop, supplies of old-crop peanuts were negligible at the beginning of the current marketing season.

Difficulty in financing the purchase of fertilizers may result in some shifting of acreage to peanuts in those sections where fertilizer is used on other cash crops. In other years when the relation of the income per acre from peanuts to that from cotton has been about the same as in last season, there has been a tendency for a small increase in the acreage planted to peanuts in the following year. It is uncertain whether or not this same tendency will prevail this coming season owing to the extremely low prices for all cash crops, which may result in a reduction of the total crop acreage on the farms.

PECANS

An outstanding factor in the pecan situation is the increasing trend in production, particularly of the improved varieties. The large number of young trees of improved varieties suggests that over a period of years, production is likely to continue to increase. The price trend of pecans has been downward for a number of years prior to the severe decline in 1931. The prospects appear favorable for further increasing the demand for pecans even though the supply of walnuts and other nuts may increase.

The estimated production of pecans of improved varieties was 19,003,000 pounds in 1931, the highest of record. The production was 12,434,000 pounds in 1930, 8,814,000 pounds in 1929, and 16,988,000 pounds in 1928.

The estimated production of seedling pecans was 55,982,000 pounds in 1931, 34,035,000 pounds in 1930, 42,574,000 pounds in 1929, and 42,637,000 pounds in 1928. Combined production of seedlings and improved varieties of pecans was 74,985,000 pounds in 1931, 46,469,000 pounds in 1930, 51,388,000 pounds in 1929, and 59,625,000 pounds in 1928.

An upward trend in the production of improved varieties is evident. The production for the 4-year period 1928-1931 is approximately 45 per cent greater than for the 4-year period 1924-1927. A similar comparison for seedling pecans shows an increase of approximately 28 per cent. The increase for the total production was approximately 32 per cent.

There has been heavy planting of trees of improved varieties during the last 10 years, and a large proportion of the trees of such varieties over 10 years of age have not come into full production. A pecan-tree survey made in 1929 indicates that of an estimated total of about 8,000,000 trees of improved varieties, 65 per cent or about 5,000,000 trees were planted during the 10 years ended in 1929. Plantings during the five years ended in 1929 constituted about

42 per cent of the total number of trees improved varieties which indicates an annual increase of about 12 per cent in number of improved trees during the five years beginning in 1925. The Federal census of 1929 shows for the six coastal States from North Carolina to Mississippi that 43 per cent of the trees enumerated were classified as of nonbearing age.

According to the survey, about 6,000,000 trees, or 79 per cent of the total trees of improved varieties, were in States east of the Mississippi River; in order of importance they are Georgia, Alabama, Mississippi, Florida, South Carolina, and North Carolina. About 73 per cent of the improved trees under 10 years of age were in this group of States. There has been considerable top-working of seedling trees to improved varieties, especially in Texas and Oklahoma. The total improved trees in these two States including top-worked trees, were estimated roughly at about 1,000,000, or 15 per cent of the improved trees in the United States. Of an estimated total of approximately 10,500,000 forest and cultivated seedling trees in the United States in 1929, 27 per cent were of nonbearing age according to the survey of that year.

The early optimism regarding the average yields per tree that may be expected from improved trees at various ages has been greatly tempered by the difficulties and hazards incident to the production of the crop. Some individual growers have obtained profitable average yields, but many have not been so successful. A study of the yields obtained in 1928 from 75 representative orchards of improved varieties 15 to 19 years of age, in commercial-producing areas east of the Mississippi River, showed an average of 145 pounds per acre. Thirty-two of these orchards, having 72 per cent of the acreage in the 75 orchards had yields of from 5 to 160 pounds per acre; 22 orchards having 21 per cent of the entire acreage had a yield of from 161 to 360 pounds per acre; and 21 orchards having only 7 per cent of the entire acreage had a yield of over 360 pounds per acre. The average per orchard was 103 acres for the first group, 43 acres for the second, and 14 acres for the third.

Another phase of the 1929 survey, covering 920,000 trees of improved varieties 10 years old and over, indicated a yield in 1928 of approximately 6 pounds per tree. On a basis of 17 trees per acre, a yield of approximately 100 pounds per acre was indicated in a year considerably above average in production. All of these trees were over 10 years of age and 82 per cent were under 20 years.

Although pecan trees may bear a few nuts when 3 to 5 years of age, growers in most sections should be in a position to finance the development for a period of at least 10 years before expecting production of any consequence.

The large crop of 1931 and low prices have probably resulted in introducing the pecan to an increased number of consumers. For the first time, improved varieties of pecans are competing with English walnuts on about the same price basis.

The December 1 farm price per pound of seedling pecans was 11.3 cents in 1929, 10.8 cents in 1930, and 5.7 cents in 1931. Improved varieties of pecans sold at about 31.7 cents in 1929, at 27.8 cents in 1930, and at 13.8 cents in 1931. These prices for improved pecans compare with prices for English walnuts of 16, 20.5, and 13 cents in the three years. The December farm price of almonds was 24 cents for the short crop of 1929, 10 cents in 1930, and 8.8 cents in 1931.

For the 6-year period 1925-1930 inclusive, the total per capita supply of pecans in the United States on an unshelled basis has averaged around 0.44 pound compared with 0.68 pound for almonds and 1.03 pounds for English walnuts. Unshelled pecans reaching the consumer have probably averaged less than one-sixth of a pound per capita. A large proportion of the crop, especially seedlings, are shelled and used by confectioners and bakers.

An increase in production of English walnuts can be expected. The census of 1930 showed 2,970,000 English walnut trees in California of which 31 per cent were of nonbearing age. Of 508,000 English walnut trees in Oregon in 1930, 55 per cent were of nonbearing age. The number of almond trees in California has remained practically constant for several years.

During the last 20 years, annual imports of English walnuts on an unshelled basis have ranged from about 21,000,000 pounds to 87,000,000 pounds. For the past 5 years the average has been about 54,000,000 pounds, compared with an average of 74,000,000 pounds the previous 5 years. Almond imports for the past 20 years have ranged from 44,000,000 pounds to 94,000,000 pounds. They have averaged 57,000,000 pounds for the last 5 years compared with an average of 79,000,000 pounds the previous 5 years. During the last 5 years

annual imports of seedling pecans from Mexico have averaged slightly more than 500,000 pounds. In the previous 5 years the average imports were 1,706,000 pounds.

COTTON

In view of the detailed consideration given to the cotton outlook at the southern outlook conference held in November, this report deals mostly with the recent developments in the situation. Further treatment of the cotton situation is found in the *Agricultural Outlook for the Southern States 1931-32*, Miscellaneous Publication No. 137; *Some Facts About the Cotton Outlook in 1932*, Miscellaneous Publication No. 139; *Cotton Outlook Charts with Explanations* (rotaprint); and the outlook reports issued by the cotton-growing States.

The excessive supply of American cotton, the world depression that has reduced the consumption of cotton, and the deflation in commodity prices generally when measured in terms of gold, continue to be the dominating factors in the cotton situation. It is now clear, however, that the production outside the United States has been materially reduced. Prices of Indian and Chinese cotton have risen in comparison with prices of American cotton, and mills are turning more to American cotton in place of these foreign growths. The gains in consumption noted earlier in the season for some important countries have not been entirely maintained, but the consumption of American cotton has apparently been larger so far this season than in the corresponding months of last year. The price recovery of late October was partly lost, but prices since mid-November have been unusually stable, reflecting the quite definite establishment of the size of the crop and the influence of some very large purchasing movements, together with limited farmers' marketings. The trend of consumption in the United States for the remainder of the season is likely to depend largely upon developments in the general industrial situation and employment during the spring months. In foreign countries the influence of political developments on general economic conditions may play an important part in the cotton-textile industries. The depression in continental Europe continues to dominate the textile industries of those countries. The recovery in the British cotton-textile industry has been checked by the reduced demand in many importing countries, the boycott in India, and the competition from Japan since that country again went off the gold standard; but the boycott of Japanese goods in China, if it continues to be effective, would be moderately favorable to Great Britain. Cotton consumption in Japan has increased moderately despite agreements among manufacturers by curtailment, but exports of piece goods are low.

Rainfall in western Texas and Oklahoma has been above normal since October, but sales of fertilizer tags in the cotton States are even lower than they were a year ago, and it has become more certain that the weevils entering hibernation were more numerous and widespread than they were in the fall of 1930. The supply of farm labor continues to increase in the Cotton Belt as laborers leave industrial centers, but the supply of bank credit has become more limited than it was in the fall months.

The world supply of all cottons for 1931-32 is now estimated to be 41,600,000 bales, 4,900,000 bales larger than in 1930-31, and 5,800,000 bales larger than in 1929-30. Most of the increase has been in the carry-over. World production, estimated at 27,200,000 bales for 1931-32 is only 1,800,000 bales larger than in 1930-31 and 700,000 bales larger than in 1929-30. The successive declines in world consumption to 22,500,000 running bales in 1930-31, according to reports of the International Federation of Cotton Spinners, and the continued high production are the factors resulting in the increases in the carry-over.

American cotton not only accounted for the increases in total supply during the last two years but more than offset a decrease in foreign supplies for 1931-32. With production in 1931 estimated at 16,900,000 bales and a world carry-over of American cotton of 8,800,000 bales, the supply for 1931-32 amounts to 25,700,000 bales. This supply is 5,500,000 bales larger than in 1930-31 and 6,400,000 bales larger than in 1929-30. The increase this year over last has been a little more in production than in carry-over, but compared with 1929-30 the increase in the carry-over is over twice as great as the increase in production. The decline in world consumption of American cotton (associated with the world depression) from 15,100,000 running bales in 1928-29 to 13,000,000 running bales in 1929-30 and to 10,900,000 running bales in 1930-31, using the figures of the International Federation of Cotton Spinners, explains the increase

in the carry-over. The continued low demand so far in 1931-32 is the reason the record supply of this year is so burdensome. The large crop of 1931 was due to unusually favorable weather conditions resulting in a yield estimated at 200.1 pounds per acre, the highest since 1914, and in marked contrast with the yield of 147.7 pounds in 1930 and the average yield of 154.4 pounds per acre for the years 1920-1929. Against the increase of 35.5 per cent in the yield per acre over that of 1930, acreage was reduced 10.2 per cent, to 40,495,000 acres, according to present estimates in 1931.

Some developments have occurred that may be significant with respect to production in 1932. The movement of laborers from industrial centers has continued, and on January 1 the supply of farm laborers in Southern States was 5 per cent above that of January 1, 1931. Rainfall in the western parts of Texas and Oklahoma has been above normal since September. On the other hand, fertilizer tag sales, which are of significance with respect to yields in the eastern part of the belt, were 32 per cent lower for December in 1931 than in 1930 and were 40 per cent lower than in 1929. Subsequent reports corroborate earlier indications that more weevils entered hibernation and that they were present in numbers over a much larger portion of the belt in the fall of 1931 than in 1930. Up to the end of January, 1932, temperatures were mild.

The supply of foreign-grown cottons for 1931-32 is the smallest since 1927-28. The carry-over of foreign cottons has been increasing for each of the last four years. Owing largely to the record carry-over of Egyptian cotton, the carry-over of all foreign cottons, as far as reported, showed an increase of 500,000 bales at the beginning of the 1931-32 season. World production outside the United States, however, is now estimated at 10,300,000 bales for 1931-32, compared with 11,500,000 bales in 1930-31, and 11,700,000 bales in 1929-30. China, India, and Egypt show decreases for the year totaling around 1,600,000 bales, nearly half the decrease being for India. Russia, Brazil, and Mexico have increases totaling nearly 500,000 bales. Production in Russia for 1930-31 has been revised downward to 1,550,000 bales and the Bureau of Agricultural Economics now estimates production in 1931-32 at 1,900,000 bales. The total supply of foreign cottons of 15,900,000 bales for 1931-32 is 600,000 bales smaller than in 1930-31. Production and supplies of foreign cotton, on the whole, then, are moderate in view of the consumption of 11,600,000 running bales in 1930-31 and 12,200,000 running bales in 1929-30 as reported by the International Federation of Cotton Spinners.

The apparent supply of American cotton remaining in the United States on January 1, 1932, amounted to 17,000,000 bales compared with 12,700,000 bales on January 1, 1931. Despite this increase of 4,300,000 bales, the visible supply in the United States on January 8 was only 1,200,000 bales larger than a year earlier, doubtless reflecting a holding movement on the part of producers.

Cotton consumption in the United States in the period August through December amounted to 2,196,000 bales in 1931, 186,000 bales more than in 1930, but 542,000 bales less than in 1929. For each month after May consumption was higher in 1931 than in 1930. From September through December the trend of consumption was slightly downward, partially reflecting the declines that occurred in general industrial activity.

The trend of cotton-cloth production in the United States has been similar to that of cotton consumption. Throughout most of the 1930-31 season there was a gradual improvement, and weekly average production has been higher each month since April, 1931, than in the corresponding month of 1930. Production of cotton cloth in mills reporting to the Association of Cotton Textile Merchants totaled 18.5 per cent more for the months August through November of this season than last, but the difference for the month of December was only 8.8 per cent. After being low during the first two months of the season sales rose sharply, and in October and November were higher than in either of the last two years, but in December they lost a part of the relative improvement. Shipments declined gradually from 57,000,000 yards per week in August to 53,000,000 yards per week in November, and averaged 48,000,000 yards per week in December. Although some of the improvement in the situation noted earlier in the season has been lost, as continued declines in industrial activity and consumer buying power were reflected in the demand for cloth, stocks held by mills reporting to the association were 20 per cent lower on January 1 this year than last and unfilled orders were 11 per cent larger.

Exports of raw cotton from the United States from August through December, 1931, amounted to 4,035,000 bales, or were 2 per cent higher than for the cor-

responding period in 1930. Exports were lower than in 1930 through September; but since then they have been larger and they continued to increase through December, contrary to the usual seasonal tendency. The quantities going to the various countries show pronounced changes from previous years. The leading country this year has been Japan; exports to that country amounted to 993,000 bales, an increase of 515,000 bales over last season. According to commercial reports, exports to Japan and China together, to January 8, were over two and one-fourth times as large as during, or practically 1,000,000 bales above, the corresponding period last year. These large exports reflect the low prices of American cotton and the reduced competition from Indian and Chinese cottons rather than a high current rate of consumption in these countries. Among European countries Italy is the only one to which exports from the United States have been higher this year than last, but even to that country exports have not been as large as in 1929. For Europe, as a whole, exports through December were 900,000 bales lower than for the corresponding months last season. The decrease for Great Britain amounted to 21 per cent; for Germany, 27 per cent; and for France, 75 per cent. These exports reflect but do not measure the situations in the cotton-consuming industries in these countries. The slight improvement in the export movement to Europe during December apparently resulted from the very low stocks of American cotton in those countries.

Exports from India from August 1 to January 7 were 46 per cent lower than a year earlier and 34 per cent lower than in 1929-30 according to the Commercial and Financial Chronicle. With the period of usually large exports from India now reached, the movement has been about half that of last year. In addition to the short Indian crop, the high rate of mill consumption in India, due at least in part no doubt to the boycott of foreign goods, is probably an important factor limiting exports.

Mills have been shifting from foreign growths to American cotton. So far the changes have been limited because of the generally low level of consumption, but the trends indicate the responses to relative prices. Some shift has occurred in consumption by United States mills, although this is more a response to the tariff on long-staple cotton and to conditions affecting particular sections of the textile industry than a response to relative world prices. In Great Britain, where considerable stocks of foreign growths had accumulated, forwardings to mills of American cotton were above last season for the first 21 weeks of the season, by 93,000 bales, or 24 per cent, whereas forwardings of foreign growths were 128,000 bales, or 30 per cent, above last season, according to the Liverpool Cotton Association. On the Continent forwarding of American cotton decreased 164,000 bales, or 10 per cent for the season to January 7, according to the New York Cotton Exchange. Judging from changes in continental port stocks and exports from India the decrease in continental forwardings of foreign cottons may have been at least twice as great as the decrease in takings of American cotton for the season to January 1. Forwardings of American cotton in the Orient are reported by the New York Cotton Exchange to be 729,000 bales larger, or more than two and one-third times as great, to January 7 this season as in 1930-31. Exports from the United States to Japan and China for the season to January 7 are reported to have been 983,000 bales larger, an increase of 131 per cent over 1930-31, whereas exports from India to Japan and China were 260,000 bales smaller, a decrease of 36 per cent. The total forwardings of American cotton to foreign mills are reported by the New York Cotton Exchange to have been 669,000 bales larger than, or 24 per cent above, last season for the period to January 7. Although these forwardings figures do not measure the change in consumption, they show mill responses to the relative prices existing this season and will eventually be reflected in consumption.

On the continent of Europe the cotton-textile industries continue to be depressed, along with other industries, in response to low consumer buying power, credit and financial difficulties, and restricted export markets. In France, where the depression was so slow to develop, reduced sales and shipments of cloth have resulted in large stocks and necessitated a reduction in cotton-textile production. Reduced output of the Italian cotton-textile industry has lowered stocks of finished goods and resulted in a more favorable situation within the industry, but consumer buying power has probably been influenced by reduced employment and low industrial activity. The rather steady decline in employment in Germany and the fall in industrial activity during the late summer and fall of 1931 to the lowest levels since 1924 have reduced consumer demand for cotton goods; but the production of cotton textiles may have been

reduced sufficiently to offset these developments. Attempts to adjust output to reduced demand in the Polish cotton-textile industry have not been entirely successful. Trade restrictions of Germany, Austria, and Hungary, together with financial difficulties, continue to hamper the cotton-textile industry of Czechoslovakia. The credit difficulties in Austria still dominate the situation in that country. In Russia, plans for increased output of cotton textiles, if fully carried out, will require a quantity of cotton about equal to the estimate of the 1931 Russian cotton crop as made by the Bureau of Agricultural Economics, but during the last two years textile production has been considerably less than the plan called for.

The situation of the cotton-textile industry in Great Britain depends largely upon its export trade, particularly in the Orient. Following Great Britain's going off the gold standard in September there was a marked increase in employment in its textile industry. To some extent this may have been based on increased textile consumption within the country, but the increased ability to compete in foreign trade and the boycott of Japanese goods by China appeared to favor exports at that time. The low purchasing power and the declines in exchange rates of other countries, as they also went off the gold standard, has limited the effectiveness of Great Britain's action. India, the country's most important market, still maintains an effective boycott against foreign goods. If China maintains its boycott of Japanese goods, Great Britain should continue to some advantage in that market, but in the other oriental markets the improvement in the competitive position of Great Britain has been largely nullified by Japan leaving the gold standard. Through December exports of cotton piece goods from Great Britain continued low and production of textiles was said to exceed sales. Recently, labor difficulties are reported to have developed within the British cotton-textile industry.

Exports of cotton piece goods from Japan have been low, in recent months, partially as a result of the Chinese boycott on its goods. General industrial activity has been somewhat depressed since late in 1929 and cotton consumption has also been restricted. Cotton-textile production has been gaining in recent months, however, and this continued through December despite an agreement to curtail output. The ability of Japanese mills to meet price competition has been improved by that country again suspending the gold standard and permitting its exchange rate to decline to the level of Great Britain's. Also to the extent that Japanese mills purchased supplies of cotton while the exchange rate was at par, or nearly so, the advantage applies to the cost of the raw cotton as well as to conversion costs.

Cotton mill activity in China was at a high rate among the Chinese and British-owned mills, but was restricted among the Japanese-owned mills. Owing to the small supplies and comparatively high prices of native and Indian cotton, and to the Chinese mills turning to higher count yarns, a large proportion of American cotton is being used.

Prices in the United States fell gradually from the beginning of the season to early October, and at the low point on October 5, Middling $\frac{3}{8}$ -inch cotton at the 10 spot markets averaged 4.89 cents per pound. A part of the subsequent recovery was lost but for the month of November they averaged 5.95 cents and for December 5.78 cents per pound. Prices of Indian cotton have strengthened relative to American cotton, until there is practically no difference between the average of three grades of Indian cotton and the average of Middling and Low Middling American cotton at Liverpool. Prices of Chinese cotton in China in some cases exceed prices of American cotton. The relative prices of Egyptian and American cotton in Liverpool have not changed materially.

Preliminary estimates of the staple lengths of cotton ginned in the United States prior to December 1, 1931, show a considerably smaller proportion of the crop with staple lengths shorter than $\frac{7}{8}$ of an inch and considerably larger proportions of the crop with staple lengths $1\frac{1}{8}$ inches and longer than for any previous year for which data are available. Since August, 1931, discounts for cotton with a staple length of $\frac{3}{8}$ of an inch compared with $\frac{7}{8}$ of an inch have narrowed considerably and in December, 1931, these discounts, when expressed in points per pound, were narrower than at any other time for which data are available; and when expressed as percentages of Middling $\frac{3}{8}$ -inch cotton, were narrower than at any other time since October, 1929. Premiums for staple lengths longer than $\frac{7}{8}$ of an inch since September, 1931, when expressed in points per pound, have continued to decline and in December, 1931, were smaller than at any other time since 1924. When expressed

as percentages of the price of Middling $\frac{7}{8}$ -inch cotton, premiums have declined since September, 1931, but in December, 1931, the staple premiums for each of the longer lengths except $1\frac{1}{8}$ and $1\frac{3}{8}$ inches were greater, on the average, than during the season of 1930-31.

TOBACCO

The present tobacco situation is characterized by large supplies of leaf, a diminishing rate of consumption of tobacco products, declining exports, and very low prices to growers. These characteristics have resulted primarily from the curtailed buying power of consumers, the relatively high prices of tobacco products, disturbed conditions in international finance, and increasing tariffs in foreign countries. For some of the types, increased competition from foreign-grown leaf also has been an important factor.

The total consumption of tobacco products in the United States, as shown by internal revenue stamp sales, declined about 4 per cent in 1931 as compared with 1930; in Europe the decline was about 10 per cent. This is in sharp contrast with other recent years, when tobacco consumption in most countries has been increasing. Consumption by classes of products in the United States for 1931 compared with 1930 was as follows: Cigars, 9.7 per cent less; cigarettes, 5 per cent less; manufactured tobacco (smoking and chewing combined), 0.2 per cent less; snuff, 1.3 per cent less. As indicated by the greater decline in cigarettes than in smoking mixtures and the shift from high-priced to lower-priced cigars, consumers have been using cheaper products as well as smaller total quantities. Similar changes in consumption have been reported in European countries.

Of the important cigarette types, flue-cured production was reduced about 24 per cent in 1931 as compared with 1930, but this reduction was largely offset by an increase in stocks, so that the total supply was only 8 per cent below that of 1930. With weaker foreign and domestic demand prices declined about 30 per cent below the low level of 1930. Burley production was expanded again in 1931, and stocks continued to increase. Disappearance, on the other hand, showed a decrease and prices are about 40 per cent lower than in 1930. The production of Maryland tobacco was increased materially in 1931. Prices recently have declined about 25 per cent, partly because of the low quality of the 1930 crop sold throughout 1931, and the increased supplies available for the current season.

In the dark fire-cured and dark air-cured districts production and stocks both were increased in 1931. Weakened foreign and domestic demand, reflecting the world-wide trend of consumption toward the lighter types of tobacco, have adversely affected the market for all these types and prices for each of them appear to be at or near record low levels.

Production of most cigar types was increased in 1931 and the market for all of them shows pronounced weakness. The consumption of cigars has diminished during the last two years at a rate that involves a decrease of 10,000,000 to 15,000,000 pounds of tobacco a year in the requirements of cigar manufacturers.

CIGARETTE TYPES

The domestic consumption of flue-cured, burley, and Maryland tobacco is mainly in the form of cigarettes, smoking mixtures, and chewing tobacco. Domestic cigarette consumption rose rapidly during the last decade, and the quantity of leaf tobacco of all types used for manufacturing cigarettes in 1929 was about 120 per cent greater than the quantity used in 1921. Cigarette production began declining during the latter part of 1930, and for the year totaled about 0.5 per cent above the 1929 volume. For the first half of 1931 cigarette production was about the same as in 1930, but during the latter half of 1931 it declined 10 per cent, so that for the year production was about 5 per cent lower than for 1930.

The trend of consumption of manufactured tobacco has been downward during recent years. Since August, 1931, it has been higher than in the corresponding months of 1930, the increase for the six months ended December 31, 1931, being about 3 per cent. Sales of smoking and chewing tobaccos, both of which are included under manufactured tobaccos, can not be separated, but there is little doubt that sales of chewing tobacco are still declining, and that sales of smoking tobaccos are now increasing. This may be attributed in part to the increased use of granulated smoking tobacco in hand-rolled cigarettes.

FLUE-CURED TOBACCO, TYPES 11, 12, 13, AND 14

The supply of flue-cured tobacco is 8 per cent lower than that of a year ago, but owing to weaker foreign and domestic demand, prices paid to growers are the lowest since 1909. The weakness in the demand situation is due primarily to widespread unemployment resulting in diminished sales of cigarettes, to increased foreign tariffs, and to unfavorable rates of exchange. The combined effect of these adverse conditions has more than offset the effect of reduced supplies of flue-cured tobacco, and prices to growers to December 1 have averaged only 8.9 cents per pound compared with 12 cents per pound for the previous crop.

The production in 1931 is estimated at 657,715,000 pounds, the lowest since 1926, but stocks on hand July 1, 1931, were larger than a year earlier, and the total supply of 1,334,467,000 pounds on July 1, 1931, was only 8 per cent lower than the supply of July 1, 1930.

The domestic consumption of flue-cured tobacco is mainly in the form of cigarettes, granulated smoking tobacco, and plug chewing tobacco. The changing character of the domestic demand for flue-cured tobacco, aside from the temporary effects of current economic conditions, is apparent in the effect on the respective types of flue-cured tobacco. The most northern of these types, type 11, is relatively darker and heavier than types of more southern growth. Being somewhat less suited to the needs of cigarette manufacturing, and running correspondingly more to the chewing grades, it appears to suffer more from the decreased cigarette and chewing tobacco consumption, and to respond less to improved conditions in the cigarette industry.

Approximately two-thirds of the total production of flue-cured tobacco during recent years has been exported. Exports for the year ended June 30, 1931, totaled 432,738,000 pounds redried weight, and were greater than in any previous season. Exports for the six months ended December 31, 1931, were about 19 per cent below those during the corresponding months of the 1930-31 season, notwithstanding the especially low prices prevailing during the current marketing season. The decline in exports is apparently due to declining foreign consumption resulting from industrial unemployment, to high prices of manufactured tobaccos, to unfavorable foreign exchanges, and to increased competition from foreign-grown tobaccos. The United Kingdom in the past has been the leading foreign buyer of flue-cured, and during recent years takings by the United Kingdom have amounted to about 45 per cent of the total flue-cured exports. The depreciation in the exchange rate of the pound sterling and increased duties on imported tobaccos affected adversely importations of flue-cured tobaccos during 1931, the decline during the last six months of the year amounting to 29 per cent. In continental Europe, which usually accounts for from 10 to 12 per cent of the flue-cured exports from the United States, conditions are similar to those in the United Kingdom.

Exports to China usually rank second to those of the United Kingdom in importance, and during recent years have approximated 25 to 35 per cent of our total flue-cured exports. In 1931, however, China took first place. Continued expansion of the cigarette output in China brought about increased imports of flue-cured tobacco, but owing to the unfavorable exchange rate the Chinese takings have shifted to lower grades. The domestic crop in China, the manufacturing uses of which are similar to those of flue-cured, is reported to be from 15 to 20 per cent larger than in 1930. Even with the larger crop China's production will be equal to only about one-third of the leaf requirements of China's tobacco manufacturers, according to reports.

If the rate of exports during the last half of 1931 is maintained during the first half of 1932, and domestic consumption continues about as at present, some reduction in stocks from the high point reached on July 1, 1931, appears likely by the beginning of the next marketing season.

BURLEY, TYPE 31

The production of burley tobacco reached successively new high levels in each of the years 1929, 1930, and 1931, the latter crop being estimated at 465,000,000 pounds. Consumption, however, has not increased materially in recent years, and stocks of old tobacco have accumulated.

Domestic consumption seems to have increased only about 1 per cent a year during the last 10 years. Larger quantities have been used in making cigarettes but smaller quantities have been used for chewing and smoking tobacco.

Exports continue to be relatively unimportant. Total disappearance for the year ended October 1, 1931, was 283,000,000 pounds, which was less than for any year since 1926.

The large crop of 1931, together with the stocks of 437,000 pounds on October 1, 1931, made a total supply of 902,000,000 pounds at the opening of the 1931-32 market season. This was 18 per cent larger than the previous record supply of 1926 and equal to approximately three years of total disappearance, whereas the usual total supply is equivalent to only about two years of disappearance. Stated differently, if consumption and exports continue at the present rates and average yields are obtained, the acreage of burley tobacco in 1932 would have to be reduced more than 30 per cent to bring about any reduction in the total supply by October 1, 1932.

MARYLAND, TYPE 32

Developments in the Maryland tobacco situation are confused as a result of the nature of the 1930 crop, which was carried to market during 1931. That crop, owing to unusual weather conditions during growth, appears to lack the fine burning quality usually associated with Maryland tobacco. Apparently because of this, there has been but little sale for some grades, particularly those in the heavy leaf or "dull" group. Prices for Maryland tobacco as reported have been better maintained than for almost any other type. In recent months they have declined somewhat, possibly as a result of the low burning quality, but the lack of sale for certain grades makes it difficult to interpret present prices.

Production of Maryland tobacco in 1931 of 31,540,000 pounds was about 90 per cent larger than the very small 1930 production. The greatly increased production was largely due to yields much better than the low yields of 1930, since the 1931 acreage increased only about 11 per cent. Disappearance of this tobacco for the year ended October 1, 1931, was greatly reduced from the level of recent years and notwithstanding the small 1930 crop, stocks on October 1, 1931, were about 5,000,000 pounds greater than a year earlier. The total supply of 53,600,000 pounds on October 1, 1931, was about 60 per cent larger than the supply of the previous year and the largest supply figure reported in more than 15 years.

FIRE-CURED TOBACCO

Since the World War producers of fire-cured tobacco in the United States have been faced with a declining market for their products. Exports which formerly accounted for about 80 per cent of the total production have been greatly reduced. For the Virginia and Kentucky-Tennessee types combined the reduction has been from approximately 200,000,000 pounds exported in 1923 (the first year for which specific data are available) to 81,000,000 pounds in 1931. This reduction has had two chief causes: (1) Consumers have been turning from the stronger and heavier forms of tobacco to the milder forms; (2) the countries which formerly bought most of this tobacco have been encouraging the production of similar types at home and in their colonies. In addition, the fiscal and economic difficulties growing out of the current depression have further restricted these foreign outlets.

Production in the United States was expanded in 1931 by increased acreage and larger yields per acre. Also, since the combined domestic consumption and exports during the year ended October 1, 1931, were smaller than the 1930 crop there was an increase in stocks. The domestic uses for fire-cured tobacco are narrow in scope and exacting in respect to grades of leaf required. Thus the sharp curtailment of foreign orders leaves much intrinsically good tobacco without an effective market, and a large quantity of low-grade tobacco which scarcely will bring selling charges.

VIRGINIA FIRE-CURED, TYPE 21

The acreage of Virginia fire-cured tobacco in 1931 was about 8 per cent greater than in 1930, and 37 per cent greater than in 1929, when production was about in line with disappearance. Stocks of old tobacco on hand on October 1, 1931, were slightly larger than a year earlier, and the total supply was estimated at about 59,000,000 pounds, or 16 per cent above the indicated supply for the 1930-31 season. Disappearance declined to a new low point in 1931 and for the year ended October 1 was about 6,000,000 pounds less than the

estimated production for that year. Exports for 1931 were 11,598,000 pounds, and much lower than for any year since 1923, when statistics of tobacco exports by types first became available.

Although the quality of the 1931 crop is reported to be low, it is probably higher than in 1930. Prices to growers to January 1, 1932, averaged 4.7 cents per pound, the lowest shown by department records and nearly 50 per cent lower than those paid for the 1930 crop.

KENTUCKY AND TENNESSEE FIRE-CURED, TYPES 22 AND 23

In spite of the very low prices that prevailed for the 1930 crop, particularly in the western districts, the acreage of Kentucky-Tennessee tobacco was increased in 1931. This increase, combined with the larger yield per acre in 1931, gave a production of 156,000,000 pounds, which was materially in excess of the usual disappearance of these types. The total supply of 285,000,000 pounds on October 1, 1931, was considerably larger than for other recent years and was the largest since 1926.

Exports declined from the relatively high level of 105,441,000 pounds in 1930 to 69,206,000 pounds in 1931. This was 13 per cent less than the previous low figure of 79,777,000 in 1929. Domestic consumption apparently has not changed much in recent years and total disappearance for the year ended October 1, 1931, was only 113,000,000 pounds. If this rate of disappearance continues during 1932, and growing conditions for the year prove to be normal, a reduction in acreage of more than 23 per cent would have to be made to bring about any reduction in total supply by the opening of the next market season.

HENDERSON FIRE-CURED, TYPE 24

In common with other fire-cured types, the exports of Henderson fire-cured tobacco fell off sharply in 1931, resulting in an increase in stocks from 736,000 pounds on October 1, 1930, to 3,102,000 pounds on October 1, 1931. At the time when disappearance was showing this unexpected decrease production rose from 8,940,000 pounds in 1930 to 10,944,000 in 1931, so that the total supply increased 45 per cent. These facts have contributed to the weakest marketing position and the most unfavorable outlook that have confronted this type in years.

DARK AIR-CURED TOBACCO

The domestic uses of dark air-cured tobacco are confined to the manufacture of chewing and smoking, especially the former. This market outlet is constantly narrowing, both here and abroad.

1-SUCKER, TYPE 35

The acreage and production of 1-sucker tobacco in 1931 were not greatly different from those of the two preceding years. However, since production has continued to outrun consumption, stocks have increased and the total supply of 62,000,000 pounds on October 1, 1931, was larger than at any time since 1926. Disappearance for the year ended October 1, 1931, was only 22,000,000 pounds.

GREEN RIVER, TYPE 36

With the fourth successive increase in acreage, the 1931 production of 37,000,000 pounds was larger than for any year since 1926, being 9,000,000 pounds larger than the disappearance for the previous year. Stocks of 24,000,000 pounds on October 1, 1931, showed a slight increase over the preceding year, and the total supply of 61,000,000 pounds was 13 per cent larger than that of 1930. Exports, which usually account for between one-third and two-fifths of the total disappearance, were extremely small in 1931, amounting to only 5,500,000 pounds.

VIRGINIA SUN CURED, TYPE 37

The production of sun-cured tobacco in 1931 of 4,800,000 pounds was about 44 per cent above the small 1930 crop. The increase was largely due to improved yields, since the 1931 acreage was only 3 per cent larger than that of

1930. Stocks on October 1, 1931, were the lowest in years, but the total supply of 8,600,000 pounds on that date was about 18 per cent larger than the supply of the previous season.

CIGAR TYPES

Producers of cigar tobacco have been confronted by a narrowing outlet for their leaf. Production, on the other hand, was 4 per cent larger in 1931 than in 1930. This increase was due largely to improved yields per acre, principally in the Pennsylvania Seedleaf district, rather than increased acreage. Stocks of most types increased during the year so that the total supply on October 1, 1931, was larger than at any time during the last five years.

During the last two years, in response to economic conditions, cigar consumption has declined at a pronounced rate, and for 1931 it was about 9 per cent less than 1930. This has taken place in spite of a further substitution of cheaper cigars for the higher-priced classes. Other changes taking place in the industry have been a continuing trend toward concentration of production into fewer and larger units and the gradual replacement of independent leaf dealers by company buyers. The net results of these developments have been a contraction in the market outlet and a lowering of the price range for cigar tobacco.

PENNSYLVANIA FILLER, TYPE 41

The acreage of Pennsylvania filler tobacco in 1931 was not greatly different from that of other recent years. Because of increased yields, however, production was somewhat larger than usual, and materially larger than in 1930, when the crop was adversely affected by drought. Stocks on October 1 were about 10 per cent smaller than for other recent years, but production was enough larger to give a total supply of 134,000,000 pounds, or approximately equal to the average of the last five years. Disappearance of 44,800,000 pounds for the year ended October 1, however, was materially smaller than for the 1929-30 season and the smallest on record. Although Seedleaf always has been one of the most popular of domestic filler tobaccos, apparently its disappearance has been affected adversely by the decreased consumption of cigars.

MIAMI VALLEY FILLER, TYPES 42, 43, AND 44

The acreage of Miami Valley filler tobacco was increased in 1931 in spite of the lower average prices received for the 1930 crop. Although production for the year was only slightly larger than in 1930, it was the second largest crop since 1920. Stocks also increased materially in 1930, resulting in a total supply on October 1 of 87,000,000 pounds, which was larger than for any year since 1926. Disappearance, on the other hand, continued to decrease during the year, and for the 12 months ended October 1, 1931, was only 14,500,000 pounds. This is by far the smallest disappearance on record, it being only about half as large as for other recent years, and about one-fourth as large as in pre-war times. Apparently the readjustments that have been taking place in the cigar industry have reacted more unfavorably upon Miami Valley tobacco than upon any of the other domestic fillers.

NEW ENGLAND BROADLEAF, TYPE 51

Following the small crop of 12,057,000 pounds in 1929, production of New England broadleaf increased to 18,540,000 pounds in 1930 and 18,613,000 pounds in 1931. Stocks were low in 1930 as a result of the small 1929 crop, but increased again in 1931. The total supply on October 1, 1931, was 48,561,000 pounds, an increase of more than 5,000,000 pounds over the two previous years. At the same time these increases in supply were taking place, disappearance fell from 18,264,000 pounds during the 12 months ended October 1, 1930, to 13,401,000 pounds during the year ended October 1, 1931.

NEW ENGLAND HAVANA SEED, TYPE 52

Production of New England Havana seed remained at about 17,800,000 pounds in 1929 and 1930, but fell to 15,173,000 pounds in 1931. Owing to rapidly decreasing disappearance, however, stocks have increased in each of the last two years and the supply on October 1, 1931, was 53,438,000 pounds, compared with 50,783,000 pounds one year earlier and 49,195,000 pounds two

years earlier. From 1922 to 1929 the trend of disappearance of this tobacco was distinctly upward, and for the season ended October 1, 1929, disappearance was about 23,000,000 pounds. Since then disappearance has declined rapidly, amounting to only 12,518,000 pounds during the year ended October 1, 1931. Because of the decreasing demand for tobacco of this type, the price paid to growers declined from an average of about 31 cents per pound for the 1929 crop to an estimated average of about 15 cents in 1931.

WISCONSIN BINDER TOBACCO, TYPES 54 AND 55

The production of Wisconsin tobacco during the last four years has averaged about 51,000,000 pounds. The disappearance during the same period has averaged about 41,500,000 pounds. This excess of production over disappearance has resulted in an accumulation of stocks that has greatly depressed the market. The effects are likely to be felt for at least another year. Production decreased to 49,385,000 pounds in 1931 from 55,765,000 pounds in 1930, but stocks on October 1 showed an increase of about 20,000,000 pounds. The resulting net increase of 13,515,000 pounds in the total supply, occurring at a time of diminishing consumption, resulted in lower prices to growers. There are no present indications that consumption will increase.

BROOMCORN

Domestic requirements of broomcorn during recent years have averaged about 45,500 tons and exports about 4,500 tons, making a total utilization of approximately 50,000 tons. To produce such a crop with the 5-year average yield (1927-1931) of about 315 pounds per acre would require 320,000 acres. In 1931, 47,900 tons were harvested from 309,000 acres.

During the last 15 years yields of broomcorn have ranged roughly from 250 to 360 pounds per acre. With a yield as low as 250 pounds per acre, 320,000 acres would produce 40,000 tons. The same acreage, with a yield of 360 pounds per acre would result in a crop of 57,000 tons, or a total supply (including carry-over) of about 80,000 tons compared with the average annual supply of 75,000 tons for the 5-year period 1927-1931.

The annual carry-over of brush from the production of the previous year has been gradually reduced from some 32,000 tons on May 31, 1927, to less than 23,000 tons on May 31, 1930. Stocks on May 31, 1931, were about 24,000 tons. If the consumption for the current 1931-32 season is equal to the average for the past few years, 26,000 tons would need to be taken from the 1931 crop of less than 48,000 tons. This would leave a carry-over on May 31, 1932, of less than 22,000 tons. On the other hand, new-crop movement to December 1, 1931, was slightly less than 25,000 tons, compared with about 29,000 tons in 1930 and more than 30,000 tons in 1929 for the corresponding period.

As the uses of broomcorn are practically limited to the making of brooms and the seasonal demand is satisfied at about 50,000 tons, a crop much greater or less than these requirements usually results in a decided change in the farm price.

Although the farm price of broomcorn shows a decided decline during the last three years, this reduction in price is in about the same proportion as the reduction in the price of grain sorghums, corn, and cotton—the principal cash crops that compete with broomcorn. Broomcorn growers in 1931, therefore, did not suffer greater comparative reductions in prices than did growers of competing cash crops in the same areas.

Broomcorn production requires experienced handling, special equipment, and an adequate supply of labor. As buyers do not ordinarily visit unimportant outlying districts, growers in communities that have a total acreage sufficient to assure a market have a material advantage over those not so situated.

RICE

Since 1920 rice acreage has been maintained at an average of about 960,000 acres. This acreage with average yields would produce a supply sufficient for the usual domestic needs and leave a surplus for export and carry-over about equal to that of recent years.

The 1931 rice crop for the United States was estimated at 45,014,000 bushels (12,504,000 barrels) of which 37,014,000 bushels (10,281,667 barrels) were

estimated for the southern belt and 8,000,000 bushels for California. The revised estimate for the 1930 crop is 44,299,000 bushels (12,305,300 barrels), and a 5-year 1926-1930 average crop of 40,876,000 bushels (11,354,500 barrels). The carry-over as of August 1 was estimated to be the equivalent of 117,000,000 pounds of milled rice (1,170,000 barrels or 4,200,000 bushels rough rice), which is 37,000,000 pounds larger than the carry-over a year earlier but about the same as the average carry-over of the last five years.

The disappearance of the 1930-31 supplies of rice in the United States indicates somewhat smaller domestic takings with sales to island possessions and exports somewhat above average. Exports of rice totaled 221,702,000 pounds (7,981,500 bushels) during the 1930-31 crop year as compared with 224,364,000 pounds (8,077,300 bushels) for the 1929-30 crop year and an average of 209,843,000 pounds (7,554,570 bushels) for the 5-year period 1925-26 to 1929-30. Sales to Porto Rico during 1930-31 totaled 212,952,000 pounds (7,666,490 bushels), which was the largest annual movement to this market. Shipments to Hawaii during the 1930-31 crop year totaled 89,183,000 pounds (3,210,690 bushels), which is the largest annual movement to Hawaii. There has been a steady upward trend in the shipments of United States grown rice to Porto Rico and Hawaii. The annual shipments to Porto Rico appear to have been affected more by changes in prices than have the annual shipments to Hawaii.

The domestic market, consisting of continental United States and insular possessions, normally takes between 900,000,000 and 1,000,000,000 pounds of rice each year. The total quantity exported usually varies with prices more than do the takings of the domestic market. For the five years 1926-27 to 1930-31, when domestic prices were relatively low, annual exports averaged about 250,000,000 pounds. During the period 1923-24 to 1925-26, when domestic prices were high, annual exports averaged only 865,000 pounds. Almost 50 per cent of the total exports during 1930-31 were to Germany, Argentina, Chile, and the United Kingdom. During the last two years, exports to Germany, Argentina, and the United Kingdom have decreased, whereas exports to Chile have been increasing. The decline in total exports from 1928-29 to 1930-31 can be accounted for, in large part, by the net decrease in the takings of those countries. During this same period the total net German rice imports declined 35 per cent whereas imports of United States rice have declined 30 per cent. Total net imports into the United Kingdom during this period declined 12 per cent whereas imports of United States rice declined 28 per cent. For Argentina net imports increased 36 per cent during this period whereas imports of United States rice decreased 50 per cent, reflecting the increased competition from Brazil.

The accounted-for stocks and movement of rice for 1930-31 were as follows: Continental United States, including Alaska, 690,063,000 pounds; Porto Rico, 212,952,000 pounds; Hawaii, 89,183,000 pounds; total domestic, 992,198,000 pounds; exports, 221,702,000 pounds; and 117,000,000 pounds (milled rice equivalent) carried into the 1931-32 season makes a total of 1,330,900,000 pounds for the year. The apparent supply for milling for the 1931-32 season, based on stocks as of August 1 and estimated production is equivalent to 1,302,000,000 pounds of milled rice.

SOUTHERN BELT

The movement of new-crop rice to mills during the period August through December, 1931, totaled 5,520,000 barrels as compared with 5,639,000 barrels for the corresponding period in 1930. The movement of milled rice into consuming channels during this period amounted to 466,900,000 pounds as compared with 476,800,000 for the corresponding period last year and a 5-year (1927-28 to 1931-32) average of 473,200,000 pounds. Stocks of rough rice in first hands on January 1, 1932, were estimated to be 4,856,000 barrels, as compared with 4,684,000 barrels a year earlier. Shipments to Porto Rico for the first five months of the 1931-32 crop year totaled about 90,191,000 pounds, which was about the same as the Porto Rico takings for the corresponding period last year and above the average of the last five years. Exports from southern ports for the first five months of the current crop year totaled 80,608,920 pounds compared with 92,011,012 for the corresponding period last year. Stocks of rough and milled rice in the millers' hands on January 1, 1932 were the equivalent of about 196,400,000 pounds of milled rice as compared with 164,200,000 pounds a year earlier and a 5-year (1926-27 to 1930-31) average of 226,800,000 pounds.

Prices of milled rice during the current crop year to January were at a lower level than at any time since the spring of 1921. Fancy Blue Rose at New Orleans averaged \$3.21 per 100 pounds for August. Subsequent declines resulted in a price of \$2.75 for the middle of October. Quotations on this variety and grade for January 4, 1932, ranged from \$2.87½ to \$3. Rough rice prices at Louisiana mills during early October were averaging about \$2 per barrel. Quotations on Blue Rose rough at these points on January 4 ranged from \$2.40 to \$2.60 per barrel.

CALIFORNIA

Supplies of California rice for milling this year appear to be the equivalent of about 250,000,000 pounds as compared with 230,000,000 pounds for 1930-31. Shipments of California rice to Hawaii during the period August 1 to December 31, 1931, totaled 31,550,000 pounds as compared with 36,517,000 pounds for the corresponding period last year. Exports of California rice for these same periods were 1,746,144 pounds and 3,365,671 pounds, respectively.

The outlook for exports of California rice to Japan during the remainder of this crop year may be indicated to some extent by the supply situation in Japan. The Japanese crop is officially reported to be the equivalent of 17,287,000,000 pounds of brown rice. The carry-over from the 1930-31 crop was about 2,871,000,000 pounds, making a total domestic supply of 20,169,000,000 pounds. The consumption in Japan during 1931-32 is estimated to be 22,935,000,000 pounds. Therefore, the deficit in domestic supplies appears to be 2,766,000,000 pounds. This is the largest deficit for any year during the last 10 years. The next largest was in 1926-27, which amounted to 1,702,000,000 pounds. During 1926-27 Japan took about 92,000,000 pounds of California rice. Usually a large percentage of the deficit in Japan proper is made up by shipments from Taiwan and Chosen, the remainder being supplied from imports. The bulk of the Japanese imports came from Asiatic surplus-producing countries and from California. This year the exportable surpluses of these Asiatic surplus-producing countries are reported to be smaller than the record supplies of last year. Prices in these countries, however, continue at relatively low levels. The supply situation in Japan at the present time appears favorable for imports of California rice, but prices in the Asiatic surplus-producing countries continue at low levels, and it is probable that the bulk of the Japanese imports will come from that section.

The limiting factor in Japanese takings of California rice is the San Francisco and Tokyo price relationship. The Tokyo price of brown rice is usually from 80 cents to \$1 per 100 pounds above the San Francisco price of brown rice when Japan is buying California rice. Middle quality brown at Tokyo on January 6 was quoted at \$2.22 per 100 pounds and No. 1 Brown at San Francisco on January 4 at \$2.65.

The price of fancy California-Japan at San Francisco has declined from \$3.52½ on October 5 to \$2.95 on January 4, 1932. During the corresponding period last year the price of this grade of rice advanced from \$3.57 to \$3.60 per 100 pounds. Prices of No. 1 paddy f. o. b. Sacramento growing points have been accordingly lower this year, averaging from \$1.25 to \$1.35 per 100 pounds during the first part of October and \$1.30 to \$1.35 during the first week of January, 1932.

SUGAR

Low prices and restrictive measures appear to be reducing world sugar production. Reports to date indicate that the 1931-32 world beet and cane sugar production probably will be about 28,700,000 short tons, as compared with the record crop of 31,984,000 short tons harvested in the previous season. The decrease in production, however, is offset in part by an increase in stocks. The total stocks of sugar reported at the beginning of the 1931-32 sugar season (September 1, 1931) amounted to 8,335,000 short tons, which is 1,424,000 short tons in excess of the stocks at the beginning of the previous season. Of this amount, however, 2,800,000 short tons have been segregated, to be held off the market and to be released gradually over a period of five years. Should the world's sugar consumption during the present season equal that of last season, the world's stocks at the end of the season will be less than at the beginning of the season.

A more detailed discussion of the sugar situation was presented in the Agricultural Outlook for the Southern States, 1931-32, Miscellaneous Publication No. 137, pages 27-29.

HONEY

No authoritative figures exist on the total number of colonies of bees in the United States and no current figures are available on relative production of honey from year to year. But the crop of 1931 is known to have been one of the smallest in several years in the important commercial producing areas of the western Mountain States and the North Central States, and in some of the Pacific coast areas.

Demand for honey in large lots, both for domestic use and for export, has continued light during the last year. Although prices are now the lowest since before the World War, price declines during the past year have been less than for most other farm crops. This was partly because of the short crop, but also, beekeepers have increased their efforts to dispose of honey locally, by retail sales or through near-by stores, thus lessening the supplies of honey entering the commercial channels of trade.

Total exports for the 12-month period ended December 31, 1931, were about 4,200,000 pounds. Although this was slightly higher than for the preceding 12 months, it is a heavy drop from the exports of the fiscal year ended June 30, 1929, when nearly 12,000,000 pounds were exported. Great Britain has replaced Germany as the leading foreign market for American honey, with Germany in second place.

The outlook is favorable for a good flow of nectar this season. Fall and early winter precipitation, mostly in the form of rain in the East and of snow in the western mountain regions, has been sufficiently abundant so that beekeepers in most important commercial areas are optimistic over the possibilities of this year's nectar flow. On the other hand, the condition of colonies appears to be less satisfactory. Owing to late brood rearing, colonies generally went into winter quarters strong in young bees. The warm fall enabled bees to work exceptionally late on nectar-bearing plants, so that the fall honey flow was generally ample for ordinary requirements and in some cases furnished a surplus. Because of the unprofitable 1931 season, however, less care than usual was taken to prepare the apiaries for winter, and the mild fall and early winter resulted in so much unseasonal activity on the part of the bees through most of the Northern States that consumption of stores has been heavy and colony strength has been weakened. Feeding will be necessary in many apiaries if the colonies are to survive and extra attention will have to be given the colonies in the spring in areas in which the main honey flow comes early. Bees wintered in cellars require close watching during mild winters like this one so that they may be moved out of the cellar at least temporarily if they become too restless. Even if losses of colonies this winter should be no greater than usual the early strength of the colonies may be below average because of excessive winter activity.

THE LONG-TIME AGRICULTURAL OUTLOOK

In this portion of The Agricultural Outlook for 1932 there are presented certain general aspects of the agricultural situation which could not well be included in the detailed discussion of the outlook for individual agricultural commodities and other specialized sections of this report. For the most part, the longer time view, rather than the 1-year look ahead, is adhered to in this general discussion.

THE GENERAL PRICE LEVEL

When a significant revival in business finally arrives it will probably be accompanied by price stability or by a recovery in prices from the low points of this depression. Much will depend on developments in national and international financial conditions, in trade relations, in efficiency in the use of gold and other credit factors, in trends of production and improvements in industrial and agricultural technic.

From the high point of inflation in 1920 prices have fallen to the present low level in two major collapses, the first of about 44 per cent between the summer of 1920 to the summer of 1921 and the other after a period of comparative stability, a drop of about 33 per cent between the winter months of

1929 and the winter months of 1931. Viewing the entire price movement of the past 11 years, it now appears to have been but the aftermath of war-time inflation not unlike the downward trends in prices which set in after the inflated price levels of the Civil War period and of the period 1812-1815. Each of the earlier periods of major price inflation was followed by long-time downward trends for about 30 years.

These earlier periods, 1815-1845 and 1865-1896, were characterized by temporary price recoveries associated with periods of industrial prosperity and credit expansion, and as these periods of prosperity gave way to depression, commodity prices went to still lower levels. Agricultural prices shared in these cyclical movements. Not unlike these earlier experiences was the temporary recovery in prices from the low levels of 1921 to the higher level of 1925, a recovery associated with the industrial and credit expansion which began in 1921 and, as in the former periods, the succeeding depression of 1929-1931 has been accompanied by commodity prices falling to a level well below that of the previous depression.

The course of prices during the few years preceding 1931 indicated that there were forces making for a downward trend in the general price level. Even during the prosperity period 1923-1929 there was evident a persistent downward trend in nonagricultural prices in the United States and a downward trend in the price levels of certain foreign countries. Several countries had shifted from an inflated currency to a previous gold basis, or stabilized their currencies upon new gold bases, or adopted other financial policies that contributed to a world-wide contraction in currency and credit available for an expanding volume of production and trade. The expansion in world industrial and agricultural production in the prosperity years up to the beginning of the present depression, was marked by rapidly improving technic resulting in or accompanied by reduction in unit costs in many lines of production. In addition to their effect on prices through increasing total production, the reductions in costs per unit have tended through competition to lower prices. Although production has been greatly curtailed during this depression, many industries have placed themselves in a position to produce in the future at still lower costs per unit through the further development of improved methods, through their ability to obtain raw materials at much lower prices, and through some reduction in wages.

Certain of the policies pursued by some foreign countries up to 1931, leading to lower prices, have been suddenly reversed. England and a number of other countries went off the gold standard during the last half of 1931. By these actions, they have cheapened their various media of exchange, and prices in some important foreign countries are already somewhat higher, but are not sufficiently higher to offset the depreciation in exchange. In the United States prices are still declining (January, 1932).

So far during this depression, as during most major depressions, prices of farm products have fallen more than have prices of nonagricultural products. The latter have been partly sustained by the great curtailment in production; it is partly because of the inability of agriculture to make such drastic curtailment that agricultural prices have fallen more.

Inasmuch as increasing gold production is one of the factors that eventually tend toward higher prices, it is worth noting that during recent years, the annual increases in output have been small compared with the marked annual increases that took place during the period 1875-1878 and 1891-1895, the years that immediately preceded general price advances. Gold production in 1930 was stimulated by the increasing value of gold in terms of falling commodity prices and lower costs of production. This increase in the value of gold has recently brought forth from India gold not hitherto used for monetary purposes. If a marked expansion in gold production should occur, and especially if it should continue for several years, the release of gold for credit purposes would be one of the factors counteracting any deflationary tendency.

FOREIGN COMPETITION AND DEMAND

Conditions in foreign countries continue to reduce demand abroad for the agricultural products of the United States. The conditions of the last two years have encouraged many importing countries to resort to measures increasing the self-sufficiency of their agriculture, while many of the surplus-producing countries without profitable alternatives have generally maintained production in the face of the declining prices. In some cases shifts have been made which may prove to be only temporary. Doubtless significant improve-

ments in business in important consuming countries would tend to cause some relaxation of trade barriers and consequently to check movements toward self-sufficiency in agricultural production. In the long run, specialization in production for international trade is likely to continue, but even in this the United States may meet increasing competition for many agricultural products from surplus-producing countries.

As indicated in the section on Foreign Competition and Demand of this report, the severest competition is likely to be in wheat from Russia, Canada, Australia, and Argentina. Doubtless exports from all of these countries can be increased but they are not likely to be increased in the face of such low prices as prevailed during last year. However, if the price level should remain low, with continued low prices for alternative production, all of these countries are likely to remain important exporters even at prices considerably lower than those that prevailed during the 1924-1929 seasons. Considering recent trends in production and prices, it seems likely that Russia may contribute during the next 10 years important export surpluses of wheat; Canada probably will export on the average more than it has from the reduced yields of the last two years; and Argentina and Australia are likely to maintain exports perhaps somewhat above the average of the last five years.

Butter, lard, and vegetable oil production in the United States probably will continue to be subject to severe competition from the vegetable oils of the Orient and tropical countries. The large volume of present production and the low prices tend to check imports, particularly during the business depression; and improvement in business conditions in this country probably will bring larger imports of vegetable fats and oils, even at very low prices. The European demand for lard from the United States, which has been considerably reduced by the world-wide depression, may be revived to some extent but will continue to suffer from the increasing competition from foreign fat and oil production.

Low prices seem to be reducing the production of cotton in many foreign countries, as they are in the United States. The prevailing low prices for American cotton are giving an impetus to the foreign consumption of our crop. The cotton producers of the South are no doubt in position to hold an important place, in the long run, in world cotton production and in foreign cotton markets.

SOME FACTORS AFFECTING FUTURE VOLUME OF AGRICULTURAL PRODUCTION

In view of the unfavorable prospects of the export market for American farm products, the outlook for a considerable expansion in volume of production for the Nation as a whole depends largely on whether a considerable expansion of domestic consumption of farm products can be expected.

One significant question is whether there is a prospect for a large increase of population. The developments of the last decade indicate a radical change from the very rapid increase of population and expansion of land requirements to which we have become accustomed during the greater part of our national history. The tendency toward a declining rate of national increase in population which has continued for several decades has been accentuated by restrictions on immigration and a marked decline in the birth rate during recent years. Assuming the continuance of these conditions, statisticians now foresee a total increase of population little more than 20,000,000 above the present level. Already the current annual increase is estimated at less than 1,000,000, and this increment is likely to become progressively smaller.

The prospect for so small an increase in the number of people to be fed and supplied with raw materials from agriculture during the next two decades indicates that we should not count on needing any appreciable increase of total arable acreage. In fact, the rate of such long-time expansion need not be even so great as the rate for population, since the further substitution of mechanical power for horsepower and increased efficiencies in the utilization of land may provide most, if not all, of the additional production required for such population increase as we have reason to anticipate.

During most of the period since the World War, until very recently, farmers were embarrassed by the high cost of farm labor, as compared with prevailing prices of farm products. This, however, was offset to some extent by substitution of machinery. In some sections not very well adapted to the use of machinery the scarcity of labor was accentuated by migration to cities of many of the able-bodied men of the farm population. In many areas this scarcity

of labor has partly contributed to the inadequate maintenance of the farm plant.

The high ratio of farm-wage levels to prices of farm products, which prevailed throughout most of the decade preceding 1929, was further increased by the severe decline of prices that began in that year. As usual, farm wages lagged considerably behind the drastic decline of prices. Although recently there has been a tendency for the gap to be narrowed somewhat, many farmers find it virtually impossible to hire labor even at present relationships between wages and prices, because farmers are compelled by low returns to cut cash outlays wherever possible.

On the other hand, reports indicate that there has been an accentuated movement of population from cities to the country in search of cheap food and shelter. This movement has augmented the supply of available farm labor that may be obtained in some places with little or no payment other than subsistence. Until such time as the volume of industrial unemployment is materially reduced, the farm-labor supply may be expected to continue more abundant than it has been during most of the decade since the World War. The present motive to increase the use of labor is intensified by the fact that machinery prices have not fallen in proportion to other prices. When machinery costs are again in line with farm wages, or when the prices of farm products are significantly improved, the displacement of farm workers by machinery will once more become a possibility.

LAND VALUES

The latest available estimates (March 1, 1931) indicated that farm real-estate values for the United States averaged 6 per cent above the pre-war base of 1912-1914, or approximately 38 per cent below the peak of 1920. In view of the further decline in prices of farm products since last March, and because of the tendency for farm-land values to lag behind the movement of prices, considerable further decline as compared with last March may be shown when figures for March 1, 1932, are available.

The market for farm real estate during 1931 has been affected by two sets of conflicting forces. Continued low prices for the products of the farm have resulted in the reduction of farm income to less than half that of 1929. Operating costs have been reduced somewhat, but not in proportion to the decline in prices of farm products. Fixed charges have declined little if any; taxes have continued at high levels, and for many farmers interest and principal on debts have remained undiminished. As a result of these tendencies, therefore, a considerably greater proportion of the gross income of the farm is required to meet fixed charges than before the present general depression began. The increased difficulty experienced by farmers in meeting their fixed charges with their drastically reduced incomes has resulted in continued foreclosures and distress sales, with consequent addition to the holdings of agencies the primary business of which is not farming, and which may therefore be regarded as prospective sellers of farm land. The continued decline in the ratio of prices received by farmers to prices paid by them has led to a cautious attitude on the part of many prospective buyers of farm lands.

On the other hand, there are certain factors which may exert an influence toward checking the decline in farm-land values. These factors have become somewhat more tangible during the last year.

There is a distinct tendency for farms in strong hands to be withheld from the market at present prices. Recent financial measures for strengthening the credit system and the more general recognition by loan agencies of the inadvisability of policies of drastic foreclosure should also lessen some of the pressure in the market for farm lands. Unemployment in industry has led many to consider the advisability of returning to the farm, and has probably served to stimulate somewhat the demand for farms. The weak financial status of many of this group, however, has tended to direct the primary effect of this movement toward the rental rather than the purchase market.

FARM-MORTGAGE CREDIT

The long-term outlook is for an ample supply of farm-mortgage credit for conservative loans at moderate interest rates. The Federal land banks, recently strengthened by \$125,000,000 additional capital from the United States Treasury, should be in improved position to care for applicants whose security

is ample and who satisfy other requirements. The experience of other loan agencies and investors during the recent business depression has shown that farm-mortgage loans made on a conservative basis compare favorably with city mortgages, highly rated corporation stocks, and even with many classes of bonds. Return to more normal industrial conditions should increase the supply of mortgage credit available from local banks and other sources. It should reduce the present demand for policy loans of life insurance companies and strengthen their demand for other loans and investments.

The future difficulties in the farm-mortgage field lie, therefore, so far as can be foreseen, not in the supply of new credit but rather in existing obligations. Although most of these mortgages represent conservative amounts, substantial numbers are excessive in size in relation to present land values.

This difficulty traces directly, of course, to the high war-time prices and inflated land values, followed by a drastic deflation in prices of agricultural products which was more recently greatly intensified by the general industrial depression. Such prices are at present less than 70 per cent of pre-war levels, whereas fixed charges, particularly taxes, and interest obligations continue practically unabated from the high levels chargeable mainly to war-time derangements. Although farm taxes have recently indicated a slight downward tendency, they stand at roughly two and one-half times the pre-war level.

In consequence of these conditions, a decline in the amount loaned per farm and an increase in the number of farms mortgaged appear likely to occur during the next several years if farm-commodity prices should continue at or near present levels. The fact that 5 per cent of mortgaged farms reported debt greater than the full value of the farm and that 10 per cent reported debt between 75 per cent and the full value of the property in 1931 suggests the probability of further forced liquidation. The process of readjustment is being eased by greater willingness of creditors to adjust terms and conditions to borrowers' circumstances.

The decrease in voluntary transfers and the lower land values have reduced the demand for loans to purchase farms. On the other hand, the failure of about 9,000 banks, or 30 per cent of the number operating in 1920, caused an unusual resort to mortgage credit from other sources to fund short-term obligations and to meet operating expenses. The difficulty of quickly reestablishing adequate country-bank facilities to supply personal and collateral credit is likely to contribute further to the increase in the number of farms mortgaged, which has risen from 27 per cent of owner farms in 1890 to 42 per cent in 1930.

MECHANIZATION

In this section of the report of the Agricultural Outlook for 1931, statements were made with reference to the development and progress of new types of farm equipment and the mechanization of agriculture. It was pointed out that progress in mechanization usually means increased efficiency, lower costs, expanded output, and hence lower prices; that these necessitate readjustments, geographic and otherwise, of the volume and composition of the agricultural output to consumer demand and a restabilization of prices. It was further stated, that, although further progress in mechanization of American agriculture might be expected in the next 10 years, the extent of it would be limited by the rapidity with which industry can absorb displaced agricultural labor.

It became evident during last season that the depression, which had in 1930 slowed up the sale of machinery and checked the progress of mechanization, has become more pronounced in these effects. The sale of farm machinery has dropped to a very low level. This means not only a reduction in the rate of replacement of farm machinery far below normal but it means a cessation in the opening up of new farms which, in the last decade, accounted for a considerable portion of the demand for farm implements of the newer types. By virtue of the stern necessity, cash outlay has been contracted throughout all of our agriculture. This has meant not only fewer purchases of machines but in some cases it has meant deferring repairs and, to a limited extent, laying aside of motorized machinery to avoid the cash outlay involved in buying fuel and oil for its operation. Even granting that highly improved machinery contributes to the lowering of the cost of production, it seems obvious, in the light of current experience, that extremely low prices of products curtail rather than stimulate the purchase of machinery. When the price falls below a figure that will compensate for the current operating cash costs as well as interest and

depreciation on these machines, expansion in their use can go no further until profits and cash returns again improve.

This is not to say that American agriculture is destined to go backward in the important matter of the use of improved machinery. The limited extent of current replacement of tractor use by horses has taken place in the areas in which horses are most numerous and in which farm operations are of such nature as to have kept a fairly good supply of horses still on farms. In the most highly motorized regions, such as the Great Plains, where the supply of work animals is relatively small, this tendency has not been marked. It is altogether likely that with any significant recovery in prices of cotton, wheat, and other staple products, the production of which is facilitated by the use of more mechanical equipment, progress in its use may be resumed. However, the present lull in the development of mechanization can be considered as one of the significant and withal normal manifestations of a depressed agriculture.

READJUSTMENTS IN PRODUCTION

The trend of world crop production has been upward for 30 years. For 20 years following 1900, crop production in the United States moved parallel with that of all other countries as a group. Since 1920, production in the United States, after moderate annual increases, appears to have fallen off slightly, whereas the production in the other countries has gone ahead even more rapidly than before the war. Growth of world population and gradual improvement in standards of living suggest a continuation of the trend of world crop production upward at a decreasing annual rate, except in years of bad growing conditions and except for retardations attributable to temporarily adverse economic forces.

For the last decade, net production in the United States (crops, livestock, and livestock products) may be represented by a smooth curve slightly convex with the high point at 1926. Crop production has varied with the seasons and with the shifts in geographical distribution of commodity production. Production was low in 1921, a poor season; it increased rapidly during the next three years; since then changes have been small. Livestock production has increased moderately since 1924. Total acreage in crops has changed little during the decade, in spite of marked annual changes in acreage of individual crops. These year-to-year shifts have not all been as advantageous as those who made them hoped they would be.

During most of the decade 1920-1929, production was maintained with increasing efficiency by a decreasing number of farmers, and it has been maintained over a period in which farmers saw inventory values of their real estate decline toward pre-war levels, their tax and credit burdens increase, and the relative prices of their products remain continuously below the prices they were paying for current purchases for living and for production. In 1930, low prices and short crops reduced their gross income by 2½ billion dollars below that of the year before and in 1931 still lower prices for a slightly larger production took another 2½ billion dollars from farmers' gross income. Farm income of 1931 thus became the lowest in 20 years.

Production during the next few years depends on reactions to the present bad situation in which most farmers find themselves. It has been assumed in the past that farmers would do about what they were accustomed to doing, that alternatives were few, and that possible changes were of small importance. Now it appears that the ability of many farmers to continue production may depend on fairly thorough-going readjustment of their obligations to a new basis as yet to be developed. Farmers who are out of debt may not be willing to proceed on the customary basis with prospects of the meager returns. Production in the immediate future is likely to show some reduction pending these readjustments to new relationships.

A better idea of the significance to farmers of these changes in trends of production may be gained by a consideration of individual commodities. For this purpose it is convenient to classify certain of our leading agricultural commodities on the basis of their relation to world and domestic markets. The first group may be called world commodities; that is, commodities of which a considerable proportion of our total production seeks a foreign outlet. The most important of these are wheat, cotton, tobacco, and pork. The second group are domestic commodities, or those in which domestic production and domestic consumption are approximately in balance; the important ones are dairy prod-

ucts, beef, poultry products, fruits, and vegetables. The third group are what we may call the deficit agricultural commodities; that is, those of which our domestic production is important but falls short of meeting domestic demand. The important commodities of this group are sugar, wool, and flax.

First are considered the so-called world commodities, of which cotton, measured by the percentage exported, is by far the most important. The trend of cotton production, in terms both of acreage and of total yield, has been sharply upward during the last 30 years. It has risen and fallen but it now stands almost 75 per cent, as measured by total output, above the level of about 1900. Most of this increase had been realized by 1926. The present situation does not supply a motive for further expansion. Indeed, as noted in the cotton section of this report, a downward turn has already taken place in acreage as a result of low prices.

Almost from the beginning, cotton in American agriculture has been outstandingly a world commodity. The present situation in the South, under which cotton is overwhelmingly the leading crop and the main dependence for income for the entire region, makes it unthinkable that cotton should not continue on an export basis. The question therefore of readjustment centers around those means and methods by which cotton producers, and the Cotton Belt as a whole, can meet the new elements in the competitive situation in cotton production. In every similar situation in the past there has been a significant reduction in acreage such as that which seems now to be under way. This reduction has always been followed by at least a compensating expansion when price and cost conditions have again become favorable.

But reduction in acreage can go only a little way in meeting present difficulties. Diversification has been recommended as a cure for the economic ills of the Cotton Belt. The recently advocated live-at-home program has been widely adopted and has helped the situation this year. It is a rational expedient not only in hard times but under more favorable conditions. Another means of readjustment has been the curtailing of cash expenditures wherever possible. The present hard situation makes justifiable, as an emergency measure, such curtailment through the reduction in the use of fertilizer and hired labor beyond a point which can be maintained permanently. From the longer time viewpoint, adjustments that look toward greater productive efficiency and lower costs and that will prove more permanently beneficial in their effects must be sought.

Throughout the so-called poorer cotton-producing areas it seems evident that no very rapid shifting of land and people out of agriculture can be expected. Before much of this sort of development can take place, alternative opportunities must be available to the displaced farm families either in industry or in a growing demand for other farm products made possible by expanding industrial population. In the areas of more favorable natural conditions continued progress in improving the methods of production by the greater use of machinery and in improved farm practice may serve further to reduce costs, if these things are accompanied by better financial organization. This sort of readjustment will probably be necessary if American cotton is to hold its own in the intensified world competition.

The next most important American world crop is wheat. The volume of output of this grain has risen and fallen, but the trend had been substantially upward, so that the present rate of production represents an expansion of about 25 per cent above that of 30 years ago. Normal export of wheat grown in the United States amounts to roughly 20 per cent of total domestic production. So large a dependence upon the foreign market makes it probable that wheat production in the United States also will continue to be based upon the world market outlet. To reduce, at this time or in the near future, to a volume commensurate with domestic consumption, would take out of use much good wheat land and throw out of employment a considerable body of agricultural labor for which there is not yet any prospect for remunerative employment elsewhere.

In planning for adjustment the ascendancy of the 1-crop system, or a close approach to it, in practically all of the most important wheat-producing areas must be recognized. Readjustment under these conditions, through a shifting to alternative enterprises, has only very limited possibilities. Attention at this time is being directed toward the growing of larger quantities of feed crops, in combination with wheat, in some of the most highly specialized wheat areas of the Great Plains, with accompanying livestock production. This is an adjustment of questionable wisdom not only in view of the limitations in feed and livestock production to be found in the physical conditions, except on an extensive grazing basis, in those wheat-producing areas, but also in view of the

unpromising prospects for the prices of those alternative products, especially if their total output should increase materially.

The present extremely low prices have led to a situation which will involve in some areas, a considerable amount of land abandonment and bankruptcy, with extensive realignment of ownership and tenure, and probably eventual return to grazing use.

Some relief may be looked for in the long run in the direction of improvement in production method. It is practically out of the question to curtail cash outlays in specialized wheat production in these areas by any sweeping abandonment of the use of tractors and large-capacity machines. On the other hand, the further progress toward greater efficiency through mechanized methods, which was expected two or three years ago, probably will not be realized under extremely low prices because of the additional costs that would be involved in the replacing of obsolescent machines. It would seem that such progress must be largely at a standstill until better prices arrive to stimulate it.

Hog production is another enterprise in which the American farmer has depended to a considerable extent on the foreign market, although from 1900 to the outbreak of the World War the trend in the exports of hog products from the United States was gradually downward. During and immediately following the war, exports of pork were greatly increased and those of lard were expanded materially in the early postwar years. Pork exports in 1919 represented about 24 per cent of the total domestic production, and lard exports in 1923 were about 43 per cent of the total production. Since those years, the trend of exports of both has been sharply downward, and in 1931 less than 3 per cent of the domestic production of pork and only about 24 per cent of that of lard were exported. From 1910 to 1914, exports of these commodities averaged about 32 per cent of total lard production and 6.6 per cent of total pork production. During the World War, European hog production was reduced to a very low level, but since the war it has been greatly expanded, and in 1931 was somewhat above pre-war levels. Import restrictions in foreign countries, together with depressed conditions and lower purchasing power abroad, are additional factors that have contributed to the reduction in exports of American hog products.

There is grave question not only as to whether recovery in exports may be expected or whether, indeed, this diminution in export outlet has run its course. In any case, this contracted foreign demand is having the initial effect of inducing a high degree of distress in the Corn Belt. It is contributing to a severe shrinkage in land values accompanied by heavy mortgage foreclosures and delinquency in taxes.

In an effort to meet the situation, farmers are seeking alternative sources of income. With a wider range of productive possibilities it is easier for the Corn Belt farmer than for the wheat farmer to turn to alternative enterprises. Dairying is being expanded as a result of this motive. This in itself is affecting the farmers of other regions, particularly those who have been specializing in dairy production. It is likely that the Corn Belt will see a still further realignment in crop acreages looking toward less production of concentrate feeds and possibly a larger production of roughages to support an expanding dairy enterprise.

As is true of farmers in other parts of the country, Corn Belt farmers are making every effort to reduce cash outlay. They are producing more of their own requirements on the farm, postponing replacement of buildings and machinery, and limiting their expenditures for fertilizers and repairs. All of these efforts at readjustments are likely to have a more or less permanent effect, resulting in important changes in the future farming of the region. Such farming is likely to be characterized by greater attention to the intensified forms of livestock production, particularly dairying, by the greater production of food crops, and by a retardation or actual reversal of the recent tendency toward larger farms and more mechanized production.

Tobacco is another agricultural commodity of which the United States produces a supply far in excess of domestic demands. Approximately 50 per cent of this crop is annually exported. The domestic production of tobacco has practically doubled during the last 30 years. It is produced in widely scattered areas under extremely diverse conditions and is a commodity of greatly differing types and grades. These facts greatly complicate the economic situation with reference to it.

It furnishes another example of declining export demand for American products. Foreign shipments have greatly diminished within the last two years. This aggravates the condition of acute oversupply, particularly with reference to certain types and grades, a full discussion of which is given in the tobacco section of this report.

As it is a highly intensive crop, and makes extremely heavy drafts on certain elements of soil fertility, tobacco normally does not occupy a very high percentage of the acreage of the farms on which it is grown. On the other hand, it usually is a major source of income on the farms and in the areas in which its production is important. These circumstances make exceedingly difficult the problem of adjusting its production to demand. Abandonment of tobacco on the acreage devoted to it does not ordinarily afford an alternative opportunity for anything like an equivalent amount of income. Tobacco is a heavy user of family labor, and when it is removed from the farming system a major disruption of the whole labor program results.

Next are considered what have been termed domestic products; those the production of which is approximately in balance with domestic demand. The most important of these, from the point of view of total gross income and the farm population affected, are dairy products. Since 1900, there has been a greater and greater tendency for dairy production to keep pace with the growth in population. During most of that period there has been a slight net import of dairy products, mostly in the form of foreign types of cheese. The trend of production has been upward at a moderate rate and production is at present in the neighborhood of 50 per cent above the level of 1900.

The dairy section of this report shows a marked shifting of the center of production westward into the upper Mississippi Valley, where dairy production has come more and more into competition with meat production as a result primarily of the declining income derived from the latter source. At present there is a well-defined competitive relation between the older northeastern dairy areas and this upper Mississippi Valley region, in large parts of which dairying is comparatively new as a major commercial enterprise. This western area has unmistakable natural advantages in the competition in the way of cheap feed, abundant pasturage, and adequate labor supply.

The question arises as to whether conditions of low income in older major enterprises of the Middle West, such as beef and pork production and wheat growing, will make for a permanently overexpanded condition in the dairy industry itself. Certain factors tend to prevent such a development. In the first place, within certain limits dairy production is highly elastic. It can respond quickly to price stimulus either through increased or through decreased production by means of quick changes in the number of cows used and the rate of feeding. Further, it is an enterprise requiring a large amount of labor of a sort not very attractive to the average farm family. It, therefore, yields readily to other enterprises when the latter show promise of any considerable improvement in income-producing power.

It seems altogether likely that dairy products will lose a large part of the price advantage they have recently had over alternative products. The disadvantage of producing for world markets is so great that there is little likelihood of dairying expanding to the extent of depending to any considerable degree upon the foreign outlet. It is altogether likely, however, that now and then the American price will approximate the world price level; that situation alternating with situations characterized by higher domestic price with imports of foreign butter in spite of tariff protection.

The beef-cattle enterprise which is also essentially on a home-market basis is closely related to dairying through the common use of basic production stock for both commodities throughout a large part of the producing area. The trend of beef production in this country has been only slightly upward during the last thirty years; the production to-day is apparently only about 20 per cent more than in 1900. It has not kept pace with increasing population, and net exports of beef, except in abnormal conditions such as existed during the war, are nonexistent.

Up to the present, beef-cattle production as a specialized enterprise unconnected with dairying has been a weak competitor with hog production and other crop and livestock enterprises except under range conditions. The important beef-growing and beef-fattening enterprises in the Corn Belt and in other limited areas are largely maintained as a means of utilizing surplus corn and other feeds beyond those needed for pork production and other

purposes. This condition apparently does not obtain in the competing countries, such as Argentina; beef from these sources long ago displaced American beef in European markets.

Although the present trend of production is not likely to undergo a great change aside from the rather regular cyclical movement which characterizes it, conditions are now developing which favor some expansion in beef production. But it is not likely again to assume the dimensions of an export enterprise. Reference is made to the beef cattle section of this report for a fuller discussion of the long-time situation.

A third enterprise the output of which in this country, is approximately in balance with domestic consumption is that of poultry and eggs. There is a relatively minor annual import of frozen and dried eggs from the Orient and there is a somewhat smaller net export of eggs in the shell. The trend of production during the last 30 years has been steadily upward. This country is now producing about 56 per cent larger volume than in 1900; poultry and egg production has therefore kept pace approximately with the expanding population.

The poultry enterprise is carried on under two rather essentially different sets of conditions. In the Northeastern States and in a limited number of Pacific and Mountain States a high degree of specialization in poultry farming, with extremely large flocks has developed; a very high percentage of the total farm income is derived from this main enterprise. On the other hand, throughout the Middle West and in various other parts of the country, poultry production is carried on as a very incidental thing in connection with types of farming in which other enterprises constitute by far the more important sources of income. Thus the Corn Belt produces over half of the commercial supply of poultry and almost half of the commercial supply of eggs, and yet the income derived from the poultry enterprise represents a small percentage of the total gross income of that region.

In this respect the poultry enterprise has some characteristics in common with dairying. It is a line of production easily resorted to in time of declining income from other sources. In the areas in which it is incidental, it is carried on by means of family labor—it is often the housewife's enterprise—and is supported by feedstuffs much of which might otherwise be wasted. This sort of production, characterizing both dairy and poultry as they are carried on in the Middle West, tends to make severe competition for the specialized producers in other parts of the country where the major portion of the costs represent direct cash outlay and hence are more keenly felt by the producers. Poultry production is beginning to arouse interest in the Cotton Belt and in other areas in which, until recently, it has been unimportant.

In the Middle West poultry production is benefiting by better and more efficient farm practice so that the output is likely to expand still further through the increase in the size and in the productivity of farm flocks. It is a type of farm enterprise which fits well into the more self-contained form of farm organization that is being forced upon many parts of the country as a result of the extremely low prices of leading agricultural products. It can be entered upon with but a small outlay of capital if it is conducted on the modest scale characteristic of the general farm.

Fruit production in this country has followed, in general, the trend in population. With minor exceptions, it continues to be a home-market enterprise. The changes in farm production have been in the direction of a higher degree of specialization, and a decline in the relative importance of production on the general farm. The shift has come in response to important advantages in specialized production, but it has carried with it certain disadvantages in the way of a high degree of risk for the specialized producers and a tendency to extreme overproduction which is the more difficult to deal with because fruit production is a long-time proposition, involving planning and development years in advance of the income to be realized.

There has been a most rapid upward trend in the commercial production of vegetables, a group of commodities which is outstandingly dependent upon the home market. The expansion has been made possible largely by the increase in urban population. The enterprise has been moving toward a higher degree of specialization, with respect to the type of farming under which it is produced and with reference to the geographic areas of heaviest production. Reference is made to the section of this report regarding potatoes and the commercial vegetable crops.

Next comes the group of commodities that are produced in this country in considerable volume but of which large quantities are usually imported. These commodities have been assumed to offer opportunity for expansion by the shifting of land and labor from the depressed surplus commodities. But such readjustment is slow in coming because of the low competitive strength of these commodities in comparison with those that are produced in greater quantities.

Sugar is perhaps the most important of this group. This country produces about half of its annual consumption. The trend, however, has been rapidly upward during the last 30 years and shows an increase of approximately 200 per cent since 1900. This increase was realized mostly in the earlier decades, and of late the volume has tended to decline. The main barrier to expansion of the domestic sugar crops through their substitution for other enterprises is found in the extremely low prices caused by a vastly increased world production. The only hope for better returns and expanded domestic production would seem to lie in the direction of a decline in foreign production sufficient to improve the price situation. Technical developments in both beet and cane production may have some significance in raising their comparative advantage and giving them a somewhat larger place in the farming of their respective areas.

Wool is another deficit commodity of considerable importance. Its production has increased in this country during the last 30 years, but domestic production still falls short of meeting domestic consumption under normal conditions.

The wool enterprise, although protected by tariff, has shown little strength in competition with other livestock enterprises except in very limited areas. In the better farming regions as well as in the better areas of the range country, cattle seem to have the ascendancy over wool-type sheep. The great bulk of our wool production is a joint product with meat production through the use of mutton-type sheep. The limited market for lamb has not permitted that part of the industry to grow to sufficient volume so that the wool output might expand to the full extent of American consumption. The sheep outlook report indicates that a diminution in production rather than an increase may be looked for as the next development in the sheep industry.

Flax is the third deficit commodity of importance. The trend in its production is extremely irregular because it is produced in the specialized wheat regions and must compete with that grain for acreage. It is also subject to wide variations because of favorable and unfavorable seasons. The present situation in wheat probably dictates an expansion in flax production, but growers have thus far displayed considerable caution, inasmuch as overplanting combined with abnormally high yields might easily place the output temporarily on the foreign-market basis with resulting low returns.

The trend toward what may be called self-sufficing farming induced by the agricultural depression, conceivably may exert considerable influence upon production. In the first place, thousands of farmers who are finding no profit in their usual program of production on a commercial scale have retrenched, especially where this resulted in a significant reduction in cash outlay, and are producing more largely for home use. In the second place, other thousands of men employed in towns and cities whose incomes have been reduced or entirely cut off, have moved to near-by farms in an effort to secure a living.

The major part of this retrenchment process is a natural response to the pressure of the present price situation and may be expected to modify itself about in proportion as the depression passes. For the present, however, an element is introduced that tends to slow up the effects of mechanization, new technic, and other economic factors which have been enlarging the productive capacity of agriculture.

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THE AGRICULTURAL OUTLOOK FOR 1933

Prepared by the Staff of the Bureau of Agricultural Economics

Assisted by Representatives of the Agricultural Colleges and Extension Services
and the Federal Farm Board

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SCOPE OF THIS REPORT

This report summarizes facts, not readily available to farmers, on the supply, demand, and price aspects of the principal crops and classes of livestock. These facts are analyzed and interpreted so far as possible to show the probable trend of conditions during the coming year in order to aid farmers in making plans for the season's operations. The statements are necessarily general in nature, because this report is prepared from the national viewpoint. The agricultural colleges and extension workers of the various States are preparing reports more closely adapted to local conditions.

The unusual situation this year makes it particularly difficult to show the probable trend of affairs, because of the changes in national and international policies which are under consideration by many legislative bodies. The following statements may have to be modified, in view of changes in political and economic conditions which can not now be foreseen, and all readers are cautioned to consider them with such conditions in mind.

This report has been prepared after consultation with economists and extension workers from the northern and western States. A report for the Southern States was prepared at Atlanta, Ga., November 8 to 12. Those who consider these reports are urged to secure from their State agricultural colleges and extension services, interpretations that apply particularly to local conditions.

DOMESTIC DEMAND

The domestic demand for farm products in general has improved only slightly from the lowest level, reached last July. No marked changes from this level are probable during the next few months. Numerous political and

financial elements with uncertain influence on business sentiment and business activity still exist; but the need for replenishing accumulated shortages of goods and the existence of sounder credit conditions and more confidence than prevailed during the financial crisis of late 1931 and early 1932, point to the possibility that domestic demand during the 1933-34 season may show some improvement over present conditions. Substantial general improvement in the domestic demand for farm products, however, waits on recovery in the industries that produce durable goods (such as buildings, railroad equipment, and automobiles) and consume large quantities of iron and steel, where extensive unemployment exists. Much will also depend upon changes in political and economic conditions abroad bearing on the removal of some of the foreign-trade and foreign-exchange restrictions which now hamper domestic industrial activity for export markets.

Industrial production, which was reduced from 125 per cent of the 1923-25 average in June, 1929, to 58 per cent in July, 1932, advanced to 66 per cent during the last quarter of 1932. The fairly sharp advance during the summer occurred chiefly in the textile industry, partly as a result of shortage of finished goods in the face of a small cotton crop and rising prices; but some recession has occurred since then. By November, substantial increases in the output of other industries such as iron and steel and automobiles occurred, and partly offset the declining output in industries producing consumer goods for current consumption; but by the end of the year even these basic heavy industries showed a declining tendency. The total volume of production of consumer goods rose during the period July to September from 78 to 102 per cent of the 1923-1925 average, but receded to 95 per cent in December. The output of the more durable products advanced from their low of 43 per cent in August to 52 per cent in December. At the beginning of 1933 the moderately improved industrial situation as contrasted with the low point reached last July was somewhat unstable, with no definite upward tendencies for the first half of 1933. The food industries will apparently continue to be sustained at a stable level by the fairly even flow of products from the farms. In the automobile industry production is far below the rate required to replace cars currently worn out, but for some time low-consumer incomes will restrict automobile production and employment. Low-purchasing power similarly influences the iron and steel industry, which depends on orders from the automobile, railroad, and building industries. Orders from each of these three sources are now at extremely low levels with no certain prospects for immediate marked improvement.

Building activity, as measured by contracts awarded, declined from 126 per cent of the 1923-1925 average in June, 1929, to 26 per cent in March, 1932. Between July and September, 1932, building activity increased by about 10 per cent, owing to an improvement in nonresidential construction, but lost most of that very moderate gain during the last quarter of 1932 when all lines of construction work receded more than seasonally, particularly in the case of public works and utilities. Practically no long-term real-estate bonds were issued during 1932 to finance new construction. Building activity in general is being retarded by the existence of surplus industrial and commercial capacity, by declining rents, by numerous mortgage foreclosures, and by relatively high building costs in many localities. Long-term loans for residential or other building are difficult to obtain. Individuals and institutions are burdened with past debts, real estate and other, and with insecurity of income. Furthermore, appropriations for construction work by Federal, State, municipal, and public works and public-utility agencies are lower for 1933 than they were for 1932. Extensive new financing is not yet in sight in spite of some recovery in high-grade bonds. Industrial activity is, therefore, not likely to receive any marked stimulus during 1933 from construction work.

The national income has declined about 40 per cent, from about \$91,000,000,000 in 1929 to about \$55,000,000,000 in 1932, but the incomes of certain large groups of urban wage earners have declined much more. Thus the combined wage payments by factories, railroads, and construction activities have declined about 65 per cent since the summer of 1929. This reduction was caused by complete unemployment of millions of workers, by part-time employment, and by reductions in wages. In addition, many consumers have drawn heavily on their savings and others have incurred additional debts. Part of the gain in pay rolls and employment which occurred around September has since been lost. The total number of unemployed in the United States at the beginning of 1933

is generally estimated to be about 11,000,000 to 12,000,000—about equal to the number in the summer of 1932.

Shrinkage in farm incomes is also restricting the purchase of industrial goods. For the year 1932, gross farm income is estimated at about \$5,000,000,000, compared with \$7,000,000,000 in 1931, and \$12,000,000,000 in 1929. As most of the returns were needed to meet production costs and fixed debt charges and taxes, there has been a drastic curtailment of expenditures. Purchases have been practically limited to bare necessities.

In many respects, financial conditions have improved materially over those obtaining a year ago. The volume of bank credit, however, continues at low levels and has shown no appreciable tendency to expand. At the beginning of 1933, money rates were extremely low in the larger metropolitan centers. Gold continued to flow to the United States and holdings of Government securities by the Federal reserve banks were unusually large. Member banks of the Federal reserve system had over \$500,000,000 of surplus reserves available for use in expanding credit for business enterprises. The liquidation of commercial bank credit, which was particularly rapid during the last half of 1931 and the first half of 1932, appears to have been halted during the last half of 1932. In the larger cities there has even been a moderate expansion. The drastic decline in the security markets was halted in 1932. Prices of high-grade bonds at the end of the year were slightly above the level of a year earlier, and 17 per cent above the low prices reached in June, 1932. Stock prices, as measured by the Dow-Jones Index, while 23 per cent lower than a year ago, were 46 per cent above the low reached in July 1932.

But these more favorable aspects of the credit situation are accompanied by unfavorable elements that retard business expansion. Bank failures continued at a rapid rate during 1932, the failures of that year exceeding those of any other year except 1931, and solvent banks still felt it necessary to maintain an unusually strong cash position. To date, banks have invested chiefly in Government obligations, rather than expand their commercial loans or purchases of industrial securities, because of the general lack of confidence in the business situation on the part of both business men and bankers. Lower prices and lower wages and other production costs and lower volume of business activities have reduced the demand for commercial and industrial loans. Bank deposits in agricultural areas have continued to decline with no prospects of an increase until farm income turns upward. With business activity at a low ebb, there is a dearth of sound commercial loans, and commercial banks hesitate to make substantial additions to their holdings of bonds other than United States securities.

Like other measures of business conditions, commodity prices showed some recovery during the summer months of 1932, but this had been completely lost by the end of the year when the general average of wholesale market prices was lower than the previous low level reached in June. The depression has created great price disparities among different groups of commodities and between commodity and other values. The general wholesale commodity price level at the beginning of 1933 averaged 90 per cent of the pre-war level of 1910-1914, but wholesale prices of farm products were 60 per cent and prices of house-furnishing goods were 134 per cent, with other groups between these extremes. Although price disparities of this sort are usually narrowed during periods of revival, their existence at this point in the depression is indicative of the need for adjustments. The slowness with which some of these adjustments are made tends to retard expansion.

Another factor making for weakness in the general commodity price level is the relatively lower level abroad of commodity prices in terms of gold, due in part to depreciated currencies. This situation limits the purchasing power for American goods abroad and makes American products relatively dearer in world trade.

Readjustments of various kinds are now in progress. Debts are gradually and tardily being scaled down more nearly in line with commodity prices, through default and foreclosure and through a more general acceptance of depressed conditions. Wages and salaries are being reduced. Vacancies and decreased industrial and consumer incomes are forcing rents down. Although such a readjustment of the price system is desirable from the long-time viewpoint, it creates apprehension and retards business recovery from the short-time viewpoint. Thus the fear of further wage and salary reductions and of further unemployment is tending to curtail current purchases by those still

employed. There are still many fixed charges that are greatly in excess of current earnings in agriculture, railroads, mining, and real estate. Many charges must be adjusted or reduced before profits can be made at the present level of prices.

The difficulties of correcting the existing maladjustments preclude any sharp immediate recovery. Therefore, when planning their 1933 production, farmers may anticipate no materially different consumer-demand conditions next winter from those that prevailed during the 1932-33 season, although some improvement may grow out of the favorable elements already mentioned. But the time and extent of any improvement may be influenced by several nonbusiness developments that are as yet undetermined. Efforts to increase prices and general purchasing power through some change in our monetary system and to advance agricultural income through the application of some farm-relief plan are of course viewed with favor by some and with apprehension by others. Efforts to provide some means of adjusting outstanding debts without the usual bankruptcy proceedings, through a revised bankruptcy act, are looked upon with more general favor, while attempts to relax the strangulating effects on our foreign trade of the existing foreign trade barriers and the international debt situation encounter the apprehension of a large number who believe in protection, isolation, and self sufficiency. Efforts to balance the national budget through additional taxation and through curtailment of expenditures are generally looked upon as a means of restoring confidence and strengthening the bond market, whereas others consider these efforts in the midst of deep depression as a further untimely drain on consumer incomes and business resources and as probably having a retarding effect on revival. Until some definite policies are decided upon with regard to these problems, many business men will hesitate to begin any marked expansion.

FOREIGN COMPETITION AND DEMAND

The decline in industrial production, which has been nearly continuous since 1929 in most of the important foreign markets for American agricultural products, showed a tendency to slacken in 1932. Foreign credit conditions are much improved, a factor favorable to recovery in industrial conditions abroad. At present, however, there is little prospect for a marked improvement in the foreign demand for our agricultural products during 1933. Disorganized currency systems, exchange control, and trade barriers and restrictions of all kinds are tending to hold back any appreciable revival in international trade. The difficult problem faced by many countries in maintaining their balance of international payments stands in the way of early removal of trade barriers and restrictions, or of the stabilization of depreciated currencies. Effective international action during the present year, directed towards facilitating international payments, the stabilization of currencies, and the moderation of trade barriers, would give a strong impetus toward economic recovery throughout the world. So far as its effect upon foreign demand for our products is concerned, a start toward recovery would be reflected first, no doubt, in the continuation of the improvement in the foreign demand for cotton, since this product is less hampered by trade restrictions than are the foodstuffs items in our export trade. Foreign production of most products competing with the United States in international trade is being maintained at a high level. A notable exception is cotton production. The acreage of cotton in foreign countries has shown some reduction during the last few years.

The foreign demand for our agricultural products has fallen to a new low level for the depression. In the year ended June 30, 1932, the value of agricultural exports from the United States was more than 25 per cent less than in the preceding fiscal year and 60 per cent less than in 1928-29. The decline has continued into the present (1932-33) season. The value of exports for the first six months was about four-fifths of the value in the first half of 1931-32.

The volume of exports has held up better than the value, chiefly because of lower prices of commodities generally and because of heavier shipments of cotton. The total volume of our agricultural exports of 1931-32 was larger than in the preceding two seasons and was only 16 per cent under 1928-29. There was only a small decline in the total volume for the first six months of this season (1932-33) compared with the corresponding period in 1931-32. Excluding cotton, however, the 1931-32 export volume was 10 per cent under that of the preceding season and 35 per cent under that of 1928-29, and the first

half of 1932-33 shows a further decline from the corresponding period of the preceding year of about 25 per cent.

Over two-thirds of our agricultural exports go to the industrial countries of northwestern Europe and to Japan. Consequently increasing unemployment and the decline in European industrial activity, intensified by low agricultural returns, have been important factors in reducing the foreign demand for our products. There was some indication of a slackening in the decline of industrial activity abroad in 1932. This has been especially noticeable in the case of textiles. In practically every important country cotton-textile production late in 1932 was at a higher rate than in the corresponding months of 1931. This has contributed to the well-maintained exports of American cotton. When textiles are excluded, it appears that the general industrial production of most foreign countries at the end of 1932 was below that of 1931. In the United Kingdom industrial activity for the third quarter of 1932 reached the lowest point of the depression, being about 2 per cent under the low level reached just before the abandonment of the gold standard in 1931. German industrial activity also declined to a new low point in August, 1932, but has since made a substantial recovery and in December, 1932, was 8 per cent above December, 1931. French industrial production has expanded, to some extent, since last August, largely because of textiles, but industrial activity in France in the latter part of 1932 was still substantially below that in 1931. In Japan general industrial activity in 1932 was above that of 1931; textile activity was as high as in 1929. This high level of industrial activity is to be associated with the sharp decline in the exchange value of the yen during the last six months and with heavy military expenditures.

In all of the principal European industrial countries unemployment at the end of the year appears to have been higher than at the end of the previous year, although in a number of cases there was an improvement in the closing months of 1932. In Great Britain, despite more rigid application of relief measures, the total unemployment at the end of December 1932 was almost 30 per cent greater than at the same time in 1931. On December 1, 1932, unemployment registrations in Germany were 5 per cent above the corresponding date a year earlier. All other European countries except Poland also showed an increase in unemployment toward the end of 1932 as compared with the same period in 1931.

In appraising the possibilities of economic recovery in important European markets during 1932, credit conditions as a factor in facilitating recovery appear more favorable than they were a year ago. In January, 1931 and 1932, unfavorable credit conditions were a direct factor in restricting industrial activity. During 1932, however, short-term interest rates in important European money markets declined almost continuously and are now at unusually low levels. The surplus of short-term funds available for lending has been accompanied by advancing security prices. Representative indexes of both bonds and common stocks in England, France, and Germany were higher at the end of 1932 than at the end of the previous year. The advance in security prices in Germany from the lows of midsummer, 1932, have been particularly striking. In England, bond prices have advanced to the highest level in the post-war period. The flotation of new security issues for long-term capital requirements, which was held back during the period when the British Government was refunding a substantial portion of the public debt at lower interest rates, may be encouraged by the substantial improvement in the bond market.

Although the improvement of credit conditions in many European countries is an important factor which may bring about a renewal of international lending and may facilitate the recovery of world trade, it is essential to bear in mind that utilization of the credit resources now available is dependent upon a belief that credit advances can be repaid. Under conditions of declining world trade, precarious trade balances, low gold reserves in many countries, and trade restrictions to safeguard gold reserves and currencies, this confidence is lacking. It is apparent, however, that increased confidence in the ability of capital-deficit countries to make repayment will appear when their international payments attain a more favorable balance. Among factors that may influence such developments are: Return of funds (in the capital-surplus countries) withdrawn in the earlier stages of the depression, increased demand for raw materials on the part of industrial countries, balancing of budgets, and reduction of trade barriers.

One of the greatest handicaps to a free flow of goods in international trade is the disorganized state of the various national currencies. Thirty-four coun-

tries have officially suspended the gold or gold-exchange standard and 11 other countries, through special control of exchange dealings, are practically in the same category. Silver, and the currency of China, have fallen to new low levels. In our important foreign markets the depreciation of the pound sterling has been a particularly adverse feature. From a par of \$4.86, the pound declined irregularly to a low of \$3.15 in December, but had recovered to \$3.35 by the middle of January. Inasmuch as about 50 per cent of the world's trade is carried on by countries closely associated financially and commercially with Great Britain, the downward trend of the pound sterling in 1932 has been an important factor affecting both the market for American agricultural exports and the competition offered by other exporting countries.

As long as the aggregate of wages and the level of internal prices in an importing country having a depreciated currency do not rise to offset the currency depreciation, the relative purchasing power of that country in international trade is decreased. If the total consumer income does not rise so rapidly as does the increase in prices of imported commodities, in terms of the depreciated currency, there is a reduction in the demand which can be offset only by reducing the gold price of commodities to a level that is more in keeping with the real purchasing powers of depreciated-currency countries. It should be recognized, however, that the countries with depreciated currencies would have suffered an impairment in their purchasing power under conditions of falling wage and price levels and increasing unemployment, even if the gold standard had been maintained.

Wage and price levels have not risen significantly in the currency-depreciated countries. Currency depreciation in these countries has, therefore, represented sharp and substantial reductions in prices, wages, and overhead costs, in terms of gold currency. Currency depreciation has tempered or offset the deflation that has occurred in gold prices and has obscured the impairment of internal purchasing power in international trade with gold-standard countries. The equilibrium of price levels in terms of gold among different countries has been materially altered, and although economic adjustments will sooner or later restore a new equilibrium, the process is operating slowly in many countries. The actual foreign-exchange rate is the immediate factor and reality encountered by exporters and importers. With some American farm exports the prices in depreciated currencies which can be secured become extremely low when converted to American money; with others, the export outlet is curtailed by prices in terms of gold which become restrictive or prohibitive when converted to foreign currencies. The instability of exchange rates is in itself an uncertain and hazardous factor in undertaking and completing transactions; accordingly it greatly handicaps international trade.

Among the principal exporters of farm products only the United States maintains an undepreciated currency. The competitors of the United States in world markets have depreciated currencies varying from about 15 per cent for Canada to 40 and 45 per cent for Argentina and Australia, respectively. In Australia and Argentina wheat prices for the 1931-32 crop reached as high a figure as the prices for a part of the 1929-30 crop. In depreciated-currency countries there is less reluctance in shading prices to obtain world markets and the influence of these high internal prices in maintaining acreages may be considerable. The extent to which this situation has altered and will continue to influence the sources and volume of world trade in farm commodities is, however, difficult to establish or to suggest, because of many other influences operating simultaneously.

Wholesale prices, in terms of gold, are at the lowest level of the depression. Compared with those of a year ago, price levels in depreciated-currency countries are unchanged or are slightly higher than a year ago, and in gold-standard countries they are about 10 per cent lower.

Throughout 1932 the situation with reference to foreign-trade barriers to American agricultural exports followed, in general, the unfavorable lines foreshadowed in the Agricultural Outlook Report for 1932. By and large, there was no abatement of the earlier severe restrictions affecting our agricultural exports. On the contrary, new restrictions were imposed. In the United Kingdom ratification of the Ottawa Agreements raised new barriers to American and other non-Empire fruits (apples, grapefruit, oranges, raisins, prunes) and to wheat; and late in 1932 quota restrictions on pork imports also went into effect, followed by others on beef and mutton effective the first of the present year. In France import licensing and quotas were applied to a long list of agricultural products. In Germany the butter-quota restric-

tions were further tightened; the authority of the corn-importing monopoly was broadened to include grain sorghums; and at the end of the year, application of a temporary import quota to lard was announced. In several countries that had been restricting imports through control of foreign exchange, trade with various other countries was reduced virtually to the level of barter exchange through the adoption of "clearing agreements" with such countries whereby the total value of current trade one with the other was arbitrarily counterbalanced.

In view of the continued tightening of restrictions during recent years, caution in predicting a cessation or a reversal of this trend during the coming year is manifestly in order. Yet there are some indications that 1932 may have been the peak; that the force of the earlier upward tendencies may have been spent; and that some moderation of existing barriers may get under way during the present year. Apparently no major projects in further tightening of barriers are now under contemplation. In Germany the contemplated import quotas on pork and pork products, fruits, and various other agricultural products (except on lard) were finally abandoned late in 1932. Agreements modifying previous drastic trade restrictions have recently been reached among various countries. There have been some signs of relaxation in the administration of exchange controls; and in various exporting countries export dumping schemes previously in effect have lost ground. These developments may possibly foreshadow at least a slackening of barriers or a cessation of further general tightening.

Meanwhile, there are two impending developments of which the ultimate outcome may be a reduction of present barriers, though perhaps not in 1933. One is the indication from various directions that a new impetus to tariff reduction by the bargaining process appears to be in prospect. Should the United States be a party to such negotiations, agricultural products, because of their importance in our export trade, would naturally have a prominent place. Although experience indicates that progress in such matters is necessarily slow and difficult, it may be that a period of general scaling down of barriers by international negotiation is about to begin and that its effects may be felt to some extent before the expiration of the crop year 1933-34. The possibilities of achievement in this direction will be much greater if, meanwhile, progress toward world financial stabilization and general economic recovery is made in other fields. In regard to this latter, much, in turn, will hinge upon the outcome of the World Economic and Monetary Conference to be convened in London, this summer—the second of the impending major developments referred to. The precise scope of the discussion is not yet certain; but it now appears that restoration of the gold standard, revival of wholesale prices, and reduction of trade barriers, are to be the major subjects. In so far as the results may hinge upon agreements subject to ratification in the different countries, definite action growing out of the negotiations will perhaps be mainly deferred beyond the present year. But if adequate progress is made in the discussions, both preliminary to and during the conference, this may be an aid to the general revival of confidence, which would be an important step toward recovery. Such an effect might be quite in advance of the actual adoption by participating countries of any measures upon which the conference may agree. This revival in itself should tend directly to stimulate markets for our exports; and since the more extreme restrictive measures of recent date have grown directly out of the financial crisis and the general collapse of confidence, it should tend also to ease the way to modification of the existing high barriers to trade.

Foreign agricultural production continues at a high level. In the deficit agricultural countries of Europe acreage and production have been maintained or have continued to mount behind the protection of high import duties and other trade restrictions. The 1932 wheat acreage in European countries, excluding the acreage of the surplus producers in the Danube Basin and Russia, was 7 per cent greater than in 1929 and 18 per cent greater than in 1920, but was still short of the average acreage before the World War. The total European acreage in 1932, including the Danube Basin but excluding Russia, was 2 per cent above the pre-war average. European hog numbers, excluding Russia's, have averaged, in the last few years, approximately 10 per cent above the average number during 1909-1913 and about 30 per cent above the average in the years immediately following the war. European cattle numbers are also above pre-war numbers, but the number of sheep has been reduced.

In surplus-producing countries like Canada, Australia, and Argentina, some shifts in crop acreages have taken place during the last three years and the total area under cultivation was less in 1932 than in 1930. But the acreage of wheat, the principal crop in these three countries, was 3 per cent larger in 1932 than in 1929, more than 10 per cent larger than the average of the five years ended in 1929, and over 80 per cent above the average for 1909-1913. The production and export of animal products in surplus countries have also been well maintained. Shipments of wool, mutton, and dairy products from the Southern Hemisphere during 1932 were at or near record figures. Only in beef was there an important decline in exports. The explanation of this well-maintained agricultural production in the surplus countries in the face of extremely low prices in terms of gold is to be found partly in the fact of depreciated currencies (which means that prices have not fallen so much in these countries in terms of their own money), in the fact that costs generally have been greatly reduced, and finally, in the fact that there is not much else to which these newer primarily agricultural countries can turn.

Russia was not an important exporter of wheat last year, but this was because of poor growing conditions and difficulties in organization and management rather than change of acreage. In spite of the small wheat exports from Russia in 1932 and the fact that no considerable expansion of wheat acreage is anticipated for the near future, it is likely that, in years when weather conditions are favorable, Russia may again become an important factor in the world wheat markets. The important rôle which general financial and economic policies of the Soviet Government play in the Russian export situation, the management and organization difficulties of Russian agriculture, and the fact that greater attention may have to be paid in the near future to supplying more products for domestic consumption, make Russian export prospects extremely uncertain.

There has been some contraction in foreign cotton acreage. The cotton acreage in India in 1931-32 was the smallest since 1922-23, and the acreage for 1932-33 has shown a further decline. The cotton acreage in Egypt in 1932, largely because of restrictions by the Government, was the smallest since 1896. These restrictions have been relaxed for 1933, and a considerable increase in Egyptian acreage is to be expected but probably not to the level of years preceding 1930. The prevailing low prices for cotton seem to be forcing contraction in cotton acreage in some of the newer cotton-growing areas in Africa. On the other hand, cotton acreage in Russia has continued to mount, but it may be significant that the increase in production during recent years has been at a considerably lower rate than the increase in acreage.

AGRICULTURAL CREDIT

The farm credit outlook for 1933 is affected by opposing factors. The loanable resources of country banks decreased further during 1932. The intermediate credit banks have ample loanable funds at rates substantially lower than a year ago, but local credit institutions are in a less favorable position to take advantage of these rediscount facilities. Farmers with security to offer have a new source of credit available through the regional agricultural credit corporations established by the Reconstruction Finance Corporation. A surplus of funds in central money markets indicates ample marketing credit at low rates, but loans from this source require security which many farmers can not supply. Funds for mortgage loans are scarce, owing in part to the lack of funds at the command of agencies lending on farm real estate security, and in part to the uncertainty of land values and the low farm incomes which have caused a further increase of delinquencies on outstanding loans.

Country banks, which in most areas are the chief source of production credit for farmers, experienced a further shrinkage in deposits during 1932. In the year ended in November, 1932, total deposits of member banks of the Federal reserve system, located in places of less than 15,000 population in 20 of the leading agricultural States, declined 15 per cent. From November, 1929, deposits in this group of States declined 34 per cent. Because of the low level of farm incomes, country banks in most areas have been unable to liquidate their production loans even to the extent that they did in the fall of 1931. Moreover, such institutions have large borrowings from city correspondents, the Federal reserve banks, and the Reconstruction Finance Corporation. Because of these factors and the desire of country bankers to

safeguard their solvency by holding liquid and marketable assets, bank loans in most agricultural areas will very probably be more restricted in 1933 than in 1932.

Although the number of bank failures in 1932 was materially smaller than in 1931, such failures were more numerous than in any other preceding year. These failures have been an appreciable factor in curtailing the usual credit facilities in agricultural areas.

Credit from merchants and dealers also is likely to be more limited during 1933 than during 1932. The merchants and dealers as well as the farmers have suffered heavy losses and are carrying so many overdue accounts that they are unable to obtain credit for purchasing the usual volume of supplies for resale, on time, to farmers. Reports from manufacturers of fertilizer indicate, for Southern States, that the proportion of credit sales to total sales for the year will be slightly less than it was in 1932, despite an increase in the number of dealers requiring credit accommodations.

The ability of the Federal intermediate credit banks to obtain loan funds has improved materially since a year ago. Their debentures are selling at rates of interest as low as $2\frac{1}{2}$ per cent and they, therefore, are prepared to accept for rediscount good eligible paper at low rates in any amounts offered. A large percentage of the farmers, however, will be unable to provide security of the necessary quality. Moreover, many of the agricultural-credit corporations and livestock-loan companies, which rediscount with these banks, are "loaned up," or have their capital impaired, and thus will not be able to advance new credit. Although the number of rediscounting credit corporations increased from 378 to 402 last year, it is not likely that many new ones will be formed in 1933, or that many of those existing will materially increase their capital.

A new source of credit for farmers, as indicated, has been provided under authority of the Emergency Relief and Construction act of 1932. The Reconstruction Finance Corporation under this authority has established and is operating a regional agricultural-credit corporation in each of the 12 Federal land bank districts. In addition, 20 branch offices have been set up. These regional corporations are making loans directly to farmers and stockmen, when the proceeds are to be used for an agricultural purpose and when acceptable security is offered. The cost of these loans to farmers is $6\frac{1}{2}$ per cent, which includes appraisal and inspection costs. Loans are made for the usual crop-production period. On livestock loans, the maximum period allowed is one year with the possibility of renewal under certain conditions. Applications for loans are submitted directly by the farmer to the regional office or its branch office. Up to January 27, 1933, these regional credit corporations had made loans of \$41,000,000 and had approved additional loans of \$53,000,000. Applications pending totaled \$66,000,000. The loans made so far have been chiefly based on livestock security.

The prospects for an ample supply of marketing credit during 1933 are good. At present, interest rates in financial centers are substantially lower than they were a year ago. Large city banks, which finance the holdings of farm products by means of commodity loans and acceptance credits, are better supplied with funds than last year. Availability of marketing credit through the Federal intermediate credit banks has been substantially improved by the recently enacted legislation making their debentures eligible as collateral for member-bank borrowings from the Federal reserve banks. Such debentures have recently been sold with the lowest interest rates in the history of the system. Loan and discount rates of the Federal intermediate credit banks now range from $2\frac{1}{2}$ to $3\frac{1}{2}$ per cent. Commodity loans by the Federal intermediate credit banks to cooperative marketing associations decreased sharply from \$43,000,000 in January, 1932, to \$16,000,000 in October. This decrease is due to the lower interest rates quoted by commercial banks to cooperative associations, to lower commodity prices, and to the liquidation of loans to Federal Farm Board stabilization corporations.

Farm-mortgage credit conditions continued generally unfavorable throughout 1932, and the prospect at the beginning of 1933 does not suggest any immediate improvement. Supplies of funds for lending on farm-mortgage security have continued meager, and the outstanding volume of credit of all principal lending agencies has steadily declined since a year ago. Decline in the prices of farm products to new low levels has greatly handicapped borrowers in meeting interest and debt charges due on loans outstanding. Record numbers of delinquencies and foreclosures on loans previously made have tended to make lend-

ers cautious in extending new credit. The Federal land banks have continued unable to sell their bonds at rates that would permit operation within the margin of charges permitted by the Federal farm loan act. The actual margin of 0.41 per cent between the year's average bond yields and the 6 per cent maximum permitted on loans to borrowers is inadequate to cover operating costs. The banks have borrowed from the Reconstruction Finance Corporation to maintain supplies of loanable funds. While the present market condition continues, it is evident that it will be difficult to obtain funds by bond issues. Federal land bank bonds yield monthly average rates ranging from 5 to 5.95 per cent per annum during 1932. The average yield was 5.82 per cent in January and 5.56 per cent in December, with an average of 5.59 per cent for the 12 months. The average yield for the 15 years during which these banks have been in operation is 4.62 per cent.

Loans of the 12 Federal land banks amounted to \$24,000,000 for the first 11 months of 1932 as compared with \$48,000,000 during 1931. Joint-stock land banks have continued virtually inactive in so far as new loans are concerned. Delinquencies in farm-mortgage loans increased considerably during the concluding months of 1932.

The demand for policy loans from life insurance companies has materially abated, thus leaving a larger proportion of the premium and other income of the companies available for new loans. Country banks, however, have had further notable declines in the volume of their deposits, and consequently are in less favorable position to advance credit than they were a year ago.

Funds appropriated by Congress in 1932 for the specific purpose of permitting extensions to delinquent borrowers from the Federal land banks have been largely consumed. Under the necessities of the situation, most lending agencies have adopted lenient methods of dealing with their borrowers. The term of loans has been extended, payments have been postponed, and in many cases of foreclosure the farm has been sold back to the farmer on reasonable terms. A continuation of this policy of leniency and adjustment is urgently needed. During recent months there have been set up in some States local conciliation committees to assist in effecting voluntary debt adjustments between creditors and debtors. The further extension of this movement seems probable. Recent new loans have been small in volume and generally have represented amounts that were manageable by the farmer borrower. The best efforts of creditors and of agencies qualified to extend new credit, as well as some governmental assistance, will be required to hold distress to a minimum during the coming year.

Conditions in the central money markets have improved substantially during recent months. A year ago our monetary gold stock was being rapidly depleted by transfer abroad and money in circulation was increasing at a rapid rate. Between July 1, 1931, and July 1, 1932, the monetary gold stock decreased approximately \$1,000,000,000, and as a result of extensive withdrawals for hoarding, money in circulation increased by more than \$900,000,000. Meeting these demands placed a tremendous strain on the reserve funds of commercial banks. This strain was only partly offset by the purchase of \$1,100,000,000 of Government securities by the Federal reserve banks and by increased discounts for member banks. As bank reserves declined there was a drastic liquidation of credit accompanied by falling commodity and security prices. During the last half of 1932, however, this liquidation was apparently checked and in the larger cities there was a nominal expansion of commercial bank credit.

Since the middle of June, 1932, the tides of gold movement and money in circulation have turned. The monetary gold stock increased 17 per cent up to January 25, 1933, and money in circulation had shown less than the usual seasonal increase. Although the net increase of holdings of Government securities by Federal reserve banks during that period amounted to only \$71,000,000, member banks were able to reduce their borrowings from Federal reserve banks from \$496,000,000 to \$265,000,000 and to increase their legal reserves by \$412,000,000. An increase in national bank notes by about \$160,000,000, under authority of recent legislation, was a factor in this improvement in the condition of member banks. Member-bank reserves in the amount of \$2,513,000,000 are materially above those held a year ago and about \$550,000,000 in excess of legal requirements. Reserves of member banks of the Federal reserve system are now practically at the highest level in their history and would permit an expansion of member-bank credit to a level which would equal that existing in 1927 and 1928. The expansion of member-bank credit, however, will depend mainly on improvement in business conditions.

So far, banks have placed a high premium on the more liquid types of loans and investments, and rates borne by United States Government securities, call loans, and prime bankers' acceptances have declined to unusually low levels. On January 21, 1933, the rates on prime bankers' acceptances were three-eighths of 1 per cent, on commercial paper $1\frac{1}{4}$ to $1\frac{1}{2}$ per cent, and on call loans 1 per cent. These rates are substantially below those prevailing a year ago.

FARM LABOR, EQUIPMENT, AND FERTILIZER

From 1929 to December, 1932, the level of the combined index of farm wages and of commodities bought for use in production declined approximately 36 per cent, or to about the same level as prevailed in the years 1910-1914. The greatest declines occurred in the prices of feed and seed, and in farm wages, all of which are now decidedly below pre-war levels. Prices of fertilizer and miscellaneous supplies are slightly below pre-war levels, but prices of farm machinery and building materials are considerably above pre-war levels. Farm purchases of commodities used in production have declined materially, in many instances much more sharply than prices have declined, so that the farmers' cash outlay for production goods and for services, in 1932, was at an unusually low level. Although the prices of some things farmers buy showed little change in 1932, the general trend of prices paid by farmers was downward, and this decline is continuing into 1933.

FARM LABOR AND WAGES

The sharp decrease in industrial employment during the last few years has brought about an unusually large supply of labor for farm work in the United States, and farm wages are the lowest they have been in a quarter of a century. This large unemployment has not only checked the usual movement of surplus labor from the farm to the cities, but has resulted in a movement of urban labor back to the farm. No substantial decrease in the supply of labor and no increase in the rates of farm wages are likely until there is a material improvement in industrial employment or in farm prices.

After declining to 57 per cent of the 1923-1925 level of employment in July, 1932, industrial employment increased to 62 per cent in October but has since shown a slight decline. This is still somewhat below the index of employment in 1931. From December, 1931, to December, 1932, prices of farm products declined from 66 per cent to 52 per cent of the 1910-1914 average. This decline in the prices of farm products has resulted in a marked decrease in the demand for farm labor.

From January, 1932, to January, 1933, the farm-labor supply as reported by farmers increased from 121 to 127 per cent of normal and farmer demand for labor decreased from 60.5 to 54 per cent of normal. The combined effect of oversupply of hired farm labor, and subnormal demand for it, has increased the supply, expressed in terms of the percentage of the index of demand, from 200 per cent of normal in January, 1932, to 237 per cent in January, 1933.

On January 1, 1933, farm wages for the country averaged as follows: Per month with board, \$14.77; per month without board, \$23.62; per day with board, 76 cents; per day without board, \$1.06. These wage rates were the lowest in many years. They were nearly 25 per cent lower than they were one year earlier, and 43 per cent lower than two years earlier. Average wages in January, 1933, were as low as 55 cents per day without board, in three Southeastern States. January wages were highest in the New England States, averaging \$1.96 per day without board. In the Pacific Coast States the average for January was \$1.70 per day without board.

BUILDING MATERIALS

During the peak of residential construction in 1928, monthly contracts awarded averaged \$233,000,000. Since then, residential construction has decreased sharply and during the first 10 months of 1932, contracts awarded averaged only \$25,000,000. Although the decline in building activity has been accompanied by a marked decline in construction costs, both for material and for labor, prices of building materials are still relatively high compared with prices of most of the things farmers buy. In 1929 wholesale prices of lumber, the principal building material used in residential construction and on farms, was 175 per cent of the prices in the pre-war period, 1910-1914; but by Septem-

ber, 1932, they had declined to 105 per cent of pre-war prices. During this same period the index number of prices paid by farmers for building materials declined from 162 to 126 per cent of the index for the pre-war period.

FARM MACHINERY AND EQUIPMENT

The average wholesale prices of farm machinery remained fairly constant from January, 1925, to September, 1929. From September, 1929, to September, 1932, the index of wholesale machinery prices declined about 14 per cent, according to the revised index of the Bureau of Labor Statistics. During this same period prices of automobiles and 10-20 horsepower tractors declined about 11 per cent. From October, 1931, to October, 1932, wholesale prices of automobiles, tractors, and general farm machinery have remained steady, but prices of trucks have declined. Wholesale prices of $\frac{3}{4}$ to $3\frac{1}{2}$ ton trucks in October, 1932, were about 10 per cent below wholesale prices of a year earlier. Although the wholesale prices of most farm implements in December, 1932, were still somewhat above pre-war prices, those of trucks, tractors, gas engines, and automobiles were below pre-war levels.

The farm-machinery price situation during a considerable part of 1932 was not entirely indicated by list prices, as some manufacturers announced plans that contemplated discounts, if prices of specified farm commodities failed to rise above certain price levels.

To what extent this practice will be followed in 1933 is not known at this time. No material changes in wholesale prices were announced in the fall of 1932, but late in January, 1933, one manufacturing company announced general reductions in wholesale prices of its farm implements.

Since 1929, the retail price of farm machinery, including automobiles, has declined from 162 per cent of pre-war prices to 147 per cent in September, 1932. This comparison is based on the prices paid by farmers for given machines and does not take into account the changes in design, quality, and adaptability that have taken place during the last 20 years.

Manufacturers' sales of farm machinery for use in the United States in 1929, exclusive of trucks, were the largest in any postwar year and amounted to about \$450,000,000. The value of sales in 1930 was 85 per cent, and in 1931, 42 per cent of the 1929 sales. Sales in 1932 were materially below those of 1931. This sharp drop in machinery sales indicates that farmers are decidedly curtailing their expenditures for goods used in production.

FERTILIZER

In the three years from September, 1929, to September, 1932, retail prices of fertilizer to farmers declined 25 per cent. During the same period prices of farm products declined 58 per cent. In September, 1932, prices of farm products were 59 per cent of pre-war prices, while retail prices of fertilizers were 98 per cent of pre-war prices. With the decline in farm prices, the consumption of commercial fertilizers has been curtailed. Sales of fertilizer-tax tags for the 1931-32 season were 54 per cent less than in 1929-30.

Fertilizer manufacturers buy fertilizer materials during the last half of the year for the fall and for the following spring season. During the five months, July to November, 1932, wholesale prices of fertilizer materials were 12 per cent lower than during the same period of 1931. The decline in wholesale prices of fertilizer materials in the last year has been most marked in the case of ammoniates. From July to November, 1932, prices of sulphate of ammonia and of nitrate of soda were 26 per cent less than a year earlier. The decrease in the price of tankage was 21 per cent and in the price of cottonseed meal, 8 per cent. Prices of other important materials showed very little change. Prices of superphosphate were 5 per cent lower than a year earlier. Prices of muriate and of sulphate of potash were only 1 to 2 per cent lower than a year earlier. Lower wholesale prices of fertilizer materials in the fall have tended, in the past, to be reflected in lower retail prices to farmers.

WHEAT

The slowness with which the level of world wheat production is likely to be further readjusted is indicated by acreage changes in the last two years. The wheat acreage of the world, excluding Russia and China, was significantly lower in 1931-32 than in the preceding year (the first decrease in acreage in

seven years) but it increased slightly in 1932-33. The decreases in 1931-32 were partly due to unfavorable weather conditions, and the current season's area of 254,700,000 acres appears to be more nearly normal than the acreage of last year. These facts, together with the history of acreage changes during previous periods of low wheat prices, suggests that the world area is not likely to fall below about 250,000,000 acres, save in years of generally unfavorable weather conditions or as the result of a very long-continued period of low prices. However, any material modification of import restrictions which have maintained high prices and stimulated acreage in some importing countries would affect the world total. Substantial reduction of the present burdensome stocks is likely to wait upon increased consumption rather than upon curtailment of the world wheat area.

The principal increases in the wheat area in 1932-33 occurred in Canada, Argentina, and Australia. In each of these countries unfavorable weather conditions during the 1931-32 season had been instrumental in reducing or holding down acreage for that year, and with more favorable conditions for planting and harvesting in 1932-33, wheat areas were increased slightly. The increase in Canada is estimated to be nearly 1,000,000 acres, that in Argentina 2,500,000 acres, and that in Australia 900,000 acres. The acreage of the United States was not materially changed, whereas in Europe there was a net decrease of 900,000 acres. This decrease was the result of reduced acreages in the exporting countries of the Danube Basin, due partly to price declines in recent years, but largely to an unfavorable season. These decreases were not entirely offset by increased acreages in several of the deficit countries of western Europe where high tariffs and other restrictions on wheat importations have resulted in relatively high prices.

As the net result of these changes and of the larger acreages in other countries (primarily India) the total wheat area of the world increased in the 1932-33 season, according to present estimates, by 4,600,000 acres. The 1932-33 acreage level, however, is approximately 3,000,000 acres below the estimated level of 1930-31. At the acreage level of 1932-33 the world, excluding Russia and China, would produce with average yields (14.7 bushels per acre in the last 12 years) crops totaling about 3,740,000,000 bushels compared with an average disappearance during the last 5 crop years of almost exactly the same quantity. During the last five years disappearance has ranged from 3,582,000,000 bushels in 1927-28 when world prices were much higher than in recent years, to about 3,840,000,000 in each of the last two years. If consumption can be maintained at an average level of about 3,800,000,000 bushels or can be increased slightly, present acreage levels, in the absence of material shipments from Russia, would permit a fairly rapid reduction of stocks.

Russia, however, may export considerable quantities of wheat in years when its yields are good. Estimates of the Russian wheat area for 1932-33 were below those of the previous year; this was the first decrease in such an estimate since 1928. The estimated area increased from an average of 40,000,000 acres in the five years 1920-1924 to 92,100,000 acres in 1931. The larger production from this rapidly expanding wheat area was mostly absorbed by increased consumption within Russia. Nevertheless there has been an upward trend in Russian exports during the period. From 1922-23 to 1929-30 Russian shipments fluctuated from none to 50,000,000 bushels yearly, but in 1930-31 they rose to 112,000,000 bushels. This high level of shipments was followed in the next year by exports of 72,000,000 bushels, but in the current season shipments during the first six months of the crop year have totaled only 15,192,000 bushels compared with 66,640,000 bushels during the corresponding period of last year. Russian wheat exports are probably more dependent on governmental policy, both domestic and international, than are the wheat exports of any other country. During the last three years governmental policy has probably resulted in larger exports than would otherwise have been made, whereas a policy emphasizing an improved standard of living and a consequent increase in consumption might serve as a check on exports unless production were considerably expanded.

Altogether, from a long-time standpoint the outlook is for a rather slow recovery from the present situation of burdensome world stocks of wheat. Year-to-year changes in stocks will depend largely upon the fluctuations of yields. A very short world crop of wheat, corresponding to that of 1924-25 or of 1897-98, would result in a very great reduction of stocks—possibly to normal proportions. In the absence of such an occurrence, however, a level of stocks which, although fluctuating from year to year, will have a gradual downward trend, may be

expected. This downward trend will be the result of a gradually increasing consumption of wheat, and possibly of some decrease from the present level of world acreage. The increase in the consumption of wheat will be hastened whenever there is a marked recovery of business in the world generally.

United States wheat exports during the next few years may be expected to face strong foreign competition, coming not only from important surplus areas, but from deficit areas where trade barriers and domestic agrarian aids have expanded wheat production. The competition from the great wheat-export regions of Canada, Argentina, and Australia continues strong because of the outstanding place that wheat holds in the agricultural economy of these countries; the generally lower transportation costs to seaports, especially in Argentina and Australia; and the depreciated currencies in each country. These factors for the most part favor Canada less than they do Australia and Argentina. Upward adjustments of wages and other cost items, usually associated with depreciated currencies, have been slight during the present depression. Wheat prices, in the domestic currencies of Australia and Argentina, were as high during part of 1932 as during corresponding periods two years earlier, while prices in the United States and Canada were generally only about one-half as high as in 1930. But Canada as well as Australia shares the benefit of British Empire preference.

In most important deficit areas demand for foreign wheat is being reduced largely by increased domestic production and utilization, or is being shifted to sources of supply where preferential trade situations exist. No general relaxation of world trade barriers is in prospect in most countries until considerable progress is evidenced in international agreements relative to trade barriers or in financial stabilization and general economic recovery. Even then, a return in Europe to the low postwar level of production is scarcely to be expected. Efforts to increase yields per acre have been an important factor in the larger European production, and may have a continuing influence. Although immediate factors other than possible special trade-treaty developments are not particularly favorable for United States exports, our competitive position should improve with a lessening of foreign currency depreciation or with readjustments to it, as well as through generally improved economic conditions with some reduction in trade barriers, and reduced costs which may come as a result of some acreage shifts taking place in the United States, notably the expansion in the Southwest. In the light of the above conditions there seems to be no present prospect that foreign competition will drive the United States completely out of the world wheat market.

During the crop year 1931-32, domestic stocks, movement, and prices for wheat were subject to unusual influences. Chief among these were the extraordinarily small outturns of winter wheat, the reluctance of producers and other holders to release wheat for domestic milling or export, and the organized liquidation of wheat held by the Grain Stabilization Corporation. As a result of these factors, United States prices ruled high relative to the world level, commercial exports were very small, and despite export sales of 79,000,000 bushels by or for the Grain Stabilization Corporation, total net exports (wheat and flour) were almost as small as in 1930-31, amounting to only 124,000,000 bushels. Wheat feeding was large, but not materially larger than during the previous year; flour production for domestic use was somewhat smaller; and as a result year-end stocks in all positions totaled 363,000,000 bushels as compared with 319,000,000 bushels at the end of 1930-31.

In consequence of the very large carry-over, domestic prices during July and August, 1932, were not only low, but were lower as compared with the world price than during the previous few months. As the season progressed, however, receipts at primary markets were much smaller than normal, and after November, when the new-sown winter wheat failed to progress favorably, domestic prices rose somewhat in comparison with the world price, until by January 1 they stood approximately equal to Liverpool prices.

United States net exports (including flour) to January 1 totaled approximately 25,000,000 bushels. Continued exports at this rate would result in a season's total of around 50,000,000 bushels. If exports should equal this total and if wheat fed and lost should amount to about 100,000,000 bushels, apparently the domestic carry-over of wheat on July 1, 1933, would be about the same as that of a year earlier.

In view of this prospective large carry-over, and considering the poor condition of growing winter wheat, the market outlook for wheat in the United

States during 1933-34 is dependent to an unusual extent upon the acreage sown to spring wheat. On a spring-wheat acreage approximately equal to that of last year, average yields would result in a crop of around 250,000,000 bushels. If winter-wheat production totals around 400,000,000 bushels as now seems probable, and if the carry-over is about the same as last year, a spring-wheat outturn of 250,000,000 bushels would result in a total supply of about 1,015,000,000 bushels, or around 350,000,000 to 375,000,000 bushels in excess of probable domestic utilization for the season.

Such a surplus would involve either a United States-Liverpool price spread in 1933-34 sufficient to move significant quantities of wheat into export or a maintenance of surplus stocks in this country. Even if the latter situation should eventuate, marked improvement in the domestic market situation would have to await either improvement in the world market or further domestic acreage reductions.

A marked reduction in spring-wheat sowings for the 1933 harvest would be a factor of great significance. Such a reduction, especially if followed by smaller winter-wheat sowings, would give indication of a lower level of production and would modify the depressing market influence of the supplies already accumulated.

The world wheat market as well as the wheat market of the United States will again be burdened by heavy stocks of wheat at the beginning of the 1933-34 season. The surplus of wheat for export or carry-over in the four principal exporting countries (United States, Canada, Argentina, and Australia), plus United Kingdom port stocks and quantities afloat, is estimated to be 1,024,000,000 bushels as of January 1, 1933, compared with 1,035,000,000 a year earlier. These estimates are subject to some change if changes occur in estimates of crops or in domestic utilization in the various countries, but in any event supplies in these positions are about as large as were similar supplies a year earlier.

The extent to which these surpluses will be reduced by July 1 is largely dependent upon how much importers take in the six months from January to June, but is also dependent upon supplies available from other exporting countries. Continental European import takings during the first six months of this season have been much below those of the previous season, primarily because of large crops. Although the takings of importing countries can hardly be as much below last season's level during the second half of the season as during the first, it is probable that they will be smaller from January to June, 1933, than during the corresponding months of 1932. The influence of these reduced takings on exports from non-European countries will be at least partly offset by the fact that smaller supplies are available in the Danube Basin and in Russia. Total January-to-June shipments from these sources last year amounted to 13,000,000 bushels, whereas in the current year they are expected to be insignificant. Altogether it seems probable that the reduction of surpluses in the four principal exporting countries, plus United Kingdom port stocks and quantities afloat, will be no larger and may not be as great from January 1 to July 1 this year as they were during that period last year. Hence the carry-over in these positions on July 1 will probably be about as large as it was on July 1, 1932, or possibly a little larger.

There is little available to indicate the probable size of the 1933-34 world wheat crop. Yields for the world, excluding Russia and China, in 1932-33 were slightly above the average of the preceding 12 years, the very low yields in the United States being more than offset by higher-than-average yields in other countries. If yields outside the United States should be average in 1933-34, and if there should be no change in acreage, then the total production for the world, excluding Russia and China, would probably be somewhat below that of 1932-33, for there is the prospect of an even smaller winter-wheat crop in the United States in 1933 than in 1932. Such a decrease in the world crop, outside Russia and China, would more than offset any increase in accounted-for carry-over that might occur.

Acreages of winter wheat sown for the 1933 crop show divergent tendencies in various countries. In the United States there has been a decrease of about 500,000 acres; in 12 countries of Europe thus far reported an increase of 1,442,000, and in India a decrease of 1,249,000 acres. Acreages in these countries, together with the Canadian winter-wheat acreage, result in a total of 125,167,000 acres of winter wheat sown in those 15 countries for harvest in 1933 compared with 124,830,000 acres in 1932. It is to be borne in mind,

however, that changes of acreage in India may be expected to be less significant in affecting the world wheat market than are similar changes in most other countries except China and Russia.

Russia remains a rather uncertain factor in the world situation. Although its wheat exports may not be so small as in the current season, they are not expected to be very large in the 1933-34 crop year. The 1933 outturn is unknown, but several factors in the present situation suggest that exports will not be so important in the coming year as in 1930-31 and 1931-32 seasons. In the first place the wheat acreage for harvest in 1933 is expected to be below that of the last two years. Fall wheat sowings (which make up at least one-third of the total of the area) are about 13 per cent below those of a year earlier, and the acreage seeded to winter rye (which comprises almost the entire rye area) is about 2 per cent less. The 1933 spring-sowing plan for wheat is only moderately above the actual spring sowings of 1932 and is considerably below the 1932 planned spring acreage. It is reported that emphasis is now being placed on the desirability of increased yields rather than increased acreage. This, if effective, will result in a larger production on the present acreage, but a considerable part of the 1932 fall sowing was put in after the best sowing period—this increases the possibility of winter damage. Crops appear to have got off to a poor start in the important wheat regions of southern Russia. Some delay in spring seedings may likewise occur, inasmuch as fall plowings for spring planting were markedly less extensive in the fall of 1932 than at the same time in 1931. In addition, some modification in the procurings or collecting system, which would not exact so large a portion of the crop produced as formerly, appears imminent for the coming year.

Altogether, then, although accounted for carry-over as of July 1, 1933, may be about the same as a year earlier, there is some prospect that smaller new-crop supplies will be available to the world outside Russia and China even when shipments from Russia are added. In such an event the world carry-over at the end of the 1933-34 season may well be considerably smaller than at the beginning. The precise outcome will depend largely upon the wheat yields of the various countries in the 1933-34 season, as well as upon consumption during the season.

FLAX

Because of unusually low yields the 1932 production of flaxseed is well below prospective 1932-33 domestic requirements. Average yields in 1933 on an acreage as large as that seeded in 1932 (2,600,000 acres) would produce a crop closely approximating the estimated 1933-34 domestic requirements. If such a crop is realized in 1933, benefits derived from the tariff (65 cents per bushel) would be reduced since domestic prices would recede toward those in foreign surplus areas. Unless business and building activities increase materially from their unusually low levels the acreage seeded in 1932 seems to be about the maximum warranted.

From present indications the 1932-33 world flaxseed crop will be much smaller than the 155,000,000 bushels harvested in 1931-32. The 1932 world flaxseed acreage was about 7 per cent smaller than that of 1931. Estimates of production for 14 countries reporting to the close of 1932 aggregated 85,751,000 bushels, or 70.8 per cent of the total quantities harvested by the same countries last season. The greatest reduction was in Argentina and was due to reduced acreage and low yields brought about by heavy grasshopper damage. The 1932 crop in that country was 53,147,000 bushels, or only 59.7 per cent of the 89,067,000 bushels harvested in the preceding season. The European crop, outside of Russia, is generally smaller than it was a year ago. The 1932 Canadian crop of 2,446,000 bushels was only 0.8 per cent smaller; the 1932 Indian crop was 9 per cent larger than that of 1931. The 1932 production of flaxseed in the United States was 11,841,000 bushels, or practically the same as the 11,798,000 bushels harvested in 1931. Seeded acreage in 1932 was less than in 1931 in North Dakota, South Dakota, and Montana, and drought during July and August, together with insect damage, caused reduced yields and extensive abandonment. In Minnesota sowings were less than in 1931. The yield for the United States was 5.7 bushels per acre, compared with 4.9 bushels in 1931 and the 10-year average of 7 bushels.

The commercial supply of flaxseed available for crushing October 1, 1932, was 10,526,000 bushels. This estimate is based on the factory, warehouse, and

market stocks on October 1, plus the 1932 crop, but minus an estimated seed requirement and new-crop marketings prior to October 1. Data for the same positions a year ago indicated a supply of 10,879,000 bushels. The average for the preceding five years was 17,750,000 bushels.

Utilization of the flaxseed supply may be measured by crushings which during the last season (October 1, 1931–September 30, 1932) totaled 19,751,000 bushels, compared with 28,777,000 bushels in 1930–31 and a 5-season (1924–25 to 1928–29) average of 40,991,000 bushels.

The 1931–32 domestic supply of flaxseed was supplemented by 9,063,000 bushels of imported seed, a quantity nearly equal to the October 1, 1931, domestic commercial supply available for crushing. Since domestic requirements for 1932–33 are larger than available supplies, it will be necessary to continue importation of flaxseed during the first half of 1933. Assuming crushings during 1932–33 (October 1, 1932–September 30, 1933) of about 16,000,000 bushels, and no change in stocks at the close of the season compared with those at the first of the season, about 5,500,000 bushels of seed must be imported during 1932–33. Imports during the period from September through December, 1932, aggregated about 2,450,000 bushels compared with 5,367,000 bushels during the same months of 1931.

Domestic demand for flaxseed and flaxseed products during 1931–32 and during the first four months (September through December) of the 1932–33 season was low, reflecting unusually light building and business activities, reduced purchasing power, and a limited outlet for linseed meal. Awards of building contracts were only about one-half as large as in 1931–32 and were near the lowest levels of the depression. Improvement from this level during 1933–34 sufficient to increase materially the demand for linseed oil is not probable. A factor that limits not only new construction but even repairing, especially of dwellings, is the low buying power of the general public. Less competition from cheaper drying oils may be a factor in increasing the use of linseed oil.

The very low level of farm income for 1932–33 restricts normal use of high-protein feeds, including linseed meal. Continued active competition from gluten feed, gluten meal, soybean meal, tankage, and, to a somewhat lesser degree than last season, from cottonseed meal, and liberal supplies of feed grains, are other restricting factors. Prices of feed grains and by-product feeds are low but because returns from feeding are also low, purchases of feeds have been restricted.

European demand for flaxseed was not very active during the calendar year 1932. Reduced 1932 flax crops in many of the smaller European countries may increase the demand for Argentine seed. However, since the 1932 European feed-grain crops are fairly large, demand for linseed cake and meal will remain small.

The gross return from an acre of flax in the United States in 1932 averaged about 25 per cent more than the gross return from an acre of wheat. From 1920 through 1930, the flax acreage tended to increase whenever the gross return from a harvested acre of flax was about 10 per cent or more above the gross return from a harvested acre of wheat. In 1931 and 1932, however, price response was modified somewhat because of heavy abandonment of flax acreage, greater reduction in flax yields than in wheat yields as a result of insect damage and drought, and the shortage and high price of flaxseed for planting purposes as compared with seed wheat in 1930 and 1931.

Flaxseed prices in the United States at the close of 1932 were the lowest since 1905, when a large crop, together with some reduction in consumption, placed domestic supplies on an export basis. Prices were also very low in 1906 and 1907 when exports were unusually large. Smaller United States crops in years following 1907, increased domestic requirements, and a gradually higher tariff, caused advanced prices. No. 1 flaxseed at Minneapolis averaged \$1.00 per bushel in December, 1932, compared with \$1.43 in December, 1931, and \$1.04 in December, 1905.

MEAT ANIMALS AND MEATS

The supply of meat animals on farms, in terms of total live weight of the three species, was larger on January 1, 1933, than a year earlier. This increase was due to the larger numbers of cattle and calves, which more than offset a decrease in sheep, for there was little change in hog numbers. Since January

1, 1928, the supply of meat animals has gradually increased each year and on January 1, 1933, it was about 10 per cent larger than in 1928. From 1928 to 1930, the steadily increasing numbers of cattle and sheep offset the decreasing hog numbers. From 1930 to 1932, the numbers of all species increased.

The commercial supply of meat, as measured by the total dressed weight of animals slaughtered under Federal inspection, did not reflect the increase in total meat animals from 1928 to 1932. The supply from slaughter in 1932 was 2.7 per cent smaller than in 1931 and 6.7 per cent smaller than in 1928. The supply in 1928 was the largest for the five years. It decreased in 1929 and 1930, increased slightly in 1931, and decreased to the lowest volume of the period in 1932.

Although the total dressed weight for each species of livestock tends to change from year to year as the number slaughtered changes, it is also affected by changes in the average live weight and to a very minor degree by changes in dressing yield.

The per capita supply of meat is affected by changes in population as well as by variations in the numbers and weights of animals slaughtered. The per capita supply (dressed-weight basis) obtained from federally inspected slaughter was 116.3 pounds in 1928, 112.9 pounds in 1929, 106.3 pounds in 1930, 106.8 pounds in 1931, and 103.3 pounds in 1932.

The fact that meat supplies have not increased with the increase in total number of meat animals on January 1 from 1928 to 1933, is explained by the failure of cattle and calf slaughter to increase during the period and by the varying relationship between January 1 hog numbers and total live weight of hogs slaughtered under Federal inspection during the following 12 months. This changing relationship of inspected hog slaughter to numbers on January 1 is due to several causes—the different proportions of total hog numbers on January 1 that are in areas outside the North Central (Corn Belt) States, the change in average live-weight from year to year, and the varying proportion of new-crop hogs that are marketed during the first three months of the hog-marketing year (October to December). The two latter causes are closely associated with the supply and the relative price of corn in the surplus hog-producing areas.

Whether the total inspected meat production in 1933 will exceed the small production in 1932 will depend upon whether cattle and calf slaughter increases sufficiently to offset the prospective decreases in the slaughter of hogs and of sheep and lambs.

The domestic demand for meats and lard, measured in terms of quantities taken at actual prices paid by consumers, continued to decline during 1932, as a result of a further reduction in consumer incomes. The per capita consumption of all meats and lard produced under Federal inspection during the year, amounting to 98.8 pounds, was 2 per cent smaller than in 1931, and the weighted average retail price of such products at New York was about 20 per cent lower. According to the weighted index numbers of retail prices of food for the entire country, published by the United States Bureau of Labor Statistics, retail prices of meat in 1932 were about 21 per cent lower than in 1931, those of cereal foods 11 per cent lower, and those of dairy products 16 per cent lower.

The reduction in demand apparently was about the same for all kinds of meat. Per capita consumption of federally-inspected hog products was slightly larger than that of a year earlier, whereas that of other meats was smaller, but the decline in retail prices of hog products was greater than that for either beef or lamb.

In addition to the depressing influence of lower consumer incomes, the domestic demand for meats produced under Federal inspection during 1932 also was adversely affected by an increase in farm and retail slaughter. This was especially true in the case of pork and lard. In the South, where only a small proportion of the supply of hogs is slaughtered under Federal inspection, hog production has increased sharply during the last two years. The number of meat animals slaughtered on farms and in retail establishments during 1932 was larger in nearly all parts of the country than in any other recent year.

Although a slight recovery in the general business situation occurred during the last half of 1932, there has been no improvement in the demand for meats. In view of the prospects for a continued low level of consumer incomes during the first half of 1933 and of the tendency for changes in the demand for meats to occur somewhat later than changes in consumer incomes, no material improvement in the demand for meats may be expected during the year.

The average price paid by packers for meat animals slaughtered under Federal inspection during 1932 was \$4.34 per 100 pounds, compared with \$6.26 in 1931, and \$10.54 in 1929—the postwar peak. These declines were accompanied by reductions in the total live weight of federally inspected slaughter in 1932 from that of 1931 of 3 per cent and from that of 1929 of 6 per cent. The decline in both price and supply resulted in a reduction of \$421,000,000, or 33 per cent, in the amount paid in 1932 from that paid in 1931, and \$1,368,000,000, or 61 per cent, from that paid in 1929.

The reductions in livestock prices since the depression began have not been greatly different from those of other agricultural products. Comparing average United States farm prices for December, 1932, with those of December, 1929, the declines were as follows: Hogs, 68 per cent; beef cattle, 60 per cent; lambs, 63 per cent; sheep, 69 per cent; dairy products, 51 per cent; fruits and vegetables, 64 per cent; wheat, 71 per cent; corn, 76 per cent; cotton, 66 per cent; poultry, 52 per cent.

HOGS

Slaughter of hogs under Federal inspection during the remainder of the present marketing year, which ends September 30, 1933, is expected to be somewhat smaller than in the corresponding period of 1932, with all the reduction occurring during the four months, January to April. The decrease in numbers will be offset in part by an increase in average weights. Little increase in the 1933 spring pig crop in the United States is indicated, but a substantial reduction in European hog production seems probable. The domestic and foreign demand for United States hog products during 1933 probably will not be improved materially.

DOMESTIC SUPPLIES

The number of hogs on farms January 1, 1933, was probably but little different from that on January 1, 1932, although the combined pig crops of 1932 were smaller than in 1931. The number of pigs saved in the spring of 1932 was estimated at about 49,600,000 head, and in the fall at about 29,100,000 head, making a total of about 78,700,000. The number saved in the spring of 1931 was estimated at 53,300,000, in the fall at 27,900,000, and the total for the year at 81,200,000. The total number saved in the North Central (Corn Belt) States was estimated at 59,400,000 in 1932 and 63,200,000 in 1931.

The 1932 spring pig crop was smaller than the average spring crop for the five years, 1927–1931, but the 1932 fall pig crop was much above the average fall crop for those years. As a result of this distribution, the proportion of the 1932–33 crop-year slaughter in the period October 1, 1932, to April 1, 1933, is expected to be smaller than usual.

Inspected slaughter during the 1932–33 crop-marketing year is expected to reflect the reduction in the number of pigs saved in the Corn Belt and the increased local and farm slaughter in that region, with this reduction offset somewhat by larger supplies from the increased production outside the Corn Belt. Total inspected slaughter in the 1931–32 marketing year was 46,655,000 head and present indications are that slaughter in the 1932–33 marketing year will be between 43,000,000 and 44,000,000 head, or not greatly different from that in 1930–31.

Inspected slaughter during the first three months of the 1932–33 year was 11,967,000 head, a decrease of 1,410,000 from the slaughter in this period in the 1931–32 year. The decrease in slaughter during the remainder of the 1932–33 year (January 1 to September 30, 1933) is indicated as 1,250,000 to 2,250,000 head. All of the reduction is expected to be in the total for the four months, January to April.

Because of the large supplies of corn and other feeds, and a hog-corn price ratio encouraging for feeding, the weights of hogs slaughtered in the 1932–33 year will be greater than in the preceding year, and probably above average, and will tend to offset in part the decrease in the number slaughtered.

Present indications are that the number of sows to farrow in the spring season of 1933 will not be much larger than in 1932, either for the whole country or for the Corn Belt States. The estimated number to farrow in the spring of 1933, based on breeding intentions shown by the December, 1932, pig survey, was about 2 per cent larger in each case. In other periods, similar to the present, in which hog prices were low and corn prices were relatively lower than hog prices, thus resulting in high hog-corn price ratios, sharp increases in hog production have occurred. Hence, the breeding inten-

tions reported seem low, especially in the western Corn Belt States, where the 1932 spring pig crop was short and where corn production is above average and corn prices are very low. On the other hand, hog prices for some months have been much lower than those ever before experienced by present-day hog producers; hence, the conditions that usually have controlled hog production in the past may not operate in the usual way.

The size of the 1933 spring pig crop also will depend upon the number of pigs saved per litter. The average number of pigs saved per litter in the spring season of 1932 was below that of both 1930 and 1931, but above that of the preceding three years.

Storage stocks of pork at the beginning of the storage season of the current marketing year were about average, but by January 1, 1933, such stocks, amounting to 494,000,000 pounds, were 12 per cent smaller than those of a year earlier and the smallest for that date since 1927. Lard stocks were relatively small throughout 1932, and storage holdings on January 1, 1933, amounting to 40,000,000 pounds, were 21 per cent smaller than those of a year earlier and the smallest on record for that date. The total reduction of pork and lard stocks from those of January 1, 1932, is equivalent to about 500,000 hogs.

Because of the rather unfavorable results of their storage operations during the last three years, packers have adopted a conservative attitude toward accumulating storage stocks this winter. This attitude has been influenced also by the expectation that supplies of hogs for slaughter next summer will be relatively large. The weakness of the hog market this winter compared with that of a year earlier, notwithstanding the reduction in slaughter supplies, is due in part to this reduced storage demand.

FOREIGN OUTLET

The downward trend in exports of United States hog products, which has been under way for several years, continued during the 1931-32 marketing year. Pork exports during the year were 30 per cent smaller than in 1930-31, but lard exports were only 1 per cent smaller. This reduction in exports was due mainly to larger slaughter supplies of hogs in foreign countries and the adoption of more stringent restrictions to international trade in the principal importing countries.

The foreign demand for United States pork during 1933 is expected to be somewhat stronger than that of a year earlier. Hog numbers in the principal foreign producing countries have been declining since the summer of 1931 and slaughter supplies in those countries during the current year probably will be considerably smaller than in 1932. By a system of voluntary agreements, imports of hams and bacon into Great Britain during December, 1932, and January, 1933, are being limited to a level 20 per cent under that of the corresponding period in 1931-32. The allotment to the United States for the period, however, permits a 12 per cent increase in exports of hams and bacon to Great Britain over those of a year earlier. Present indications are that permanent restrictions somewhat similar to those now in force will be adopted.

From the standpoint of foreign hog production, a somewhat stronger demand for United States lard during 1933 is in prospect. Because of the trade barriers now in effect and pending, in the chief lard-importing countries, however, exports of this product during 1933 may be somewhat smaller than those in 1932. No significant change in exports of United States lard to Great Britain, the principal foreign outlet, appears probable during the present year. Shipments to that country have been relatively stable during the last 10 years. During 1932, British takings of lard were smaller than in 1931, but they were about the same as the average for the last five years. Lard exports to Germany in 1932 were considerably larger than in the preceding year, chiefly because of the decrease in hog slaughter in that country. Although hog slaughter in both Germany and Denmark during 1933 is expected to be smaller than in 1932 imports of American lard into Germany may be reduced because of regulations with respect to tariffs, quotas, and control of available foreign exchange.

PRICES

Hog prices declined almost steadily throughout 1932, reaching the lowest levels in more than 50 years in late December. Although slaughter supplies in the 1931-32 marketing year were somewhat larger than in the preceding year,

the continued reduction in both domestic and foreign demand was largely responsible for the decline in hog prices.

From early August, 1931, to mid-February, 1932, prices followed a sharp downward trend. After a seasonal rise of brief duration in late February and the first half of March, the decline in prices was resumed and was not checked until the last week in May, when the weekly average at Chicago was \$3.19 per 100 pounds, the lowest in more than 35 years. A sharp advance in prices occurred during June and early July, largely as a result of a very marked temporary reduction in slaughter supplies. The high point of the advance was reached during the week ended July 9, when hog prices at Chicago averaged \$4.89, which was the highest weekly average since mid-November, 1931. Except for a temporary rise in early November, the downward course in prices was practically unbroken from mid-July until the last week in 1932 when the weekly average price at Chicago of \$2.95 per 100 pounds was the lowest since 1878. As compared with pre-war (1910-1914) farm prices, hog prices are relatively lower than prices of other meat animals, about as low as prices of feed grains, and much below the average price of all farm products.

The total live weight of hogs slaughtered under Federal inspection during the 1931-32 hog marketing year was about 4 per cent larger than that of a year earlier. The average price paid by packers was \$4.05 per 100 pounds, compared with \$7.21 in the previous year and a 5-year average of \$9.35. Packers paid \$430,000,000 for the hogs slaughtered under Federal inspection during the 1931-32 marketing year, as compared with \$735,000,000 in the year previous. This represents a decline of 42 per cent.

PRODUCTION TREND

From the point of view of supplies, both at home and abroad, the hog situation at the beginning of 1933 is more favorable than it was a year earlier. Inspected slaughter in this country is expected to be somewhat smaller in 1933 and a further reduction in slaughter in the leading European hog-producing countries is not unlikely. These prospects of an enlarged foreign outlet for pork and decreased domestic production, together with smaller storage stocks, indicate that the supply of hog products to be offered in the American market during 1933 will be smaller than in 1932. Whether the reduction in supply will result in an improvement in hog prices will depend upon improvement in the general economic situation affecting consumer demand.

It is highly probable that hog slaughter during the first half of 1934 will be increased somewhat over that in prospect for the first half of 1933, although no large increase in the spring pig crop of 1933 is now indicated. With large supplies of corn and with hog production below average in the western Corn Belt, it is to be expected that hog production in that area will tend to return to more normal volume as soon as prices offer any incentive to such increase. Further expansion in the eastern Corn Belt, where production is now on a relatively high level, is likely to be small unless developments during 1933 should make hog production relatively more profitable than alternative enterprises in that area. Further expansion after 1933 in the South would not be expected unless there is a further shift to feed crops. The increase in hog production in the South in spite of the very low prices of hogs, has been largely a move to establish a more self-sustaining food supply on farms, and this objective now seems to have been largely accomplished.

BEEF CATTLE

Cattle numbers in the United States increased in 1932, making the fifth consecutive yearly increase since the low point reached at the beginning of 1928. Total numbers now are nearly 14 per cent larger than in 1928 and almost as large as in early 1924. The expansion during the last two years has resulted largely from the holding back of cows; the number of these, beef and dairy combined, is now the largest on record.

The estimated number of cattle on feed was slightly larger on January 1, 1933, than on that date a year earlier and increased feeding during all of 1933 seems probable. Slaughter supplies of both cattle and calves during 1933 are expected to be somewhat larger than those in 1932, but total slaughter is not likely to be sufficient to prevent numbers on farms from showing another increase at the beginning of 1934.

No significant improvement in the demand for beef can be expected until there is an increase in consumer buying power.

CATTLE SUPPLIES

Cattle numbers increased again during 1932, and on January 1, 1933, were probably about 64,500,000 head, or about 2,000,000 more than a year earlier. Because of the small slaughter of cows and calves in 1932, it is probable that the increase was mostly in these classes, with little increase in steers. This brings the total of beef and dairy cows combined to the largest number on record, and the calf crop in 1933 will be the largest ever raised in this country.

Cattle numbers now are nearly as large as at the beginning of 1924, but there is a considerable difference in the distribution of the total by classes. The proportion of cows and calves is considerably larger and that of steers smaller than at the earlier date. Although cattle numbers have increased steadily since 1928, this increase has not yet been reflected in market supplies or in inspected slaughter. Slaughter of cattle under Federal inspection in 1932 was the smallest in the last five years and calf slaughter was the second smallest. It is probable, however, that farm and retail slaughter of cattle was somewhat larger, and that of calves considerably larger, than in 1931; hence, total slaughter of all kinds may have been about the same in the two years.

On the whole it seems probable that the slaughter of both cattle and calves during 1933 will be larger than in 1932. Whether this slaughter will greatly exceed that of 1932, depends on the policy followed by producers in disposing of their old cows and in selling calves for slaughter. Undoubtedly, the very low prices of cows, especially of the lower grades, have tended to restrict the marketing of these during the last two years. In many cases, such cows will bring little more than transportation and marketing costs if shipped any considerable distance for sale. Furthermore, the relationships between prices of feed and prices of calves, steers, and dairy products during 1932 may have tended to encourage the retention of cows for production purposes. If these conditions continue, large numbers of old cows may be kept on farms and ranches to raise calves, as long as they continue to reproduce.

Steer slaughter in 1932 was smaller than in 1931, but it is very probable that such slaughter will be larger in 1933 than in 1932 and the largest for any year since 1928. The estimated number of cattle in the Corn Belt States on feed for market as of January 1, 1933, was 5 per cent larger than the relatively small number on feed in those States a year earlier, but in the 11 far western States some decrease in the number on feed was indicated. Judging from the weights and number of cattle on feed and the intended months of marketing as reported by a large number of feeders, it seems probable that the supply of fed cattle will be somewhat smaller during the first quarter of 1933 than a year earlier, but larger during the second quarter. With abundant supplies and low prices of feed grains in all sections, increased feeding during all of 1933 seems probable. Market supplies of fed cattle during the last half of the year, therefore, probably will be larger than during the corresponding period of 1932.

Although growers apparently carried considerable numbers of steers and feeder calves into 1933 because of low prices, it hardly seems probable that such a holding policy will be continued through the year. Many cattle producers, however, are being refinanced by the regional agricultural credit corporations and to some extent the marketing of steers in 1933 will be determined by the policies adopted by these organizations and by the general financial situation during the second half of 1933.

FOREIGN SUPPLIES

Supplies of cattle and beef in foreign countries, available for export to the United States during 1933, are expected to be larger than during 1932, but the actual imports are likely to continue relatively small. With northern Mexican ranges reported to be well stocked with marketable animals, cattle imports will be as large as in 1932, and probably larger if there is any improvement in cattle prices in the United States. Cattle imports into the United States during 1932 totaled 104,000 head as compared with 93,000 head in 1931, and 232,000 head in 1930. Of the 1932 total, Mexico supplied 91,000 head, and only 13,000 head came from Canada. Cattle numbers appear to be increasing in both Mexico and Canada. It is not yet clear what influence the Ottawa Agreements may have on disposals of Canadian cattle, but it appears that British markets will provide a larger outlet for these cattle than they have in recent years.

Canned beef inspected by the Bureau of Animal Industry for entry into the United States during 1932 totaled 21,854,000 pounds, compared with 18,121,000 pounds in 1931 and 48,533,000 pounds in 1930. Practically all of these imports came from South American countries. Under existing regulations this is the only type of beef admitted from those countries. Total exports of beef from South America declined in 1932. The reduction was due largely to increased European cattle numbers and new trade restrictions on the part of importing countries, especially Great Britain, the principal outlet for South American beef.

The regulations on meat imports into Great Britain do not restrict beef imports from Canada and New Zealand, the principal sources of the small imports of fresh and frozen beef into the United States. British markets, therefore, are expected to provide larger outlets for beef from those sources than heretofore. Imports of fresh and frozen beef into the United States in 1932 totaled only 882,000 pounds compared with 1,857,000 pounds in 1931. Receipts from New Zealand were reduced sharply.

FEEDER DEMAND

Demand for feeder cattle during the last half of 1932 was probably not greatly different from that during the corresponding period a year earlier. Although shipments of stocker and feeder cattle from stockyards markets into the Corn Belt States during the last six months of 1932 were 10 per cent smaller than in the corresponding months in 1931 and were the smallest for those months in at least 14 years, reports from cattle feeders on the origin of cattle on feed on January 1, 1933, showed a marked increase in the proportion of locally produced cattle among those on feed in the Corn Belt and some increase in the proportion obtained from outside points other than public stockyards. Although prices of feeder cattle averaged slightly lower during the last half of 1932 than during the corresponding period in 1931, the spread between this average and the average price of the better grades of finished cattle was considerably smaller than that of a year earlier and somewhat smaller than the average of the last five years.

The weak feeder demand which prevailed from early 1930 through the first half of 1932 was largely the result of unprofitable returns from cattle-feeding operations, the difficulties encountered by feeders in obtaining credit, and scarcity of feed in some areas. Because of the advance in the prices of fed cattle during the summer, returns from such cattle marketed during most of the summer and early fall of 1932 were relatively favorable for feeding. The 1932 corn crop was relatively large. Corn production in the western Corn Belt, where cattle are fed in largest numbers, was about 40 per cent larger than in 1931. The amount of credit available to cattle feeders was increased somewhat by the recently established regional agricultural credit corporations.

Present indications point to an increase in cattle feeding during 1933. The supply of cattle available for feeding is expected to be larger than in 1932, and there is an abundant supply of low-priced feed in all of the principal cattle-feeding areas. The regional agricultural credit corporations are now making funds available in all areas for financing the operations of feeders whose experience and financial situation seem to justify advances.

PRICES

The downward trend in cattle prices which began in early 1930 continued during 1932, and at the end of the year prices of all kinds of slaughter cattle were at the lowest levels reached in more than 25 years. Prices of the better grades of slaughter cattle declined sharply from early January to mid-May. Following the low point in mid-May, they advanced until mid-September as the result of an extreme scarcity of fed cattle and the usual improvement in the demand for the better grades of beef during that season of the year. The price decline on these grades during the last three months of the year was much greater than usual, amounting to about \$3 per 100 pounds. The price of Choice grade steers at Chicago during December, 1932, averaged only \$6.66 per 100 pounds as compared with \$11.14 in December, 1931.

Prices of the lower grades of slaughter steers fluctuated around a fairly stable level during the first half of 1932, advanced somewhat during the early summer, and then declined almost steadily until the end of the year. The average spread between prices of Common and Choice grade steers at Chicago during December,

1932, was \$2.92 as compared with \$6.53 in December, 1931, when the spread was one of the widest on record. The decline in beef-steer prices from December, 1931, to December, 1932, amounted to \$4.48 for Choice and Prime grades, \$2.96 for Good grade, \$1.55 for Medium grade, and 87 cents for Common grade. Prices of stocker and feeder cattle declined only 43 cents per 100 pounds during the same period.

The fluctuations in the prices of slaughter cows during 1932 were somewhat similar to those in the prices of the lower grades of slaughter steers, and prices of Common cows at Chicago in December, 1932, probably were as low as ever reached for such cattle on that market.

The decline in the prices of calves during 1932 was greater than the average decline in cattle prices and the margin between calf prices and cattle prices was the smallest in many years. The price of slaughter cattle during 1932 averaged \$4.94 per 100 pounds compared with \$6.23 in 1931, and \$8.54 in 1930. The average price of slaughter calves was \$5.05 per 100 pounds in 1932, \$7.10 in 1931, and \$9.67 in 1930. The price declines in 1932 were accompanied by reductions of 7.5 per cent in total live weight of cattle, and 5 per cent in total weight of calves slaughtered under Federal inspection. The decline in both price and supply resulted in a reduction when compared with 1931 of about \$148,000,000, or 27 per cent, in the gross return to producers for the cattle and calves slaughtered under Federal inspection.

LONG-TIME PRODUCTION TRENDS

Cattle production in this country has moved through three complete cycles of increasing and decreasing numbers since 1880. The upswing of the second cycle was eight years in length and that of the third, six years. The upswing of the present cycle, which had its beginning in 1928, has been under way for five years but the increase in total cattle numbers has not yet been reflected in an expansion in cattle slaughter.

If changes in slaughter had followed changes in numbers, as in corresponding periods in previous production cycles, slaughter would have begun to increase in 1931 and would have tended to restrict the increases in numbers that took place in 1931 and 1932. Lacking this restraining factor, numbers at the beginning of 1933 were about 8,000,000 head larger than in January, 1928. Nearly half of this increase, or 4,000,000 head, was in cows and heifers 2 years old and over, and the number of these on January 1, 1933, was the largest ever reached in this country, and the number of calves born in 1933 will be the largest.

The potential yearly production of cattle and calves, based on total cattle, and on cows of reproductive age, January 1, 1933, is ample for supplying a relatively large per capita quantity of beef and veal and probably excessive for remunerative prices. Production in 1932, if there had been no change in inventory numbers between the beginning and end of the year, would have furnished about 23,300,000 head of cattle and calves for slaughter of all kinds, wholesale, retail, and farm. In 1925, when the inspected slaughter of cattle was the fifth largest and of calves the largest on record, total slaughter of cattle and calves reached an estimated figure of about 24,600,000 head.

With both total cattle and total cow numbers larger at the beginning of 1933 than a year earlier, total slaughter of cattle and calves in 1933 could equal that of 1925, with no decrease in inventory numbers. This means that a substantial increase in slaughter during 1933 is necessary if cattle numbers are not to show a further increase by January, 1934. Whether such an increase in slaughter occurs will depend upon the policy followed by producers in disposing of veal and other calves and in shipping old cows and dry cows and yearling heifers. The marketing of low-grade cows for slaughter, however, has been greatly restricted, largely because of the relatively low prices obtainable for them; it is expected to continue small until prices for such cattle improve considerably.

Present production of meat animals (cattle, hogs, and sheep) seems fairly well adjusted proportionately among the three species, as well as to present average production of feed grains and feeds, and to available pasture and range. It also seems ample for consumer demand, under more prosperous business conditions, at reasonably remunerative prices. A further expansion in cattle numbers is likely to result in a situation wherein any general improvement in commodity prices during the next few years, resulting from improved business conditions, will not be reflected in higher cattle prices because of increased supplies of cattle and calves for slaughter.

SHEEP AND WOOL

A material reduction in numbers of lambs and sheep on feed and apparently some reduction in total breeding sheep in the United States January 1, 1933, resulted from the reduced lamb crop and heavy death losses in early 1932. The lamb crop is likely to be larger in 1933. The prospect of extensive forced liquidations in the sheep industry has now been reduced, at least for the time being. It appears unlikely that sheep numbers will increase in the United States during the next few years, but decreases are likely to be moderate. Although slaughter in 1932 was reduced slightly, declining consumer demand caused prices to fall. Improvement in demand awaits increased employment and consumer buying power.

Wool production is high both in the United States and in foreign countries. The general business depression affected wool-textile industries adversely, but since early summer wool consumption has increased. Although some of the increase has been lost in the United States, consumption is still well above the average rate for 1932. The improvement in domestic consumption has strengthened domestic wool prices. Unusually heavy offerings in foreign countries have been taken at stable prices.

SHEEP AND LAMBS

Sheep numbers on January 1, 1933, have not yet been estimated, but they were apparently smaller than on January 1, 1932. Such decrease as occurred was in the number of lambs on feed for market and in breeding flocks in the Western States.

The number of lambs and sheep on feed for market January 1, 1933, was estimated at 5,239,000 head, a decrease of about 900,000 head, or 15 per cent, from the number on feed January 1, 1932, and the smallest number on feed January 1, since 1929. About two-thirds of the decrease (or 600,000 head) was in the number on feed in the Corn Belt States, with most of this in the area west of the Mississippi River. The decrease in the Western States, including Texas and North Dakota, was about 300,000 head. Although there were decreases in nearly all the Corn Belt States, the situation in the Western States was more varied, about half the States having decreases and the other half increases. The decrease in lamb feeding was due in part to the decrease in the lamb crop and in part to the larger proportion of the lambs marketed going to immediate slaughter during the period from August to November, inclusive.

The lamb crop of 1932 was estimated at 29,717,000 head, a decrease of 2,650,000 head, or 8 per cent, from that of 1931, and a decrease of 1 per cent from that of 1930. This reduction was caused by the sharp decrease in the number of lambs saved per 100 ewes on January 1, which was the smallest in the nine years for which estimates have been made. All of the decrease was in the western sheep States, where the decrease in the lamb crop of 1932 was 12 per cent. The native-lamb crop of 1932 was a little larger than that of 1931. The small lamb crop in the Western States was caused by the very unfavorable weather at breeding time, the heavy losses of ewes in the late winter and early spring resulting from the severe weather and shortage of feed, and the rather heavy losses of young lambs in the early lambing areas.

Although the lamb crop was 8 per cent smaller in 1932, this was only partly reflected in slaughter during the first eight months of the crop-marketing year, May 1 to December 31. Inspected slaughter during these months was 11,855,000 head, a decrease of about 750,000, head from the same period in 1931. Nearly all of this decrease came in October, November, and December. The proportion of sheep to lambs in the slaughter during this 8-month period in 1932 was smaller than the small proportion in 1931, for the very low prices for old and cull ewes restricted the marketing of these even more this year than last.

Although there may have been a reduction in the number of breeding ewes in the Western States on January 1, 1933, this may not result in a decrease in the 1933 lamb crop in those States. The number of lambs saved per 100 breeding ewes on hand January 1 has averaged 80 for the last eight years. In 1932 it was 70.9. Evidence now available on ewe numbers indicates that there will be an increase in the lamb crop if the number saved per 100 ewes is equal to the average.

The number of lambs saved per 100 ewes in the native-sheep States in 1932 was somewhat above average. If it should be only about average in 1933, the decrease in this factor would probably only about offset the probable increase

in number of breeding ewes in these States. Thus there is fair likelihood that the 1933 lamb crop may exceed that of 1932.

The condition of sheep in the Western States early in 1933 is considerably better than it was a year earlier, the January 1 condition being 87 this year compared with 82 last year and a 10-year average of 91. Range conditions are considerably better than they were a year earlier and supplies of hay and feed grains are much larger. Rather severe weather about the middle of December, which carried temperatures in some States to near-record lows, came in the midst of the breeding season. This may tend to cause a smaller lamb crop than might otherwise be expected from the condition of sheep and feed supplies.

Weather and feed conditions in California during November and December were very unfavorable in the early-lambing areas. Lack of seasonal rains in late 1932 has greatly delayed the growth of early grass, and unusually cold weather in early December caused considerable losses of lambs and some losses of ewes. Supplies of old pasture feed are almost exhausted, and although hay and grains are abundant and cheap, the financial conditions of most sheepmen limits their ability to buy. Lack of green feed and shortage of other feed are expected to delay the development of the early lambs and may lower the quality of the lambs at marketing time.

The trend of sheep and lamb prices has been sharply downward since early 1929. In April, 1929, when the decline began, the average price of lambs at Chicago was \$16.82, and in December, 1931, it was \$5.32. Prices in early 1932 recovered somewhat from this very low level, but again declined during the spring, reaching the lowest levels in 30 years in late May. From June to mid October, prices declined moderately. Since late October some advance in prices has occurred, and the average price of lambs at Chicago in December was \$5.82. The average price paid by packers for sheep and lambs slaughtered in 1932 was \$5.64 as compared with \$7.04 in 1931 and \$8.97 in 1930. The total value of sheep and lambs slaughtered under Federal inspection during the calendar year 1932 amounted to about \$81,000,000, which was about 21 per cent less than the value in 1931.

Prices of feeder lambs have been fairly steady during the last half of 1932. The average price of Good and Choice feeder lambs at Chicago was \$4.99 during this 6-month period as compared with \$5.13 during the last half of 1931. The spread between prices of feeder lambs and slaughter lambs has been smaller during recent months than during the same period last year. During the period from July to December in 1932 prices of Good and Choice slaughter lambs at Chicago averaged about \$1 per 100 pounds higher than prices of Good and Choice feeder lambs at that market. During the same months in 1931 the average margin was \$1.55. Prices of slaughter ewes advanced somewhat during the winter and early spring of 1932, but declined to the lowest levels on record during May and June. Since then some recovery has occurred and prices in December were only slightly lower than in the corresponding month a year earlier. The average price of aged sheep at Chicago in 1932 was \$2.20 per 100 pounds, as compared with \$2.79 in 1931 and \$4.32 in 1930.

WOOL

World wool production, favored by good weather and ample feed supplies in the principal producing countries of the Southern Hemisphere, has been at a high level in recent years, with no prospect of any great reduction during the coming season. However, supplies have been fairly readily absorbed, and the outstanding feature of the current wool-marketing season in the Southern Hemisphere has been the increased movement of wool during the first half of the season as compared with the same period last season.

The low level of wool prices during the last four seasons might be expected to cause a shift from sheep and wool to alternative products. But prices of alternative products are also depressed, and alternative opportunities are limited in the important sheep-and-wool-producing areas abroad. Moreover, to a great extent the depreciation of currencies has offset much of the decline in gold prices of wool in many foreign-producing countries.

Wool production in 1932 in 20 countries for which preliminary figures are available, is estimated at 2,814,000,000 pounds, a decrease of 14,000,000 pounds or 0.5 per cent as compared with the large clip of 1931. These 20 countries furnish a little over four-fifths of the world's clip, exclusive of Russia and

China. The fairly heavy decreases in the 1932 clips of the United States and New Zealand, and slight decreases in Argentina and the Union of South Africa, are almost balanced by increases in Australia and the United Kingdom.

The production of shorn wool in the United States increased from 228,000,000 pounds in 1922 to 369,000,000 pounds in 1931, and decreased 7.3 per cent in 1932 to 342,000,000 pounds. The 1931 production of pulled wool was 66,000,000 pounds. The decrease in the United States wool production in 1932 was due partly to death losses that reduced the number of sheep shorn compared with numbers January 1 and to a lower-than-average yield per sheep. Although sheep numbers in the United States were probably lower on January 1, 1933, than a year earlier, it does not necessarily follow that the wool clip in 1933 will be below that of 1932, as weather and feed conditions on western ranges this winter have been much better than they were last year.

The Australian wool clip for 1932 was estimated in the early part of the season at 984,000,000 pounds, an increase of 4 per cent above 1931 and 8 per cent above 1930, but this is only 2 per cent higher than the clip in 1928. The 1932 estimate is expected to be revised slightly downward. In New Zealand production in 1930 and 1931 reached 266,000,000 pounds each year, but fell to 250,000,000 pounds in 1932, according to preliminary estimates. The clip in the Union of South Africa reached 311,000,000 pounds in 1928, fluctuated slightly in the following years, and in 1932 was estimated at 301,000,000 pounds, a decrease of 2 per cent compared with the 1931 clip. Production in Argentina in 1932 was estimated at 331,000,000 pounds, or 1 per cent below 1931, compared with 351,000,000 pounds in 1930 and 352,000,000 pounds in 1928. The Uruguayan clip of 121,000,000 pounds was approximately the same in 1932 as in 1931, compared with the record production of 154,000,000 pounds in 1930.

The number of sheep in Australia on January 1, 1932, was the largest on record. Numbers in New Zealand have decreased 6 per cent during the last two years. The June, 1932, estimate for the Union of South Africa also shows that woolled sheep decreased 2 per cent. In Uruguay there has been a decrease of 25 per cent since 1930, largely because of poor feed conditions and unfavorable weather.

After a decline in May, 1932, to the lowest level of the past 14 years, consumption of combing and clothing wool reported by the United States manufacturers rose rapidly and for September was only 7 per cent below the 1931 high point. By November, consumption had declined 20 per cent but was still well above the monthly average for 1932. Consumption of combing and clothing wool for the first 11 months of 1932 was only 77 per cent as large as for the comparable period in 1931, but it was 93 per cent as large as during the first 11 months of 1930. The decline for mills reporting in 1932 compared with those reporting in 1931 was 90,000,000 pounds.

During the first 11 months of 1932 only 14,822,000 pounds of combing and clothing wool were imported into the United States, compared with 33,777,000 pounds imported in those months in 1931 and 97,697,000 pounds in 1929. Figures on total imports for the year will probably be the smallest in the last 50 years.

Consumption of combing and clothing wool in the United States for the five years 1927-1931 averaged about 465,000,000 pounds annually. The decline in 1932 probably carried consumption below production, but there is no indication of a burdensome accumulation of stocks. Over the next few years it is probable that production and consumption in the United States will be fairly well balanced, and that imports, although probably continuing, will be small. Any downward trend in domestic production would strengthen the position of the domestic wool-growing industry.

Foreign demand on the whole continued low last year, but since July it has shown improvement. Improvement in wool-textile industries abroad, although slight, is associated with an improvement in activity in cotton textiles and some other industries. The steadiness of wool prices abroad while marketings from the Southern Hemisphere have been particularly heavy, indicates the degree of improvement in demand.

Great Britain's tariff on yarns and tissues and its depreciated currency reduced imports of wool manufactures and increased the activity in the British industry in 1932. Also, British exports of wool manufactures and semimanufactures increased. In Germany, France, and Belgium, on the other hand, activity was greatly reduced in the first half of 1932 and imports of raw wool

decreased. Since July, activity appears to have improved in these countries. Imports of wool into Italy and Japan increased in 1932.

Stocks in European countries are apparently not excessive. With the improvement in the industry during the summer and fall of 1932, continental buyers became active bidders in primary markets and shipments from Australia to Germany, France, and Belgium for the first five months of the new season (July to November, 1932) were considerably larger than in those months in 1931.

Wool prices in the United States continued their downward trend during the first half of 1932, then rose. In the decline since 1928 the United States farm price of wool fell from 38.7 cents per pound in June, 1928, to 7 cents in July, 1932, when it was 40 per cent of the 1910-1914 average. The average for December 15, 1932, was 9.2 cents per pound. Although prices at Boston at the close of 1932 were 10 to 25 per cent below January prices, they were considerably higher than the year's low in July. During July, 1932, prices of wool at Boston reached the lowest levels since 1897. At the close of the year prices of grease wools were 15 to 20 cents a pound at Boston compared with 19 to 24½ cents in January, 1932. Strictly combing territory wools, scoured basis, were 31.5 cents for 46s and 45 cents for 64s, 70s, and 80s, on December 31, compared with 37.5 cents and 59 cents, respectively, the first week in January, 1932.

Foreign prices (gold basis) were more stable than domestic prices during 1932. Fluctuations occurred at all series of the London sales, and prices for fine and medium wools set the highs for the year during the September sales. At the close of 1932, however, prices of all wools were below the January level. Prices in Australia and New Zealand have been firm with a rising tendency at the 1933 sales.

The comparative positions of United States and foreign producers are indicated in part by prices. Prices received by Australian producers in several important areas in 1931 averaged 7.4 pence per pound, Australian currency. At the rates of exchange prevailing in the latter half of 1931, when most of this wool was sold, the price was equivalent to about 10 cents per pound in gold, or United States currency, but at par it would be equal to about 15 cents per pound. It is the gold price that is important generally in world markets, but to the Australian grower (who pays his bills in currency) the latter price is most important. Australian currency prices fell about 57 per cent from 1927-28 to 1930-31, and have held nearly stable since. Prices to growers in Texas averaged 15 cents per pound in 1931 compared with 38 cents in 1928, a decline of nearly 60 per cent. The unweighted farm price for Texas in 1932 was 10.6 cents per pound, a decline of 72 per cent from the 1928 level. In comparing prices of these wools it should be noted that Australian wool shrinks about 50 per cent, whereas the shrinkage loss on Texas wool is around 65 per cent.

Because of differences in the wools and in the preparation of fleeces, direct comparisons between foreign and domestic prices, even on a scoured basis, do not give exact differences in the price levels. However, for December, 1932, the margin of Boston over London prices for the most nearly comparable grades amounted to 20.6 cents, scoured basis, on 64s, 70s, and 80s, 19.2 cents on 56s, and 23 cents on 46s. These margins were wider than they were in early summer, but were below those prevailing in periods of heavy imports.

LONG-TIME PRODUCTION TRENDS

The trend in total sheep numbers during the next few years will be determined largely by the trend in the western sheep States. As inventory numbers on January 1, 1933, showing the total and the distribution among classes in the Western States, are lacking, the situation in that area is uncertain. It is assumed that there has been some decrease in breeding flocks in these States, occurring mostly in the States where death losses of ewes were heavy in the early months of 1932. There is considerable uncertainty as to the number of ewe lambs from the 1932 crop that were kept for replacement purposes, but it seems probable that this number was smaller than a year ago and probably below the number needed for replacement of normal disappearances of older ewes.

During the last six months the financial situation of the western sheep industry has been considerably improved through the shift of a considerable part of the indebtedness to Government-sponsored financial organizations, both those operating through the intermediate credit banks and those organized by the

Reconstruction Finance Corporation. From the point of view of longer period financing and freedom from pressure, such as might come from the necessities of local banks, the situation has been materially relieved. But at the same time the financial situation of the industry, from the point of view of relation of total liabilities to value of assets, is not so good as it was a year ago. Returns from wool and lambs in 1932 were smaller than in 1931 and in many cases were hardly sufficient to cover actual operating costs, thus leaving nothing to cover taxes, interest on sheep loans, or interest on mortgage loans on ranch or grazing lands.

The present policy of the Government-sponsored loaning agencies seems to be to try to prevent any general immediate liquidation of the western sheep industry. The same policy is being followed by those local banks and loan companies that are able to do this. There has been some shifting of ownership from less efficient operators to more able or better located ones, and such shifts will continue. On the whole, the situation seems to be one of ability to maintain about present numbers during the next year, and possibly two years, awaiting developments. Given good years of weather and feed supplies it is possible that running expenses that have been sharply curtailed can be met with prices no higher than in 1932, but there would be little chance of any reduction of indebtedness or of fully meeting overhead expenses.

Maintenance of present numbers, however, would indicate that output of lambs and wool would not be greatly reduced. Any recovery in prices, then, would have to come from improved purchasing power and not from reduced supplies. The policy to be followed by the controlling interests in western sheep production after this waiting period, or the end of 1934; will be determined by the trend of prices of lamb and wool during this period.

In Texas, where the expansion of sheep numbers has been larger than in any other States and where this expansion since 1930 has been possible only because of very favorable feed conditions in the main sheep area, a series of years of poor feed and pasture, or one year of very severe drought, would probably reduce numbers sharply.

In the native-sheep States present indications do not point to much change in stock sheep numbers, but the total number of all sheep on farms on January 1 from year to year will be influenced by changes in the number on feed.

MOHAIR

The outlook for mohair at the beginning of 1933 is no better, if as good, as it was at the beginning of 1932. In spite of very low prices of mohair in consuming centers, consumption has failed to show any increase and stocks have continued to increase. Mohair production in 1932 was probably at least as large as in 1931, but some decrease in 1933 seems fairly certain. Prices received by producers during 1932 were lower than the very low prices of 1931 and gave producers little incentive to try to keep up the quality of their flocks or even to preserve the flocks themselves if to do so involves additional expenditure for feed or care. The outlook for the next few years seems to be more favorable for fine-haired goats than for the coarse-haired kinds.

Definite figures on consumption and stocks of mohair are not available but the opinion of experienced observers is that stocks in all hands at the beginning of 1932 exceeded 28,000,000 pounds. At that time the bulk of these stocks was in the hands of the National Wool Marketing Corporation. During the course of the year the corporation disposed of nearly all of its mohair holdings. One large lot was sold to carpet manufacturers under agreement to use it only for carpet and rug production; the remainder was sold mostly in one lot to one large mohair manufacturer. This corporation was no factor in handling the 1932 clip, most of which was bought for the account of mohair manufacturers. A maximum estimate on consumption in 1932 seems to be about 8,000,000 pounds. Available records of shipments of 1932 mohair from Texas indicate that the combined spring and fall clip was larger than that of 1931, and that total production in the United States was probably no smaller than in 1931, when it was estimated at 19,000,000 pounds. It seems probable, therefore, that stocks at the beginning of 1933, excluding the quantity taken for carpet manufacture, were from 6,000,000 to 8,000,000 pounds larger than stocks of a year earlier and were equal to more than four times the quantity consumed in 1932. Imports in 1932 were negligible.

The failure of consumption to expand, in spite of the very low cost of the raw material, was due to the continued restriction of the activity in the indus-

tries that use most of the mohair products—furniture, automobile, and passenger and sleeping car manufacturers. Efforts in 1932 to find increased outlets for other kinds of mohair fabrics were not very successful, but are being continued. Apparently any considerable increase in consumption must come from the industries that utilized most of the manufactured mohair in the past. The demand for fine kid hair has been well maintained and stocks of kid hair have shown little accumulation.

Developments in foreign countries during 1932 were a little more favorable than in the United States, since consumption there apparently increased. Combined production in the Union of South Africa and in Turkey during the 1932-33 season is estimated at about 19,000,000 pounds, which is a little less than in the 1931-32 season, but above the 5-year average. Although stocks in South Africa were larger at the beginning of the 1932 season than they were a year earlier, shipments were rather large during the following months and the carry-over this season will probably be much reduced. The 1932 spring clip in Turkey was late in moving, but shipments have been heavy and by the end of 1932 remaining stocks were considerably smaller than the heavy stocks of a year earlier. Fairly large lots of mohair from Turkey have been exported to Russia for mixture with low-grade wool, and other European countries apparently have been using considerable quantities for the manufacture of carpets and coarse blankets. Imports of mohair into Great Britain during the last half of 1932 were much above those for the last half of 1931.

In South Africa, because of the low price of mohair, large numbers of goats have been sold for slaughter, and a sharp reduction in numbers and of mohair production seems probable. Unless prices for Turkish mohair make a material recovery, a drastic reduction in production in that country during the next two years is expected.

Angora-goat numbers in Texas have been maintained during the last two years, largely because of very favorable feed conditions. Losses were large in 1932, because of bad weather after shearing both in the spring and in the fall, and the kid crop was apparently insufficient to replace these losses. Numbers at the beginning of 1933 are probably smaller than those of a year earlier and 1933 mohair production probably will be reduced. Unfavorable feed conditions in the chief goat area in 1933 would probably result in very heavy losses. Since the feed utilized by goats in Texas is of little value for other livestock, possibilities for shifts to other production are not great and goat numbers and mohair production during the next few years will be controlled largely by weather and feed conditions. A somewhat similar situation exists in the other mohair-producing States.

HORSES AND MULES

A decline in the number of horses, starting in 1918, and a decline in the number of mules, starting in 1925, continue at rates that eventually will result in a shortage of work stock. Already prices for desirable types and weights of animals reflect this growing shortage. More animal power is needed on many farms and it seems entirely probable that this need will be reflected in a rather quickly growing demand for good animals, once improvement in prices of farm commodities is under way.

On January 1, 1932, horses on farms numbered 12,679,000. This is only 59 per cent of the number reported on January 1, 1918, when the largest number on record was reported. It may be argued that even this large decrease in horse numbers has resulted in no shortage of horses and that the present number would be sufficient to serve the needs of farmers for several years to come. But the present number of work horses can not be maintained, because the number of animals reaching working age is not large enough to replace animals of working age that die. Furthermore, the efficiency of work horses is declining because of increasing average age. Moreover, the fact that, since 1929, prices of horses have declined relatively less than have those of any other important agricultural product indicates that the shortage of horses is already being felt. From December 15, 1929, to December 15, 1932, farm prices of horses declined 27 per cent and prices of all farm products declined 61 per cent. A part of the decrease in horse prices was probably due to the greater ages and poorer quality of horses being sold. On December 15, 1932, the average farm price of horses, \$56 per head, was the same as the December, 1931, price, whereas the price of all farm products had declined 21 per cent.

In terms of unit amounts of other farm products required to buy a horse, horse prices at present are the highest since before the World War.

For several years the number of colts on farms has not been sufficient to maintain the present number of work horses, as shown by figures for the last three census years. In 1920 about 12.8 per cent of the horses on farms were less than 2 years of age. By 1925 the percentage had dropped to 6.7, and in 1930 it had increased slightly, to about 7 per cent. It is generally considered that the average life of farm horses is about 15 to 16 years. On this basis, census figures for 1930 indicate that the number of colts on farms was only about 55 per cent of the number needed annually to maintain a constant horse population equal to that of 1930. Stated in another way, the rate of breeding in 1928 and 1929 was so low that the average life of farm horses would need to be increased to about 25 or 30 years if the horse numbers of 1930 were to be maintained.

The mule outlook is somewhat similar to that for horses. During the period from December 15, 1929, to December 15, 1932, the average farm price of mules declined 34 per cent, or about one-half as much as all farm products. On December 15, 1932, the average farm price of mules, \$61 per head, was \$2 below the December, 1931, price. On January 1, 1932, there were 5,082,000 mules on farms. This was 86 per cent of the number in 1925, when mule numbers were greatest. The raising of mule colts in the States from which the Cotton Belt secures its work mules has decreased sharply during recent years. On January 1, 1925, in the six States that produce the largest number of mule colts, the number on farms was 117,000. On January 1, 1932, there were only 47,000 mule colts in the same States, a decrease of about 60 per cent.

In 1920 about 14.4 per cent of all mules on farms were under 2 years old; in 1925 only 6.6 per cent were under 2 years old; and in 1930 only about 3.1 per cent were under 2 years old. At the rate of mule-colt production in 1928 and 1929 the number of mules on farms in 1930 could be maintained only if the average life of mules were about 60 years, about three times the actual life.

The number of work horses and mules probably will continue to decline for several years, and this decline can be checked only if extensive breeding for both horse and mule colts is soon resumed. At this time the possibilities of overbreeding seem remote. Available returns from most States that have stallion and jack registration laws show that the number of such animals used for public service has continued to decline. During the 3-year period 1929-1931 the total number of licensed stallions in Illinois, Indiana, Iowa, Kansas, Michigan, Missouri, North Dakota, Oklahoma, South Dakota, Utah, and Washington decreased about 16 per cent, from a total of 9,721 in 1929. Generally, the decline in the number of registered public-service jacks was much greater than that in the stallion enrollment. A shortage of young draft stallions is now being felt in many States. The scarcity of good sires is accompanied by a decided shortage of young work mares suitable for breeding purposes. This shortage of suitable young mares and the small number of serviceable old mares discourages the keeping of good stallions in many areas. Even with a strong price incentive to increased breeding, progress would be slow for some years. Lacking this incentive the numbers of suitable breeding stock will continue to decline.

Admittedly, the horse-and-mule outlook may be modified somewhat by the future course of mechanization of agriculture. According to the census, the number of tractors on farms increased 274 per cent from 1920 to 1930, to a total of about 920,000 in the latter year. Truck numbers on farms increased about 547 per cent, to a total of 900,385 in 1930. During the same period the replacement of horses and mules by trucks in towns and cities continued. In 1920 the number of horses and mules on farms was more than ample to furnish all needed motive power on farms. At the beginning of 1932 the number of horses and mules would not have been sufficient to furnish the motive power for the farm operations of that year. The future need for more or less work stock will depend upon whether the use of mechanical power increases or decreases. From a short-time standpoint a decrease in the use of mechanical power seems the more probable. Under existing price conditions farmers are buying less power machinery and finding it difficult to meet out-of-pocket costs for operation and maintenance, but in general they have an abundance of low-priced feed for work animals. Moreover, farm wages, in general, are the lowest in a quarter of a century so that savings in hired-labor costs that may have resulted from the use of mechanical power have been greatly reduced.

Looking further ahead, there is no reason for believing that the use of tractors and trucks for farm work has reached its peak. In fact, some expansion in the use of tractors and trucks may be necessary merely to offset the rapidly decreasing number of work animals, since under the most favorable conditions it will be some time before this decrease can be halted. It is also possible that new developments in the field of mechanical power may be an important factor in setting the limits of any upward movement in the demand for work stock. But until such developments are in evidence, nothing definite can be said about them.

At present, it seems desirable to point out that horses are largely a by-product of farming. Good breeding mares may be used as a source of motive power and at the same time produce colts that will maintain the power plant. Therefore, they may be considered not only as a source of expense but as a source of income. Many farms are well suited for the economical production of a few colts to replace worn-out work animals and to be sold.

As it seems likely that farmers will not be able to replace their present work stock a few years from now at prices now prevailing, many who expect to continue to use animal power can well afford at this time to lay plans for their future supply of work stock. Mares that can work and produce colts form the economical basis for such plans. If the mares are young, the farmer will be in better position to expand colt raising as the demand for colts increases.

DAIRY PRODUCTS

The number of milk cows increased about 3 per cent during 1932, but, because of a lower rate of production per cow, there was no increase over 1931 in total milk production. The number of yearling heifers now on hand is only slightly more than enough to provide the usual percentage of replacements. With the number of cows on farms greater than ever before, and with the supply of feed grains the largest in the last 12 years, there is the possibility of a moderate increase in milk production in 1933.

A higher proportion of the total milk produced in 1932 was utilized on farms than in 1931, primarily because of the low returns from the sale of milk and cream. City consumption of milk and of most manufactured dairy products declined further in 1932.

In the drastic decline of all prices throughout 1932 dairy-products prices suffered relatively less than those of most other farm products, and farm prices of dairy products are still high in relation to the average of other farm-products prices. Storage stocks of dairy products are very low. Foreign supplies of butter are likely to be large in 1933 but no significant import movement is to be expected.

Feed prices are very low in relation to dairy-products prices, the price of cows as slaughter animals is too low to offer a motive for severe culling of dairy herds, and farm income from all sources is so meager as to impel farmers to maintain or possibly to increase their dairy output. The steady increase in milk-cow numbers now in progress, which is likely to continue in 1933 although at a lower rate than in 1932, may be expected gradually to reduce the advantage of dairying as compared with other forms of agriculture.

NUMBER OF MILK COWS AND MILK PRODUCTION

The number of milk cows and heifers 2 years old or older on farms increased from 22,129,000 head on January 1, 1928, to 24,379,000 on January 1, 1932, an increase of 10 per cent during the four years. During 1932 there was a further increase of about 3 per cent. Only about the usual percentage of heifers was added to the herds, but an unusually small proportion of the cows was culled out, culling during 1932 being reduced from the usual average of about 16 per cent of the cows to about 14 per cent. Under ordinary conditions about 4 per cent of the milk cows now on the farms would have been culled out during the last three years, but culling has been retarded in all States by the cheapness of grain, by the ample supply of labor on the farms, and by the low price of cows.

In response to the high price of milk cows before 1930, the number of yearling heifers being kept for milk cows increased from 4,045,000 in January, 1928, to 4,777,000 in January, 1931. The number then declined to 4,665,000 by January, 1932. The present number is probably about the same as on January 1, 1932, or only slightly more than enough to cover the normal per-

centage of culling and death losses. The price of milk cows is so low that most farmers appear to be raising only about the number of heifers they would ordinarily need to maintain the present number of milk cows on their farms. The number of cows being slaughtered and the receipts of cows at stockyards indicate that the rate of culling is still abnormally low. In some parts of the country old milk cows are now worth almost nothing for slaughtering purposes and feed is so cheap that many farmers figure it will pay better to keep the old cows and sell more butterfat and obtain more calves to sell for beef or veal, than it will to sell the extra grain for what it would now bring on present markets.

The price situation has had an effect on milk production quite different from that on milk-cow numbers. Milk production per cow increased about 12 per cent from 1924 to 1929. Production declined from 4,582 pounds per cow in 1929 to about 4,406 pounds in 1931, or about 3 per cent. There was a further drop of about 4 per cent in 1932. There have been some regional variations owing to feed shortages and differences in the pasturage available but, with the possible exception of the Southern States in the first few months of the year, reports from all the larger groups of States show lower production per cow in each month of 1932 than in the corresponding month of 1931. Most of the decrease in 1932 appears to have been due to the necessity for close economy on dairy farms and to the resulting changes in feeding practices. Thus in practically all areas farmers are depending more on home-grown feeds and less on feeds that must be shipped from a distance. As costs for grinding are high in comparison with grain prices many farmers have discontinued having oats and corn ground for their cows. The total quantity of grain and concentrates fed per head averaged 7 per cent less in 1932 than in 1931. The percentage of protein in the grain-and-concentrate ration has been reduced, the ration being fed by dairy correspondents averaging about 13.4 per cent protein on October 1, 1932, compared with 13.8 per cent on April 1, 1932, and 14.2 per cent on October 1, 1931.

Total production of milk was apparently about the same during 1932 and during 1931. In comparison with those of 1931, commercial deliveries of milk and cream have been reduced by the increase in the quantity of milk used on the farms and by an increase in the quantity of butter made on the farms. Most of the increase in farm-made butter is found in areas where there is a surplus of milk above that required for city consumption, or where there is an unusually wide percentage spread between the price that farmers receive for butterfat and the local retail price of butter.

DAIRY FEED

The aggregate feed grain, hay, and feedstuff supplies for 1932-33 are sufficiently large to maintain milk production at the prevailing level and to permit the present rate of expansion of dairy herds. The recent shift from cash crops to feed grains has resulted in the largest feed-grain production since 1920. Available evidence suggests little or no prospective change in the 1933 feed-grain acreage compared with that of 1932, and with average yields, supplies of feed grains for 1933-34 would be large. The combined 1932 harvest of corn, oats, barley, and grain sorghums was 111,500,000 tons compared with 97,500,000 tons in 1930 and 87,180,000 tons in 1929. Larger-than-average consumption of wheat for feed continued into 1932-33.

The 1932 hay crop of 81,788,000 tons, although 10 and 11 per cent larger than the 1930 and 1931 crops, respectively, was 5 per cent less than the average production for the period 1924-1928. Some shortage of hay compared with average production occurred in 1932 in parts of important dairy and cattle-feeding States. Since 1928, numbers of hay-consuming animals on farms have increased. The last three years have been unfavorable years for hay production. More normal weather conditions for hay production should result in ample supplies on the present acreage even with a continuance of the present rate of increase in hay-consuming animals.

Production of by-product feeds during the 1932-33 season will probably be the smallest since 1923-24. Prospective domestic supplies of high-protein feeds for 1932-33 are smaller than those for recent seasons. Supplies of cottonseed cakes and meal available for 1932-33 are materially smaller compared with last season. Linseed-meal production is being restricted by the limited outlet for linseed oil.

MANUFACTURED DAIRY PRODUCTS

The combined factory production of manufactured dairy products during 1932 was about 1 per cent smaller than in 1931. Decreases ranged from a small reduction in creamery butter to a 23 per cent reduction in condensed milk. Evaporated milk showed an increase of about 6 per cent.

During the early part of 1932, butter was the only product produced in larger quantities than a year earlier, and it was not until midsummer that other products showed increases. During the balance of the 1932 season, seasonal production of all manufactured dairy products was more or less irregular in relation to 1931 production, because of the different seasonal and regional conditions.

Heavy surpluses of milk in the so-called fluid-milk areas of the East contributed to increased butter production in those areas during 1932. During most of the year the New England States produced larger quantities than in 1931, and during the latter part of the year there were exceptionally heavy increases over 1931 quantities in the Middle Atlantic States. The North Central States, which are the principal butter sections, naturally influenced the general production trend, although there were some important variations in individual States within this group. During the late summer, Minnesota production was lower in relation to 1931 than was production in Iowa and Wisconsin, but in the fall, when the two latter States showed material decreases, Minnesota butter production was better maintained.

Cheese production in 1932 is estimated to have been approximately 6 per cent below that of 1931. Only during August, September, and December, did 1932 cheese production exceed that of 1931. In Wisconsin, the principal cheese-producing State, 1932 production was almost 9 per cent below that of the previous year. New York State production was approximately 19 per cent below that of 1931. On the other hand, there were increases in the South Central States, the Mountain States, and the Pacific States.

Throughout all the 1932 season of flush production, and since then, evaporated-milk production exceeded that of 1931. Part of this increase may be attributed to the aggressiveness of manufacturers in moving that product into consumption by offering price concessions at numerous times during the year.

STORAGE STOCKS

The storage situation of dairy products as a whole was generally strong throughout 1932, as compared with that of 1931. Stocks of butter in cold storage on January 1, 1932, were the lowest on record for that date and stocks of all manufactured dairy products were lighter than on January 1, 1931. In terms of milk equivalents, the reduction under stocks on January 1, 1931, amounted to 38 per cent. At the beginning of the new storing season on May 1, a somewhat similar situation prevailed, with total stocks of manufactured dairy products, on a milk-equivalent basis, 26 per cent lower than on May 1, 1931.

Slowing up of consumption during the summer, and some increase in production during August, caused cold-storage stocks of butter and manufacturers' stocks of evaporated milk to reach totals by September 1, 1932, in excess of those of a year earlier. By December 1, however, stocks of manufactured dairy products, in terms of milk equivalent, were approximately 10 per cent below those of December 1, 1931, primarily on account of unusually heavy movements into channels of apparent consumption during November, accompanied by heavy decreases in current production of all products except evaporated milk.

Stocks of creamery butter on January 1, 1933, reached a new low record for that date, totaling 22,044,000 pounds, compared with 26,643,000 pounds on January 1, 1932, and a January 1, 5-year average of 52,410,000 pounds. Stocks of American cheese on January 1, 1933, totaled 57,750,000 pounds compared with 60,804,000 pounds on January 1, 1932, and a 5-year average of 63,685,000 pounds. Stocks of canned milk on January 1 were 119,596,000 pounds as compared with 152,447,000 pounds on January 1, 1932. Total stocks on January 1, 1933, of butter, cheese, and canned milk, combined on a milk-equivalent basis, were 16 per cent lower than those of a year earlier.

MARKET CONDITIONS

The decline in wholesale prices of dairy products, which started in the latter part of 1929, continued in 1932. A low point was reached in June with some recovery during the last half of the year. The general decline in dairy-product prices during the 3-year period was influenced by the deflation in commodity prices generally, rather than by any marked change in the output of dairy products.

As in the preceding two years, farm prices of dairy products did not decline during 1932 so much as did farm prices generally. Farm prices of all products in 1932 averaged 29 per cent lower than in 1931, while farm prices of dairy products averaged 25 per cent lower. Prices received by farmers for feed grains in 1932 were 38 per cent lower than in 1931. Prices of dairy products, although unusually low, declined less than farm prices generally, and materially less than feed grain prices.

From 1929 through 1932, prices of various dairy products did not decline at the same rate, prices of manufactured products having declined more than prices of milk used for city distribution. In 1932, however, prices of milk purchased for city use declined steadily, while prices of manufactured products during the last half of the year showed some increase, and farm prices of dairy products showed practically no change.

With the general deflation in prices, farm prices of grain declined farther than the prices of dairy products. There has been considerable variation in the rates of decline in various sections, and unusual geographic differences in price relationships of these products have occurred. Prices of grains and dairy products declined most in surplus-producing sections farthest from market. The price of butterfat in relation to grains in the North Central States during the fall and early winter of 1932-33 was unusually high, whereas in the North Atlantic States it was less favorable than a year earlier. Retail prices of all foods (11 months) averaged 16 per cent lower during 1932 than for the same period of 1931. Retail prices of dairy products in this period declined by the same amount, milk averaging 12 per cent lower, butter 23 per cent lower, and cheese 18 per cent lower.

The estimated consumption of creamery butter, cheese, and condensed and evaporated milk during 1932, converted to a milk-equivalent basis, was about 3 per cent less than during 1931. The consumption of creamery butter declined 2 per cent, that of cheese 5 per cent, and that of condensed milk 26 per cent, while the consumption of evaporated milk increased 4 per cent. Evaporated-milk consumption was stimulated during part of 1932 by the unusually low prices at which this product was offered, and probably to some extent by the curtailed consumption of fresh milk. Receipts of fluid milk and cream at principal cities declined farther in 1932, and at New York, Philadelphia, and Boston were 4 per cent less than in 1931. Oleomargarine production during 1932 was 11 per cent less than during 1931.

FOREIGN TRADE

The volume of foreign trade in dairy products in terms of their total milk equivalent continued to decline in 1932. During the calendar year imports amounted to approximately 594,000,000 pounds (milk equivalent) against 684,000,000 pounds in 1931, and exports dropped to 189,000,000 pounds from 322,000,000 pounds. The excess of imports over exports amounting to 405,000,000 pounds, was somewhat greater than in 1931, representing the first increase since 1927.

Domestic prices of butter were paralleled by outside prices rather more closely than usual during 1932, the domestic butter market remaining free from any serious disturbance from foreign competition in the form of either imports or an exportable surplus. From January through October, Copenhagen prices averaged monthly from 3 to 7 cents under New York's, and reached a 10-cent margin for December when the spread is normally widest. Comparing December prices with those of December, 1931, the price of 92-score butter in New York had declined 21 per cent, while Copenhagen quotations had declined 20 per cent in Danish currency and 27 per cent in United States currency when converted at prevailing exchange rates. New Zealand butter has declined more in price than Danish on the London market, and the margin between 92-score butter at New York and finest New Zealand butter at London reached a maximum in late November of 13 cents, or 1 cent less than the import duty.

Developments affecting the distribution of butter in foreign countries have been fully as important in their influence upon price as have those affecting total world supply.

The total surplus of the 12 most important butter-exporting countries declined practically 10 per cent between the first nine months of 1931 and the first nine months of 1932. Imports into Great Britain, however, continued through 1932 to increase in actual volume as well as in proportion to total world trade.

Restrictions upon importation of butter, in the form of tariffs and contingents or quotas, were widespread in continental European countries, resulting during the last two years in continued abnormal concentration of world supplies in British markets. In 1930 Germany, Belgium, France, Switzerland, and Italy had taken 31 per cent of the combined net imports of butter into these countries and Great Britain. In 1931 they took 27 per cent, and in nine months of 1932, only 20 per cent.

Even under these conditions prices of butter have not, thus far, moved far out of line with the general price level in Great Britain. The Board of Trade index of wholesale prices adjusted to a base of 1928 as 100 stood at 63 as the average for 11 months of 1932, with London prices of Danish butter at 64 and of New Zealand butter at 62. A marked increase in consumption of butter in Great Britain has occurred in response to the low prices, particularly during 1931 and 1932.

Price margins as between London and New York, however, will tend to be wider under given conditions of world supply by as much as that supply is restricted to British markets.

In Great Britain import restrictions on butter have thus far taken the form of tariff protection only, and apply only to supplies from non-empire sources, in keeping with the policy of stimulating dairying in the Dominions.

In both New Zealand and Australia, dairy production continues to increase steadily and is now at the peak of a season of record output in each country. Australian gradings from the beginning of the seasonal year, August 1 to December 10, have increased over the corresponding period of the previous record season by 36 per cent. In New Zealand, over the same period, butter production has increased 20 per cent.

In Australia and New Zealand, which together are supplying a rapidly increasing percentage of the total butter imports of Great Britain (43 per cent in 1932), production is being stimulated by recent trade developments, whereas indications are that European production has been checked.

REGIONAL READJUSTMENTS

All regions of the United States shared in the increase in the number of milk cows on farms in 1932. Prices of feeds and feed grains throughout the country continue low in comparison with prices of dairy products, and encourage further dairy production. On the basis of farm prices in every region except the West, a pound of butterfat would buy more feed grain in 1932 than at any other time during the last five years. However, the actual number of pounds of feed grains purchasable with a pound of butterfat varied widely. It ranged from 23 in the South Atlantic States to 38 in the West North Central States. In the Northeastern States it was 27.

In the Northeastern States the number of cows has continued to increase at about the rate that has obtained during the last two or three years. There has been a continued decline in the rate of production per cow so that this increase in the number of cows has not increased total production. At the same time, there has been a further decline in the rate of feeding, particularly of concentrated feeds. During 1932, prices of fluid milk in most of the cities have continued to be adjusted downward. The rate of reduction has been far from uniform, and the relation between feed costs and receipts from the resulting production, when sold for city milk trade, varies greatly.

Retail prices of fluid milk in most of this area are still adequate to encourage feeding, and as a result, an increasing number of dairymen are retailing their milk. On the other hand, the price of surplus milk is so low that its production is often unprofitable. The supply of farm labor in the Northeastern States has been increasing and will probably increase still further as a result of industrial depression. This is probably an important factor in maintaining the volume of dairy output.

Dairying in the Middle West is of two distinct types, the first in the more highly specialized dairy areas where the product is disposed of partly as fluid

milk and partly through a highly developed system of local creameries and other manufacturing plants. These areas are for the most part characterized by land and climatic conditions that make dairying unquestionably the most important source of income. In general, such areas have fairly good cows and an abundant feed supply. The producers here are maintaining their rate of feeding at a higher relative level than in the New England States. The other type of middle-western dairying is found in those areas in which meat animals and cash grain are normally more important than milk. In these areas dairying is closely connected with beef-cattle production. The tendency has been to use cows of predominantly beef type and consequently of low milk production. With prices of other products extremely low there continues to be strong motive to increase the number of cows milked and to secure as large an income as possible from the dairy enterprise. There seems to be nothing in the immediate outlook to change this situation.

In practically all of the Cotton Belt States numbers of milk cows have been increasing steadily since 1929. In these States there has also been an increase in the acreage of feed crops, the shift being due largely to the low price of cotton and to farmers' need to obtain a larger share of their food from their farms. This need still continues. In most of the area commercial dairying is largely dependent on the local demand for milk and cream. This demand has been increasing rapidly, but is probably not expanding at present. In the surplus-grain section of Texas and Oklahoma, and in the limited areas that have good pasture lands in the other States, there has been some expansion of dairying for manufacturing purposes. Further expansion is largely dependent upon relative returns from cotton and beef cattle.

The increased production of dairy products in the Western States in the post-war period has been consumed primarily in the local markets. With transportation charges high in relation to prices of dairy products, this situation will probably continue. In many western fluid-milk areas the decline in prices of milk has resulted in less concentrates being fed and in lower milk production per cow.

The total output of the American dairy industry remains approximately in balance with the domestic consumption. Expansion beyond this results in disastrously low prices because of the noneffectiveness of tariff protection when production outruns domestic demand. With the domestic demand curtailed by the lowered urban purchasing power, any material expansion will be checked by considerable reduction of prices, until unemployment is reduced and consumer purchasing power is improved. During the last five years there has been a substantial increase in the number of cows, induced partly by the attempt to supplement income from other sources, partly by the cheapness of grains, and partly by the slackening of sale of cows because of the extremely low prices paid for them. Total milk production in 1932 was no greater than in 1931, but the increase in numbers of cows still gives a potential productive capacity above that of recent years in spite of the fact that some of these cows would have been culled in a normal year. It is not probable, however, that such expansion will be realized to any alarming degree under present price conditions. On the other hand, there seems no reason to believe that the dairy industry has reached a turning point and is about to contract. Production is likely to be sustained or even slightly increased in 1933 over that of 1932. The culling out of low producers and the consequent raising of the quality of cows seems to await the stimulus of better prices. But a more liberal feeding of dairy cows is entirely possible in view of the supply and price of feeds. The trend of all cattle numbers is now upward and may be expected to continue so for several years. The number of milk cows is likely to move upward with the upward trend in the supply of all cattle.

POULTRY AND EGGS

Chicken and egg production is expected to be somewhat larger in 1933 than in 1932. With poultry feeds much cheaper in the fall and early winter months of 1932 than in the previous year and with egg prices about as high, and even higher in December, the returns from egg production were encouraging to producers. The number of layers in farm flocks on January 1, 1933, was slightly larger than a year earlier and it is probable that the number of chickens hatched this year will be larger. More hens on farms and heavier spring hatchings may be expected to result in increased marketings of poultry this year.

Weather up to midwinter was less favorable for egg production than it was a year earlier, and the rate of production per hen was considerably lower than

the very heavy production of the fall and winter months of 1931-32, although not far below that of the 5-year average. It is unlikely that the eggs laid in February and March will exceed the large number laid in those months last year unless the unseasonably mild weather prevailing in January should continue. Storage stocks of eggs on January 1, 1933, were practically exhausted and will not be a factor in the egg market after January. Eggs stored in 1932 were sold at a profit and some increase in the stocks of eggs stored this year is expected. The relatively high prices received for eggs during the last half of 1932 are likely to encourage increased hatchings requiring larger quantities of eggs in 1933. It is doubtful, however, to what extent the probable increase in hatching and in the storing of eggs will offset the effect of the probable moderate increase in production. Fresh eggs marketed after the season of heavy laying, and particularly during the coming fall and winter, will face the competition of a larger stock of storage eggs than last year's, although these stocks will probably be much smaller than average.

HENS IN FARM FLOCKS

The reported number of hens and pullets of laying age in farm flocks was between 2 and 3 per cent greater on January 1 this year than on January 1, 1932, but about 3 per cent smaller than the January number in 1931, or the 5-year average, 1927-1931.

The increase in layers in the North Central States, which produce about half the eggs, was small—between 1 and 2 per cent. The North Atlantic and the Southern States showed increases of between 4 and 5 per cent and the far Western States showed a decrease in farm flocks of about 4 per cent. Notwithstanding the extremely low price of eggs in the early part of 1932, the abundance and cheapness of feed coupled with the more-than-seasonal rise in prices for eggs apparently encouraged farmers to retain slightly larger numbers of layers. This tendency was furthered by the low prices paid for poultry. The heavy snows of December interfered somewhat with marketings of chickens and the reports of numbers on farms February 1 should furnish a more positive indication of the number of layers this year compared with last.

COMMERCIAL HATCHINGS

Production of chicks by commercial hatcheries from January to July, 1932, inclusive, was slightly greater than for the same period in 1931. In general, the hatchings were somewhat later than in 1931, which, in turn, were slightly later than those of 1930.

Commercial hatchings during the 1932 season decreased sharply in the Mountain and Pacific Coast States, by about 25 per cent for the Mountain States and 15 per cent for the Pacific Coast States. Hatchings increased slightly in the Middle West and in the South, and to a somewhat greater extent in the Atlantic Coast States. The decrease in hatchings in the commercial egg-producing areas of the Far West, following a similar decrease in 1931, indicates a probable further decline in shipments of eggs to eastern markets from that area during the present laying season as compared with last year.

Reports received from commercial hatcheries in States east of the Mississippi River indicate that the late fall and early winter hatches of chicks for winter broiler production will not be so large this year as a year ago.

CHICKEN PRODUCTION IN 1932

The number of young chickens of the 1932 hatch in farm flocks on October 1, 1932, was 5.5 per cent greater than on that date in 1931. April and May numbers were no greater than those of 1931. The increases over 1931 numbers, amounting to 4 per cent on June 1, 7.5 per cent on July 1, and 5.5 per cent on October 1, probably reflect larger late hatchings in 1932. In the North Central States, which ordinarily furnish from two-thirds to three-fourths of the poultry shipped to Boston, New York, Philadelphia, and Chicago, the number of young birds on farms on October 1, 1932, was 6 per cent greater than in 1931, and practically all of this increase occurred in the States of this group west of the Mississippi River. The North Atlantic States showed an increase of 20 per cent, the South Atlantic only 2 per cent, and the South Central 5 per cent. The far western States as a whole showed about the same number of young birds in farm flocks as in 1931. The number of young

chickens in commercial flocks in the far West is thought to be considerably smaller than in 1931, but returns from commercial flocks are too few for an accurate estimate. Although egg prices were at record low levels in the spring of 1932, the subsequent improvement in prices and their well-maintained levels during the fall and early winter in the face of generally unfavorable farm prices will tend to a further increase in the number of chickens hatched this year. The very sharp decline in prices of eggs in January was less encouraging, and low prices, if continued, may tend to limit the expected increase in numbers of chickens to be raised. However, the record low prices during the early months of 1932 failed to prevent a gain in numbers raised last year.

EGG PRODUCTION

Because of the smaller number of hens in 1932, as well as the smaller number of eggs laid per hen, the production per farm flock (which reflects total farm production of eggs) was about 5 per cent less in 1932 than in 1931 and about 4 per cent less than the 5-year average for 1927-1931. The greatest decrease in production, 7 per cent, was reported for the North Central States. The South Central States reported about 3 per cent and the South Atlantic about 1 per cent decline. In the far Western States farm-flock production showed a decline of about 4 per cent, but the decrease in production by commercial flocks there was apparently much greater. In the North Atlantic States farm production was about the same as in 1931, with production by commercial flocks apparently greater. For the three months ended January 1, 1933, layings per hen were 20 per cent smaller than the very heavy layings of the same months a year earlier, although they were close to the 5-year average for these months. With the number of layers this year apparently somewhat greater, and with the abundance and very low prices of feeds, it is to be expected that production of eggs this year will exceed that of last year, at least for the period after March when the rate of laying per hen last year was about equal to the 5-year average prior to 1931. Total egg production in 1933 will be less, however, than the average production of the five years 1927-1931, unless the number of eggs laid per hen should approach the high number laid in 1931. It is impossible to say to what extent increases in the numbers of those persons keeping chickens on farms and elsewhere due to the economic distress of the last two or three years, will be offset by the increased consumption of poultry products by these producers. The movement will undoubtedly add to the supply of eggs for local consumption.

PRICES OF POULTRY AND EGGS

Fall prices of poultry products in 1932, although the lowest in the 23-year record, were not so low as those of most other agricultural commodities when compared with prices before the World War. Likewise, when compared with the average fall prices in more recent years, poultry and egg prices showed relatively less decline. The average price of eggs for October, November, and December, was 39 per cent below the average for the same three months during the five years, 1925-1929. On the same basis the farm price of chickens was lower by 50 per cent, prices of dairy products by 52 per cent, prices of meat animals by 61 per cent, and grain prices by 72 per cent. The greater declines in prices of grains as poultry feeds were especially favorable to poultry and egg production.

Farm prices of eggs rose from 10.6 cents per dozen in June to 28.1 cents in December, an advance of 17.5 cents, or 165 per cent. The usual seasonal increase in egg prices from June to December, on the basis of prices during the last 23 years, has been about 95 per cent. The unusually low prices for eggs in the spring of 1932 and the greater-than-usual increase in egg prices during the rest of the year were due mainly to the exceptionally small supply of shell eggs placed in storage.

Farm prices of chickens declined from 11.4 cents per pound in June to 9.2 cents in December, a decline of 19 per cent. The usual seasonal decline in chicken prices from June to December, on the basis of prices during the last 23 years, was about 12 per cent. This unusual decline was influenced by the very heavy marketings of turkeys in the last three months in 1932.

The average monthly price at New York City of mid-western fresh eggs grading "rehandled receipts" (formerly "Fresh Firsts") for October, November, and December, was 28.7 cents per dozen as compared with an average of

44.2 cents for the five years 1925-1929, or a decline of 35 per cent. The average price of dressed fowl at New York City for the same three months was 16.6 cents per pound or a decline of 39 per cent. By the same comparison, the price of roasting chickens in the fall of 1932 averaged 17.2 cents, a decline of 46 per cent.

POULTRY RECEIPTS

Receipts of dressed poultry of all kinds at the four markets were 355,454,000 pounds in 1932 as compared with the heavy receipts of 386,361,000 pounds during 1931 when there was some reduction in size of farm flocks. Since the average of annual receipts of dressed poultry at these four markets for the five years 1927-1931, was 364,141,000 pounds the 1932 arrivals do not appear significantly low. Receipts of dressed poultry in the fall of 1932 exceeded those of 1931, probably owing to the larger hatchings of 1932 and to the increase in the volume of the 1932 turkey marketings. The relatively favorable price for eggs and the low prices for chickens probably retarded the movement of dressed fowl (hens) during the last half of the year. Receipts of fowl between August and December at about 200 feeding and dressing plants in the Mississippi Valley were 9 per cent less in 1932 than in the same period in 1931, whereas receipts of young chickens showed an increase of 18 per cent.

Live-poultry receipts at New York and Chicago in 1932 as compared with live poultry receipts in 1931 were lower by about 6 per cent, while compared with 1930 the decrease was about 11 per cent.

POULTRY IN STORAGE

The stock of poultry in cold storage on September 1, 1932, was 30,305,000 pounds, the smallest in any month since 1922. On January 1, 1933, the stock was 111,638,000 pounds, as compared with 116,700,000 pounds on the same date in 1932 and a 5-year average of 117,902,000 pounds. The increase in storage stocks from September 1, 1932, to the end of the year, was 81,333,000 pounds as compared with 73,644,000 pounds during the same period in 1931 and a 5-year average increase of 74,879,000 pounds. The increase in storage stocks of dressed poultry during the fall was larger, but because of the small stocks on hand on September 1, the holdings on January 1, 1933, were less than those on January 1, 1932, or the 5-year average. An important factor in the increase was the stock of turkeys which on January 1, 1933, was 14,566,000 pounds. Stocks of poultry other than turkeys amounted to only 97,072,000 pounds as compared with 106,330,000 pounds on January 1, 1932, and a 5-year average of 108,997,000 pounds.

The consumption of dressed poultry in the four markets during 1932 was not greatly different from consumption during 1931, the apparent trade output for these cities being about 3 per cent less in 1932. Prices were much lower than in 1931 or in any of the last several years; they were particularly low during the latter part of the year. The large turkey crop produced in 1932 and the very low prices that prevailed during November and December resulted in exceptionally heavy consumption of turkeys during these months, and tended to offset to a certain extent the smaller consumption of other classes of poultry.

EGG RECEIPTS

Receipts of eggs at the four markets were 13,050,000 cases in 1932 as compared with 15,281,000 cases in 1931 and an average of 15,293,000 cases for the five years 1927-1931. Throughout the first nine months of the year receipts were consistently below those of the previous year but, with an improved market price situation, receipts in October and November exceeded those in the same months in 1931. The increase in receipts at the four markets in the fall of 1932 can not be explained by the movement of eggs to those markets from interior storages, which was smaller than usual, but was probably due to producers' curtailing farm consumption as a result of improved market prices. Total egg receipts for the year, as compared with those of the previous year, were smaller from all geographic divisions except the South Atlantic and the South Central States, from which marketings are relatively unimportant. The greatest decrease in receipts was from the Mountain States where the decline was over 30 per cent, while receipts from the Pacific States declined 19 per cent, and from the Middle Atlantic States 18 per cent.

The consumption of eggs in the four markets was about 11 per cent less in 1932 than in 1931, judged by the apparent trade output. Receipts of eggs at these points was about 15 per cent less, but owing to the large carry-over of storage stocks from the preceding year the total supply available for consumption during 1932 was slightly greater than the receipts for the calendar year. There was practically no carry-over of stocks into the 1933 season. On a monthly comparison basis, consumption during 1932 was consistently lower than in 1931, except in March and April, when prices were much lower than in the same months of the preceding year and trade output showed some expansion. Rising prices in October, November, and December, together with the lessened supply available for consumption, caused a marked decline in the trade output for those months.

EGGS IN STORAGE

Stocks of shell eggs placed in cold storage during the spring and early summer of 1932 were unusually small. On August 1, they amounted to only 6,431,000 cases as compared with 9,504,000 cases for the same date in 1931, a reduction of about 32 per cent. They were 37 per cent below the August 1 cold-storage holdings of 10,181,000 cases for the years 1927-1931. From August 1, 1932, to January 1, 1933, the stocks of shell eggs in cold storage were reduced 6,272,000 cases as compared with 8,029,000 cases a year previous, but remaining stocks of 159,000 cases on January 1, 1933, were the smallest stock on record for that date since these reports were first gathered in 1915.

Frozen-egg stocks in storage on August 1, 1932, were equivalent to 2,832,000 cases of shell eggs, a reduction of about 13 per cent from the August 1 holdings of 1931 and an increase of 2 per cent above the average August 1 stock for the five years 1927-1931. The reduction in frozen-egg stocks between August 1, 1932, and January 1, 1933, was equivalent to 1,251,000 cases as compared with 1,014,000 cases in 1931 and a five-year average of 951,000 cases, indicating a heavier use of frozen eggs in 1932. January 1 stocks of combined shell and frozen eggs were equivalent to 1,740,000 cases of shell eggs, compared with 3,738,000 cases on January 1, 1932, and a five-year January 1 average of 3,098,000 cases.

TURKEYS

The production of turkeys is likely to be somewhat less in 1933 than in 1932 because of the low prices received for the large 1932 crop. The decrease will probably be most pronounced in flocks of very large commercial growers, but inasmuch as these flocks include only a small proportion of the total production, some curtailment in their number and size would not cause a relatively large decrease in the total number of turkeys produced. Turkey prices have declined, but the production cost also has been less, because of more efficient methods of production and cheaper foods. The total production of turkeys will continue to be largely determined by growers with flocks of moderate size whose intentions in 1933 will depend on their experience and their ability to produce turkeys at a low cost.

The 1930 census showed that 16,794,000 turkeys were raised in 1929, a number estimated at about 9 per cent more than the 1928 crop. The 1930 crop was estimated as 3 per cent smaller than that of 1929, and the 1931 crop about 2 per cent greater than that of 1930. The 1931 price relationship between turkeys and most agricultural commodities was favorable to turkey producers. These favorable price relationships were mainly responsible for the fact that the 1932 crop was the largest on record and probably exceeded 19,000,000 birds. The increase in numbers of turkeys, together with reduced consumer purchasing power in 1932, forced turkey prices down to the lowest level in the last 20 years. The average farm price of turkeys declined throughout the fall from 13.2 cents per pound on October 15 to 10.9 cents in mid-December.

During the years 1925-1929 the December farm price of turkeys averaged 10.2 cents above the farm price of chickens, but this spread has gradually been reduced until in 1932 it was 1.7 cents. At New York city, prices quoted on comparable grades of chickens and turkeys for the last half of December were about the same. The average of farm prices of turkeys for October, November, and December in 1932 was 57 per cent below its average for the same three months during the five years 1925-1929. By the same comparisons, the farm price of chickens had declined 50 per cent and the farm price of eggs 39 per cent, while the farm price of grains for the same fall period declined 72 per cent. Turkey prices had declined more than chicken and egg prices but less than those

of feed grains. These price changes indicate that a shift from turkey production to that of chickens and eggs may be expected in those areas in which the two enterprises are competitive but such a shift is not likely to be pronounced in areas particularly favorable to turkey production.

Relatively high prices for turkeys in 1930 and 1931 as compared with prices for other agricultural commodities greatly stimulated the production of turkeys in flocks of several thousand birds but commercial production in large flocks in 1933 will probably be less as a result of the low prices of 1932. The size of farm flocks may be less responsive to the 1932 price declines than that of the large commercial flocks, because part of the feed and care of farm flocks represents no apparent expense. Available data indicate that at prices current during the fall of 1932, producers of the smaller farm flocks received sufficient cash income to more than cover visible outlay, and it is doubtful whether the efficient farm-flock producer will materially curtail his turkey production operations in 1933.

Imports of turkeys into the United States were drastically reduced in 1932 principally because of the low prices prevailing and the 10 cents per pound tariff on dressed turkeys. From January to November, 1932, inclusive, imports of dressed turkeys, mostly from Argentina, amounted to only 474,000 pounds as compared with 5,044,000 pounds in 1931.

The quantity of turkeys in cold storage on January 1, 1933 was 14,566,000 pounds compared with 10,320,000 pounds on the same date in 1932 and with the January, 1927-1931, average of 8,905,000 pounds. The large supply of cold-storage turkeys on January 1, this year, is less burdensome than might appear because of the tendency in recent years toward increased family consumption of turkeys beyond the holiday season and the probability of very slight competition from imports of turkeys. On November 1, 1932, the cold-storage stocks were at a very low level, amounting to but 1,033,000 pounds, but the heavy carry-over of turkeys from Thanksgiving resulted in a net into-storage movement during November of 10,964,000 pounds, the heaviest accumulation on record for any single month and about 309 per cent above the 5-year average. During December, turkey prices were lower than those of November and supplies received for the Christmas and New Years markets were cleaned up much better than at Thanksgiving. The net into-storage movement in December amounted to only 2,569,000 pounds as compared with a December 5-year average of 3,389,000 pounds. The low farm price of turkeys during December may have caused growers to hold back more turkeys than usual so that marketings during January and February may exceed those of previous years.

HAY AND PASTURE

Farmers, particularly those in normally deficit feed-producing areas, are increasing the acreage of hay and pasture because of the unusually low price level of cultivated crops. The large reduction of hay acreage in the North Central States will probably be largely replaced in 1933 and 1934 from seedings in 1932 and 1933. Consequently, favorable weather for hay production in 1933 would result in a material increase in the total hay crop. The relatively high prices of hay to consumers (largely caused by transportation costs), compared with prices of other feeds, and the reduced purchasing power of farmers, have greatly restricted the market outlet for hay, and the prospective increase in tame-hay production will tend to restrict the outlet still further.

The 1932 hay crop was the third successive short crop for the country as a whole. The production, 69,609,000 tons of tame hay and 12,179,000 tons of wild hay, a total of 81,788,000 tons, was larger than in 1930 and 1931 by 10 per cent and 11 per cent, respectively, but was 4 per cent less than the average production for the 5-year period, 1925-1929. As the farm stocks of hay from the 1931 crop on May 1 were about 2,400,000 tons less than average, this was equivalent to an additional 3 per cent reduction in hay supplies.

The decreased production of hay in 1932 was largely in clover and timothy, the acreage of which, reduced by drought in 1930 and 1931, had not yet been replaced by productive acreage. Only 23,487,000 acres of clover and timothy were cut in 1932, about 24 per cent less than the acreage cut during the 5-year period, 1925-1929. Most of this reduction in acreage was in the North Central States. Alfalfa acreage, on the other hand, has continued its gradual upward trend, and the 12,507,000 acres cut in 1932 was 16 per cent more than the average

of 1925-1929. Sweetclover hay was cut from 701,000 acres or about the same acreage cut in each of the two preceding years. The 5,093,000 acres of annual legumes cut in 1932 was more than 50 per cent above average. A large acreage of grain was cut for hay in 1932. The production of Sudan grass, millet, and other miscellaneous hays was less than average. The 14,298,000 acres of wild hay cut in 1932 was the largest acreage since 1927, and was nearly 4 per cent above the 1925-1929 average.

The greatest decline in production of hay in 1932, compared with the 1925-1929 average, occurred in such important dairy sections as the North Atlantic States and Wisconsin and in the important livestock-feeding States of Ohio, Illinois, Missouri, South Dakota, Kansas, and Colorado. On the other hand, production was greater than average in many of the Southern States which normally ship in hay, and in the Intermountain and Pacific Coast States, except in certain relatively small localities. The larger production in the Western States, however, was offset to a considerable extent by the small carry over from the 1931 crop in these States.

Hay prices have declined much less than the prices of most other feeds during the last three years. This fact, together with the sharp drop in farmers' purchasing power, has resulted in the substitution of home-grown grains and other forage and, in some instances, of commercial feedstuffs, for market hay. The production of alfalfa meal has shown a marked decline and is not likely to increase so long as prices for alfalfa hay remain relatively higher than prices of bran and other commercial feedstuffs. Although the market movement of hay this season has been unusually light, high-grade hay has moved readily at normal premiums. The substitution of medium for high-grade hay has been greater than usual because of the difference in price. The market for low-grade hay has been extremely limited.

The cost of transportation has become such a large factor in the price of hay moved over long distances that new areas of market-hay production have developed nearer to the deficit hay-producing areas. During the last two years there has been a marked expansion of the alfalfa acreage in the Mississippi Delta and a large portion of the southern market for hay is now being supplied from that area. A larger proportion of the hay shipped into New England is coming from Ohio and Michigan and other near-by States. The sharp decline in the incomes of farmers in normally deficit hay-producing areas has caused those farmers to increase their production of hay and other home-grown feeds and has curtailed the movement of hay from surplus-producing areas. All of these changes are reducing the outlet for hay from the Western States which normally grow a surplus for market.

The total hay requirements of livestock have decreased since 1918 when the total number of hay and pasture-consuming animals (horses, cattle, and sheep, calculated on the basis of hay consumption) on farms in the United States reached its highest point. From 1918 to 1928 the number of such animals on farms declined approximately 20 per cent. The decline in the number of hay and pasture-consuming animals in towns and cities during this same period was even more marked. The hay requirements of all livestock in the United States in 1928 were smaller than at any other time in the twentieth century. The acreage of hay has shown a moderate decline since 1918, but the substitution of tame hay for wild hay, and the increased proportion of alfalfa and other higher-yielding kinds of hay have partly offset the decline in acreage.

Since 1928 there has been some increase in the number of hay-consuming animals on farms. Hay production in three of the last four years has been below average but with more nearly normal weather conditions hay production on the present acreage would result in average supplies of hay for the livestock now on farms. Although livestock numbers are expanding, the increase will depend largely upon the increase in cattle numbers, as sheep numbers are already at a high level and numbers of horses and mules will probably continue to decline for several years. However, a larger number of livestock on farms is not likely to offer much additional outlet for producers of market hay, as hay production is also expected to increase, especially in the principal feeding areas and in areas in which hay is usually purchased.

Under present conditions, farmers are coming to recognize the desirability of reducing their operating expenses by maintaining a larger proportion of their land in grass and legumes, especially for pasture. Experiments in several areas have shown that the net returns from lands in grass or legumes, are greater than those from lands devoted to harvested crops. This, together with the un-

usually low level of prices of farm products at present, is encouraging the seeding down of additional lands, especially in areas in which there is a shortage of hay or pasture.

FEED CROPS AND LIVESTOCK

The feeding situation for the 1932-33 season is characterized by large supplies of home-grown feed grains, slightly below average supplies of hay, extremely low prices for feed crops, and no acute shortage of feed in any large area. The numbers of livestock on feed this winter are below average, and hogs and cattle now being marketed are being fed to heavier-than-average weights. Dairymen are depending largely upon home-grown grains and are buying less high-protein feeds to balance the rations. The acreage of feed crops has increased rapidly during the last three years and is expected to continue large in 1933, with perhaps some shifting of acreage from feed-grain production to hay and pasture.

With freight rates and handling charges high, feed costs in deficit feed-producing areas are disproportionately high compared with the cost of feed grains in surplus-grain areas. In some deficit-producing areas returns from feed crops are relatively more favorable than are returns from other crops. Consequently, farmers in these areas are increasing both feed and livestock production to more nearly meet their own needs, while farmers in the surplus areas are increasing livestock production in order to use the surplus feed available, and are seeding some crop land to hay and pasture. Although prices for practically all agricultural products at the end of 1932 were below those of a year earlier, prices of meat animals as a group and of livestock products were still relatively higher than the prices of both feed crops and cash crops. Feed-grain and livestock production will probably continue at a high level until the demand for cash crops shows some improvement or until prices of livestock and livestock products become low in relation to cash crops. The low level of farm incomes and the proportionately high transportation costs will also tend to maintain a high level of feed-grain production in deficit feed-producing areas.

Market prices of feed grains at the central markets are now so low that they do not equal transportation and handling charges from the more distant surplus-producing areas. The only alternatives for farmers in these areas are to feed the grain to livestock or to hold it until prices rise above marketing costs. Prices of breeding stock have also declined until there is no market for the lower grades in many areas. This has resulted in farmers' retaining on farms many cows and ewes that ordinarily would have gone to market and has tended to stimulate livestock production.

Since July the corn-hog ratio has been much above average. The fall pig crop of 1932 was 4 per cent larger than the large crop of 1931 and farmers indicated in the December pig survey that the number of sows to be bred for farrowing in the spring of 1933 was 2 per cent larger than the number farrowing in the spring of 1932. But in the West North Central States, where the corn-hog ratio was most favorable to hog production, farmers reported that the number of sows bred to farrow next spring was 1 per cent less than a year earlier, which may be in response to the unusually low level of hog prices in this area during the breeding season.

Although prospects for the sale of feed grains in the domestic markets are less favorable than they were a year ago, exports of corn during the 1932-33 season will probably be larger than during either 1930-31 or 1931-32. In addition to the limited demand for feed in deficit areas, the industrial consumption in the United States so far this season has been somewhat below that of last year and considerably below average. Exports of corn during the last four months of 1932 were larger than during any corresponding period since 1928. Unusually small quantities of corn are available for export from Argentina at present, because of the relatively small crop in 1932 and heavy exports to date. Furthermore, only limited quantities appear available for export from the Danube Basin, at least during the winter months. Consequently the prospects of exporting corn from the United States may continue fairly favorable at least until the new Argentine crop becomes available for export in April or May. No estimates on corn production in Argentina for 1932-33 are yet available. The acreage planted is believed to be large, but damage by locusts is expected to curtail yields.

In spite of the larger exports of feed grains this year, however, the export market from the United States has been curtailed by tariff and other trade

restrictions in many countries. Since June, 1931, there has been a tariff of 25 cents per bushel on corn imported into Canada from outside the British Empire. This tariff has restricted the exports of United States corn to Canada, the largest importer of corn from this country. The Ottawa Agreements have placed a duty of 10 per cent on feed grains imported into the British Empire. This same tariff also applies to barley imports into the United Kingdom. The tariff on barley, together with the decreased consumption of beer in England, has restricted the importation of both malting and feed barley. Several European countries which are largely dependent upon foreign supplies of feed grains and which in some years have absorbed fairly large quantities of United States feed grain, also have imposed high tariff duties or have otherwise limited imports.

Livestock numbers on farms have been increasing since 1928 in spite of the smaller pig crop in the spring of 1932. The December pig survey for the entire United States indicated an increase of about 2 per cent in sows bred to farrow in the spring of 1933 compared with the number farrowed in 1932, with the increase in the East North Central and Southern States more than offsetting decreases elsewhere. Numbers of both beef and milk cows are increasing and the number of chickens on farms will probably be increased in 1933. Numbers of horses and mules are decreasing, and sheep numbers on January 1 were somewhat below those of a year earlier. These trends in livestock production indicate that the number of livestock to be fed from crops produced in 1933 will be larger than the number now being fed from the 1932 crop.

The quantity of feed available per animal in the 1932-33 feeding season is just slightly larger than the large supplies in 1928-29 and the largest for any year since 1925-26. This is partly offset, however, by less than average quantities of hay per animal. Although hay supplies, per hay-consuming animal, are larger than in the 1930-31 or 1931-32 feeding seasons, the quantity of hay available per hay-consuming animal is smaller than during the previous three years. Unusually large quantities of wheat were fed to livestock in 1930-31 and 1931-32 because of the short supplies of feed grain and hay. Wheat feeding apparently continued heavy, especially in the States west of the Mississippi, until the new 1932 corn crop became available. The relation of wheat prices to livestock prices in some areas is still favorable to feeding wheat to livestock but it is not probable that the quantity of wheat fed will be as large this season as in the 1931-32 season.

The acreage in feed crops in 1932 was the largest ever harvested in this country, and the 1932 production of feed crops was exceeded only in 1920. The combined production of corn, oats, barley, and grain sorghums in 1932 totaled 111,500,000 tons, compared with 97,500,000 in 1931, a 5-year average (1925-1929) of 102,800,000 tons, and the record production of 116,500,000 tons in 1920. The acreage devoted to feed grains has increased 14,400,000 acres or 9.3 per cent since 1929. The hay acreage of 1932, although larger than the acreages of either 1930 or 1931, owing to the 2,000,000-acre increase in wild hay cut, was still about 1,750,000 acres below the 1925-1929 average. The total production of hay of 81,788,000 tons in 1932 was larger than in 1930 and 1931 by 10 per cent and 11 per cent respectively, but was 4 per cent below the 5-year (1925-1929) average.

The carry-over of feed grains from the 1931 crop into the 1932-33 feeding season was above average, owing to the large supplies of corn, whereas the carry-over of hay was much below average. When the carry-over on farms and in elevators is added to the crop, the supply of corn available for the 1932-33 feeding season was 3,090,000,000 bushels, the largest since 1922. The total supplies of oats, 1,320,000,000 bushels, were slightly above average. Total supplies of barley, 308,000,000 bushels, were the largest ever held in the United States with the exception of the supplies of 1930 and 1928. The grain-sorghums crop of 106,000,000 bushels was about the same as in 1931, but was 9,000,000 bushels above the 1925-1929 average. Total hay supplies, including carry-over, were 90,000,000 tons, compared with 81,000,000 tons last year, and a 5-year average of nearly 96,000,000 tons. The total supply of feed grains, including carry-over, is the largest since 1921, but when the smaller supplies of hay are considered, total supplies of all home-grown feeds are only slightly above average.

The consumption of feed grains on farms during the first three months of the 1932-33 feeding season (October 1-January 1), was about 12 per cent greater than in the first three months of the 1931-32 feeding season, but the

proportion of the total supplies fed was only about average. Up to January 1, about 30 per cent of the total supplies for the year had been fed, compared with 33 per cent in the same months last year, 37 per cent in the 1930-31 feeding season, and a 4-year average (1926-27 to 1929-30) of 30 per cent. Farmers are apparently not feeding any more feed than usual in years of large supplies in spite of the unusually low prices of feed grains.

The aggregate production of by-product feeds during the 1932-33 season will probably be the smallest since 1923-24. Since 1930 a marked downward tendency in wheat-offal production at merchant mills has been in evidence, owing to the smaller millings of flour. No immediate change in this trend is anticipated until some enlargement of foreign markets for flour occurs. Production of wheat mill feeds at all merchant mills during the season ended June, 1932, totaled 4,400,000 tons compared with 4,750,000 tons in the previous season and 4,900,000 tons two years earlier. From July 1 (the beginning of the 1932-33 season) to the end of December, wheat-offal production was 2,250,000 tons, or about 7 per cent under that of a year ago.

Prospective domestic supplies of high-protein feeds for 1932-33 are also smaller than those for recent seasons. Despite a heavier production of cottonseed and soybean meal in 1931-32, a down trend in high-protein feed production persisted, owing to a considerable reduction in the output of linseed meal and some decrease in gluten feed and meal. Materially smaller supplies of cottonseed cake and meal are available for 1932-33, compared with last season. If a normal proportion of the smaller supply of new-crop cottonseed should be crushed, it would yield about 2,000,000 tons of cottonseed meal. This, together with the mill carry-over of meal, makes a total potential supply for the season of 2,115,000 tons. Out of a total supply of 2,548,000 tons last season, 2,216,000 tons were consumed in the United States, 217,000 tons were exported, and 115,000 tons of meal were carried over into the present season. The carry-over of cottonseed into the 1932-33 season of 300,000 tons was a record and may be compared with 25,000 tons last season.

Supplies of domestic linseed meal are restricted by another short crop of flaxseed, about equal to last year's short crop. Wet-process corn grindings, from which gluten feed and meal are by-products, totaled only 62,002,000 bushels in the season ended October 31, compared with 66,555,000 bushels in the previous year, and 77,493,000 bushels in 1929-30. The relatively high price of alfalfa meal in comparison with bran and other feedstuffs has restricted alfalfa-meal production which in 1931-32 (season ended with May) totaled only 187,000 tons against 302,000 tons in 1930-31. Grindings so far this season, June-December, aggregate 108,000 tons compared with 133,000 tons in the same period last year.

Prices of by-product feeds reached unusually low levels in 1932. Some feed stuffs reached record lows for the period in which they were important feeds. Low prices of feed grains and wheat and limited funds available for purchasing straight or commercially mixed feeds forced prices lower despite reduced production of by-product feeds. The wholesale price index of feed stuffs as a group averaged 38.2 per cent (1926=100) in December, 1932, compared with 52.4 per cent in December, 1931, and 78.6 per cent in December, 1930.

In the North Atlantic States, the production of feed grains in 1932, although somewhat below that of 1931, was higher than in any other year since 1927. Hay production in this area was both below that of 1931 and below average. The acreage devoted to feed crops in these States has increased in each of the last three years, a reversal of the downward trend which had prevailed for a number of years prior to 1930. The increase in feed-grain production has apparently been an attempt to reduce the cost of the dairy ration, and has about kept pace with the increase in the number of dairy cows. Feed-grain acreage in these States may be expected to remain at higher levels than in recent years as long as the present relationship between prices of dairy products and the local prices of feed and feed grains continues.

The sharp increase in feed-grain production in the East North Central States in 1931, following the 1930 drought, was followed by a further slight increase in 1932. Current supplies of feed grain in this area are considerably above average, but hay supplies are materially below average because of the marked reduction in timothy and clover acreage and below-average yield of hay in 1932. The number of animals on farms in these States has been increased rapidly since 1930, and is now the highest since 1923. According to the December pig survey, farmers in this area will increase the number of sows to farrow in the spring of 1933 about 7 per cent over the number farrowing in the spring

of 1932 and cattle numbers are also on the increase. The increase in the acreage of winter wheat sown in these States may cause a slight decrease in the acreage of feed crops planted in 1933 unless there is material abandonment of winter-wheat acreage. There may also be some shift of acreage into hay and pasture crops since the hay acreage is at a rather low level, and livestock numbers are increasing.

In the West North Central States the acreage of feed crops reached a record high point in 1932. There has been an almost steady increase in feed-grain acreage in this group of States for several years, owing partly to an expansion of total crop acreage in the western part of the area and partly to a decrease in wheat acreage in the eastern part. Production of feed crops also attained a record in 1932 and was about 40 per cent greater than the short crop of 1931. Hay supplies in 1932 were also large except in Missouri and Kansas where they were below average. In both 1930 and 1931 a combination of short feed supplies and low prices of wheat resulted in the feeding of unusually large quantities of wheat to livestock in these States. With present liberal supplies of feed grains feeding of wheat from the 1932 crop will probably be on a much smaller scale. A reduction in the acreage of winter wheat sown in the fall of 1932 as compared with the acreage sown in the fall of 1931 indicates that little, if any, reduction in feed-grain acreage may be expected in this area in 1933. Feeding of cattle and lambs for market this year is on a smaller scale than the average of recent years.

In the Southern States feed-grain acreage has increased in each of the last three years after a decline that had continued over a number of years. Short supplies of feed grain in the drought year of 1930 and a reduction of cotton acreage in 1931 caused a sharp increase in the acreage devoted to feed crops in the latter year. Continued low prices of cotton induced southern farmers to make still further shifts from cotton to feed-grain production in 1932. Below-average yields in 1932 resulted in about the average relationship between feed-crop production and animal numbers. So long as the present relationship between prices of cash crops produced in the South and prices of shipped-in feed exists, it is probable that southern farmers will continue to produce a larger proportion of their feed requirements than they have done during late years.

In the Western States there was a marked increase in the acreage of feed grains harvested in 1932 as compared with 1931. The 1931 acreage was low because of drought, but the 1932 acreage was the largest on record and represents a continuation of the upward trend which has been in evidence for several years. Yields per acre of feed grains were below average in this area in 1932 so that production was only about average. Total supplies of feed grain, because of small carry-over from the short 1931 crop, are considerably below average. The shortage is sufficient to reduce feeding operations in certain sections, notably eastern Colorado. The 1932 hay crop in the Western States was above average, but the carry-over of old hay was very small and total supplies available for the current season are only about average. In the 1931-32 season feed supplies were supplemented by feeding unusually large quantities of wheat.

CLOVER AND ALFALFA SEED

Supplies of alfalfa, sweetclover, and alsike-clover seed are much lower than usual and may be nearly absorbed during the spring seeding season. Stocks of red-clover seed may not be cleaned up so fully as those of the other seeds because supplies are only slightly below the 5-year average. Prices of the various clovers declined about as much as prices of other farm products during last year, but alfalfa-seed prices have remained about the same as they were a year ago. Under present conditions growers are inclined to increase the production of alfalfa seed, particularly in the Northern States, and to maintain the acreage of the clovers for seed production.

Sales of red-clover seed to farmers in the spring of 1932 declined about 10 per cent from those of the year before, but carry-over was much smaller in 1932 than in 1931. Total production of red and alsike-clover seed for 1932 was estimated at 101,268,000 pounds, compared with 68,304,000 in 1931 and 89,442,000 pounds in 1930. Imports of red-clover seed were negligible in 1932. Exports have been light and amounted to 297,899 pounds for 1932, compared with 670,304 pounds in 1931 and 535,472 pounds in 1930. The acreage of red clover cut for hay in the North Central States in 1932 was small because of the drought in 1930 and 1931. Farmers in those States probably will sow

as much red clover for hay production as they can finance in order to restore much of the acreage that has been lost.

Although the crop of red-clover seed in Europe was larger in 1932 than in 1931, severe competition from Europe is not expected. Prices in Europe are 1 to 3 cents a pound lower than prices in the United States, but this difference is more than offset by the duty of 8 cents a pound. Wholesale prices at principal markets in January, 1933, were about 35 per cent lower than a year ago and about 65 per cent lower than for the five years 1927-1931.

Available supplies of alsike-clover seed are the smallest in several years. Although a slightly larger crop was harvested in 1932 than in 1931, the increase was more than offset by a sharp reduction in carry-over, a lack of imports, and an increase in exports. Little, if any, of this seed is expected to be imported because of the relatively small crops produced in Canada and in Europe. No seed was imported during the fiscal year ended June 30, 1932, but imports amounted to 93,800 pounds in 1930-31 and 7,220,300 pounds in 1929-30. Current wholesale prices are about 25 per cent lower than they were a year ago and about 60 per cent lower than the 5-year average price.

Following a slight reduction in spring retail sales, the carry-over of sweet-clover seed in 1932 was slightly larger than in 1931, when it was at the lowest point in seven years or more. Production in 1932 amounted to about 34,400,000 pounds, compared with 50,300,000 pounds in 1931 and 50,900,000 in 1930. No seed was imported either in 1932 or in 1931. Shortage of legume hay and pasture in the North Central States may bring about some increased seedings of sweetclover because pasturage of this crop would be available more quickly than that of alfalfa or red clover. Furthermore the low price of this seed may encourage its greater use. Current wholesale prices are about 25 per cent lower than they were a year ago, and about 55 per cent lower than the 5-year average price.

Alfalfa seed supplies are the lowest in four years or more. The carry-over was reduced somewhat last spring and was followed by the smallest crop in 10 years. Production declined from that of 1931 in a majority of the principal producing sections, but showed small increases in Minnesota, North Dakota, Texas, and Wyoming. Total production in 1932 amounted to about 32,300,000 pounds, compared with 50,300,000 pounds in 1931 and 70,000,000 pounds in 1930. Supplies were reduced further because Europe drew heavily upon this country as well as Argentina, because of poor crops in France and Italy. Exports from the United States for 1932, amounting to 1,564,641 pounds, compared with the 5-year average of 810,445 pounds, were the largest on record. Imports for the fiscal year ended June 30, 1932, were 352,700 pounds, compared with 233,400 in 1931. Only light imports may be expected this season because of the small 1932 crop in Canada. In the East North Central States and in Minnesota, some expansion in alfalfa acreage for hay may replace the present shortage of legume hay acreage, but the reduced incomes of farmers in that area may tend to restrict this expansion. Wholesale prices of common alfalfa are about the same as a year ago, but are about 35 per cent lower than the 5-year average. Prices of Grimm alfalfa are about 40 per cent lower than the 5-year average price.

POTATOES

Planting intentions of potato growers on January 1, as reported to the United States Department of Agriculture, indicate a reduction of 8 per cent in total potato acreage in 1933 as compared with the harvested acreage of 1932. With a possibility of better growing conditions, however, the decrease in acreage is likely to be offset by higher yields which would result in a supply equal to or greater than that produced in 1932. With no material improvement in consumer purchasing power, and a continuation of heavy home-grown supplies in consuming areas, returns for such a crop will probably be low, and may be profitable only to those growers having low production and marketing costs.

The acreage harvested in 1932 was approximately 3,368,000 acres, or 7,000 acres less than that harvested in 1931. The decrease of 53,000 acres in the 11 early States was more than offset by the increase of 72,000 acres in the five central surplus late States. In the rest of the country the 1932 acreage was a little smaller than the 1931 acreage. Yields per acre in 1932 averaged only 106 bushels per acre compared with 111 bushels in 1931 and compared with a record high yield of 123 bushels in 1928, and a 5-year average (1927-

1931) of 114 bushels. The production in 1932 amounted to 357,000,000 bushels, compared with 375,000,000 bushels produced in 1931, and about equal to the average for the 5-year period 1927-1931. An acreage for harvest in 1933 of about 3,270,000 acres (such as indicated by the January reports of growers' intentions to plant), with a yield near the 5-year average of 114 bushels per acre, would produce a total crop of approximately the same size as that of 1931. Yields may be somewhat curtailed in some sections because of decreased use of fertilizer, and the average for the entire country may be reduced because of larger proportionate acreage decreases in areas having relatively high yields, like Maine and Idaho. It is reasonable to expect, however, that the United States yield in 1933 will be above the low figure of 106 bushels per acre harvested in 1932.

The reduced production in 1932 was mostly in the 11 early States and in the northeast. The 11 early States produced a crop, commercial and non-commercial, of 30,000,000 bushels in 1932 compared with 40,300,000 bushels in 1931, a reduction of 25 per cent. For 1933, growers in these States have indicated an intention to decrease their total potato acreage between 2 and 3 per cent. This is expected to occur through an 11 per cent decrease in the commercial early acreage for shipping purposes, which acreage, however, represented only about one-third of their total potato acreage in 1932. The remaining two-thirds of the acreage, largely for home or local supplies in these early States, is expected to be increased about 2 per cent in 1933.

The seven intermediate States produced a total of 35,300,000 bushels in 1932, compared with 37,500,000 bushels produced in 1931, a reduction of 6 per cent. In these States a further decrease of about 4 per cent is indicated for the total acreage in 1933. A reduction of 13 per cent is planned in the commercial acreage (representing less than 40 per cent of the total in these States in 1932) but a 2 per cent increase is indicated in the remaining acreage for home and local supplies.

In 1932 producers of commercial potatoes in the early and intermediate States averaged only 121 bushels per acre, because yields were reduced by the severe freezes in the Gulf States and the drought following this freeze in these States and in Georgia, South Carolina, Virginia, and Maryland. If their 1933 yields approximate the 5-year (1927-1931) average of 133 bushels per acre, there may still be produced a crop comparable with the 33,500,000 bushels produced in 1932, even with the contemplated reduction in acreage. The 1933 carry-over of old potatoes is expected to be as large as that of 1932, and the continued low levels of consumer incomes are likely to cause new potatoes to sell at prices comparatively close to those of old potatoes, unless the new crop is very short.

Production in the 30 late States in 1932 was estimated at 291,000,000 bushels, a reduction of 2 per cent below the 1931 production. Of this group, the 18 surplus or major shipping States had a crop 12,400,000 bushels smaller than that of 1931. The crop in the 10 Western States was 3,400,000 bushels smaller, in the 5 Central States about 7,300,000 bushels larger, and in the 3 North-eastern States 16,300,000 bushels smaller than in 1931. On the other hand, the 12 late States other than the surplus States had a crop 6,300,000 bushels greater than that of 1931.

For 1933 the planting intentions of growers in the 30 late States indicate a 3 per cent decrease from the 1932 harvested acreage. The 18 surplus-producing States show a 4 per cent decrease, divided about proportionately among the eastern, central, and western groups. The 12 other late States (the 5 New England other than Maine, and West Virginia, Ohio, Indiana, Illinois, Iowa, New Mexico, and Arizona), which produce potatoes mainly for home or local consumption, show intentions to increase their acreage 3 per cent. This would make a net decrease in the 30 late States of about 3 per cent. In 1932 the yields per acre in the 30 late States averaged 111 bushels, compared with the 5-year (1927-1931) average of 118 bushels. If weather conditions are normal in 1933, yields are likely to be nearer the average and production about the same as that of 1932.

The commercial production of early and intermediate crop potatoes was 27 per cent smaller in 1932 than in 1931, and the price averaged 59 cents per bushel compared with 63 cents in 1931. In spite of the 48 per cent smaller crop in the eight early States, the prices received by the commercial growers in Florida and in the lower valley of Texas averaged only \$1.28 per bushel as compared with \$1.11 in 1931, and in the other States of this group only

70 cents per bushel in 1932 compared with 64 cents per bushel in 1931. In the second-early group of States, where commercial production was 25 per cent lower than in 1931, growers received 59 cents per bushel compared with 51 cents in 1931. In the intermediate group of States, commercial production was 13 per cent less than that of 1931, and the growers received about 48 cents per bushel in 1932 compared with 57 cents in 1931. Late-crop potatoes in the fall of 1932 brought record low prices owing to the further decline in consumer income and to the greatly increased supply of home-grown potatoes. In mid-December, the United States average price received by producers, including prices in deficit as well as surplus areas, was 37 cents per bushel, or 9 cents less than in December, 1931, and 53 cents less than in December, 1930. Before this season, the previous low price for any month since July, 1908, occurred in May, 1910, when the average was 38 cents per bushel.

Prices received by commercial growers in Maine and New York averaged higher in December, 1932, than in December, 1931. In Michigan and Wisconsin prices were lower and in Idaho they were less than half those of 1931. Prices to growers, cash per 100 pounds in bulk, for U. S. No. 1 potatoes during December, 1928-1932, averaged as follows: At Presque Isle, Me., \$0.36, \$2.04, \$1.15, \$0.30, and \$0.46; at Rochester, N. Y., \$0.75, \$2.40, \$1.40, \$0.53, and \$0.56; at Cadillac, Mich., \$0.38, \$1.74, \$0.90, \$0.30, and \$0.24; at Waupaca, Wis., \$0.46, \$1.78, \$0.92, \$0.36, and \$0.31; and at Idaho Falls, Idaho, \$0.53, \$1.67, \$0.66, \$0.48, and \$0.23, respectively.

Car-lot shipments from the 18 late States through January 21, 1933, amounted to about 66,000 cars, compared with 89,000 and 108,000 cars, respectively, through the same month in 1932 and in 1931. There has been a great increase in the movement of potatoes by motor truck, but although little information on the total amount of such movement is available, it is not probable that the truck shipments account for all of the decrease in carlot shipments.

Of the 1931 crop produced in the 30 late States, 37 per cent, or 110,000,000 bushels, was available for marketing after January 1, 1932. The January 1, 1933, merchantable stocks from the 1932 crop can be expected to be at least as large as those of January 1, 1932. Such a large supply of old potatoes is an important factor in determining the trend of the late-crop potato price from January through June and will compete with the new-crop marketings throughout the spring and early summer of 1933.

In the intermediate and late-crop States producers face continued competition from potatoes produced in home and local gardens. There has been a great increase in such production in and around towns and cities and on farms in noncommercial potato areas. Through such means a considerable part of the population in these districts have produced their own supplies of potatoes, with a consequent decrease in the market outlet for commercial-producing areas. Such production can be expected to be fully as large in 1933 as in 1932. The producers in the late States are also increasing their production of earlier-maturing varieties, which will further compete with production in the intermediate States.

Reports from the certification agencies in 22 States indicate a total production of all varieties of certified seed amounting to 6,929,000 bushels in 1932, compared with 8,765,000 bushels in 1931 and 6,703,000 bushels in 1930. Prices paid to growers in the more important States ranged from 20 to 75 cents a bushel, averaging 47 cents, which compares with 58 cents in 1931 and \$1.25 in 1930. The demand for seed has been dull.

Production of certified seed of seven important varieties in 1932, as compared with production in 1931, was as follows: Green Mountain, 40 per cent less; Irish Cobbler, 25 per cent less; Early Ohio, 23 per cent greater; Triumph, 8 per cent greater; Russet Rural, 24 per cent greater; Smooth Rural, 5 per cent less; and Russet Burbank (Netted Gem), 13 per cent less. Compared with production in 1930, production of these varieties in 1932 was as follows: Green Mountain, 2 per cent less; Irish Cobbler, 20 per cent greater; Early Ohio, 101 per cent greater; Triumph, 33 per cent less; Russet Rural, 43 per cent greater; Smooth Rural, 7 per cent less; and Russet Burbank, 21 per cent less.

SWEETPOTATOES

As has been usual when the price of cotton is low, the acreage planted to sweetpotatoes was greatly increased in both 1931 and 1932, the estimated 926,000 acres grown in 1932 being nearly 43 per cent above the acreage harvested two years ago. Although the 1932 yield per acre was rather low,

averaging about 85 bushels, compared with the very low yield of 80 bushels last year and an average of 91 bushels during the previous 10 years, market supplies have been burdensome and the crop has been moving from the farms at prices about one-third lower than were received last year and only slightly more than one-half the average price at the same season during the 1910-1914 period.

The present low price will tend to discourage farmers from making any further increase in the acreage of sweetpotatoes grown for sale in 1933, and will further discourage use of commercial fertilizer on sweetpotatoes. However, should average weather conditions prevail during 1933, there may be some moderate increase in the yield per acre.

There may be some local areas in which the very low price received for the 1932 crop will cause a material reduction in the acreage planted to sweetpotatoes in 1933, with a corresponding improvement in the outlook for local producers who take advantage of the opportunity. In most parts of the South, however, little or no reduction in acreage is to be expected because only a small part of the total acreage is grown for sale and prices of alternative crops are also low. The majority of southern farmers are still faced with the need to produce on their own farms a large share of the food required by their families. In most cases this means planting an acreage of sweetpotatoes large enough to supply family requirements.

In the Eastern Shore area of Virginia, where sweetpotatoes of the dry-fleshed type are grown for northern shipment, the prospective reduction in the acreage of Irish potatoes may result in an increased acreage of sweetpotatoes which are commonly grown on the same farms in that area and which require less investment for seed and fertilizer.

COMMERCIAL VEGETABLES

The market outlook for commercial vegetables during 1933 appears to be even less favorable for producers than the situation during the last two years. Under the conditions that have developed since 1929, marked by reduced consumer buying power and a declining price level, there has been a noticeable tendency in the direction of increased home and local gardening in and around towns, on farms, among the unemployed, and by part-time employees. Much of this increase in gardening primarily represents sustenance enterprises, but these operations have the effect of eventually expanding the proportion of foodstuffs produced locally, thus decreasing the outlet for supplies that would normally move in from distant producing areas. Although costs of production have been lowered in all vegetable-producing areas, transportation costs remain relatively unchanged, and as prices decline these costs take an increasingly larger share of the market price on commodities shipped long distances. This reacts to the benefit of growers nearest to market, and so long as prices and purchasing power continue at their present levels, the shift, toward increasing local production of food supplies, both for home use and for local sale, may be expected to continue.

Production of commercial truck crops grown for shipment (that is, not including the products of home and market gardens) continued to expand in 1932, with a 3 per cent increase over 1931 production. Prices declined 16 per cent below those of 1931 and caused growers in some areas to leave much salable produce in the field. The immediate prospect for the 1933 vegetable season is that supplies will probably be available in their usual plentiful quantity although weather conditions, as usual, will cause occasional scarcity in the supply of one vegetable or another. Already there are indications of expansion of acreage planted or to be planted to early vegetables in the Southern States where growing conditions are favorable for continuous cropping throughout the year. Stocks of late cabbage, onions, potatoes, and sweetpotatoes are still large and are likely to offer severe competition to early spring-grown vegetables. There are large supplies of home-grown storage vegetables still on hand and indications of further expansion to occur in home and local production of vegetable crops in and around many industrial centers in 1933. There is also considerable evidence that competition among the established commercial vegetable-producing areas will be as severe throughout the 1933 season as it was in 1932. Any improvement that may develop in the business situation, and eventually in buying power, is not expected to be very marked in 1933 and the effect of such improvement upon vegetable prices would probably be slow and not very pronounced.

VEGETABLES FOR FRESH MARKET SHIPMENT

Prices of commercial vegetables grown in the United States for fresh market shipment declined further during 1932. Prices of these vegetables have followed a downward trend through the last 10 years, but the declines during the last three years have been accentuated by the marked shrinkage of consumer purchasing power and by the increased production of home and local vegetable supplies. During the last two years, prices have declined even for vegetable crops produced in smaller commercial quantity than previously. The index of prices of vegetables for fresh market shipments declined about 16 per cent during 1932, following declines of 11 and 15 per cent, respectively, during 1930 and 1931. This represents a total decline of approximately 37 per cent from the 1929 prices. In general, this decline has not been so sharp nor so great as those that have taken place in many field crops and in livestock. Owing to the sharp decline in prices and to lower yields per acre, the average per acre return from vegetables for fresh market shipment has declined 45 per cent since 1929. These commercial vegetables left the growers' hands at an average of \$96 gross per harvested acre in 1932, compared with \$118 per acre in 1931, \$142 in 1930, and \$175 in 1929. Reduction in the heavy cost of producing most of these truck crops has not been sufficient to make up for all of this decline in price.

There is evidence that, because of the relatively smaller price decline in vegetable crops than in other crops and because of the high gross return per acre from vegetables, growers have looked upon vegetable production as holding good prospects for expansion or as a relatively profitable alternative for other cash crops that have brought disappointingly low returns. But the increasing competition, and the higher costs and greater risks usually involved in the production and marketing of these perishable crops, merit, especially, careful thought before any further shifts from other crops to vegetables are made.

The steady upward trend in commercial production of vegetables for fresh market shipment has been a major factor responsible for the steady downward trend of vegetable prices during the last decade or more. Production in the United States has increased almost steadily during the last 15 years and reached a new peak in 1932 when the combined total of 15 important crops increased about 3 per cent over that of 1931, 1 per cent over the previous record total in 1930, and 20.5 per cent over the 1924-1929 average. Production has increased 60 per cent during the last 10 years.

This great expansion in production has been due largely to the steady increase in the acreage devoted to vegetables rather than to increased yields. The rate of expansion of acreage planted to vegetables for fresh market shipment average about 9 per cent per year from 1923 to 1930 and 2 per cent per year in 1931 and 1932. From a total of 1,271,000 acres in 1929, the acreage of 21 vegetable crops for fresh market shipment increased to 1,414,000 acres in 1930, to 1,451,000 acres in 1931, and to 1,473,000 acres in 1932. Among the more important crops, there were increases in 1932 in the acreages of asparagus, Lima beans, snap beans, cauliflower, celery, onions, green peas, and tomatoes; there were decreases in acreages of cabbage, cantaloupes, carrots, cucumbers, lettuce, peppers, spinach, and watermelons. For 1933 the reports furnished to the United States Department of Agriculture up to January 15 regarding intentions to plant and acreage already planted indicate that growers in the early Southern States are going ahead with further expansion in vegetable production. There are increases in the acreages intended or already planted in the case of nine crops reported to date, and a decrease is shown for only one early crop—onions.

WINTER VEGETABLES FROM MEXICO AND CUBA

In the face of tariff barriers and weak demand conditions in the United States, shipments of winter vegetables from Cuba and the west coast of Mexico have declined during recent years from those of the peak year of 1929-30. Early estimates for the 1932-33 season indicated reduced acreages for nearly all the vegetables shipped from these countries to United States markets, and exports up to January have fallen below those reported for the same period last season.

In Cuba the 1932-33 season opened rather early. November shipments compared favorably with those of November, 1931, but the total for November-

December, 1932 was a little less than one-half the total for November-December, 1931. Cucumber shipments alone showed a substantial gain over last season. Indications point to increased shipments of all vegetables as the season advances, but estimates fall below the quantities exported last season.

Plantings of winter vegetables in Mexico for the 1932-33 season declined, but the favorable growing conditions indicate crops of excellent quality. It is reported, however, that the heavy frost in the latter part of December did irreparable injury, so that total shipments will be sharply curtailed. An outstanding feature of the 1932-33 season is the adoption by the growers of a new policy, under which a centralized agency has been placed in charge of the financing, distribution, and marketing of the winter vegetables produced on the west coast.

CANNING-VEGETABLE CROPS

Prices paid to growers for vegetables for canning or manufacturing purposes declined further during 1932. The level of prices of 10 of the more important crops (tomatoes, green peas, sweet corn, snap beans, asparagus, cabbage for sauerkraut, pimientos, green Lima beans, spinach, and beets) is now about 37 per cent below that of 1929; prices of these vegetables declined only slightly during 1930 but dropped 17 per cent during 1931 and 23 per cent during 1932. Along with these declines in prices, production was curtailed by 29 per cent in 1931 and 14 per cent in 1932. Owing to the sharp price declines, the gross return per acre of vegetables for canning or manufacturing purposes has been decreased by 39 per cent during the last three years. The crops returned on the average about \$34 per acre gross to the growers in 1932 compared with \$37 per acre in 1931, \$52 per acre in 1930, and \$56 per acre in 1929.

The acreage planted to these vegetables usually expands and contracts in more or less regular cycles, expansion depending primarily on the demand for the manufactured product and the supplies accumulated. There were three successive years of increases in acreage from 1928 to 1930, inclusive, which carried the total up to a record peak in 1930. During 1931 and 1932, there were decreases of 18 per cent and 29 per cent, respectively, which brought the total acreage of vegetables for canning or manufacturing purposes down to approximately the 1919 total. From 1,104,000 acres in 1929 the acreage of these crops increased to 1,261,000 acres in 1930, and then decreased to 1,035,000 acres in 1931, and to 738,000 acres in 1932.

Annual enumerations of pack are made by the United States Department of Commerce in the case of tomatoes, green peas, sweet corn, and snap beans. The combined pack from these four crops, representing about 87 per cent of total production of the 10 crops listed above, reached a peak in 1925, amounting to the equivalent of more than 80,000,000 cases of 24 No. 2 cans. Following 1925, the pack declined to 57,267,000 cases in 1926, and to 50,818,000 cases in 1927. It increased to 53,513,000 cases in 1928, and to 69,158,000 cases in 1929, and again reached a high point of 75,555,000 cases in 1930. In 1931, it dropped to 55,425,000 cases. Complete statistics on the 1932 pack are not yet available, but estimates of production indicate a 22 per cent reduction as compared with the 1931 pack. In this event, the 1932 pack of these four vegetables was probably close to 43,200,000 cases, or the smallest since 1921. Should the 1933 packing operations follow the same cyclical movement exhibited since 1925, the combined pack of tomatoes, green peas, sweet corn, and snap beans will show an increase over the pack of 1932.

Complete data on present holdings of canned goods by canners and distributors are not available. The only indications on these stocks consist of quarterly reports by the United States Department of Commerce, giving comparative holdings of identical groups of representative canners and distributors from one period to another. The stocks report of January 1, 1933, showed the following trends on green peas, sweet corn, tomatoes, and snap beans:

Canners' stocks, with the exception of tomatoes, were substantially below those of January 1, 1932, a year ago. Green peas showed a decrease of 27 per cent, sweet corn 21 per cent, and snap beans 23 per cent. Tomato stocks were 3 per cent larger than a year ago. The combined stocks of the four vegetables in the hands of this group of canners on January 1, 1933, representing a total of 18,207,000 cases of all sizes, were 18 per cent smaller than the holdings of the same group of canners on January 1, 1932.

Stocks in distributors' hands on January 1, 1933, according to reports from 460 distributors holding a total of 4,022,000 cases of all sizes of green peas, sweet corn, snap beans, and tomatoes, differed only slightly from the stocks held by the same group on January 1, 1932. Stocks of peas held by these distributors were 10.8 per cent larger than on January 1, 1932; stocks of sweet corn, snap beans, and tomatoes were smaller by 3.7 per cent, 10.1 per cent, and 0.8 per cent, respectively.

Low level of consumer purchasing power continues to hold prices of canned vegetables low, in spite of reduced stocks. Prices of canned peas advanced slightly during the early fall months of 1932, but have recently lost about one-half of the advance. Other canned vegetables have held fairly steady near the low levels of last spring. Prices of canned vegetables declined more rapidly during 1930 and 1931 than did prices paid growers for canning crops, but in 1932 the low level of prices paid for canning crops was adjusted fairly well to prices of the canned product.

CABBAGE

The United States cabbage acreage of 137,670 acres in 1932 was 8 per cent below that of 1931 and 9 per cent below that of 1930. As a consequence, the production of 964,400 tons was the smallest since 1928, but prices to growers averaged only slightly higher than in 1931, when they were the lowest for a number of years. The higher prices received during 1932 were for the early crops only and already growers in the early-producing States indicate that they are expanding acreage materially for 1933—the fall-crop acreage is nearly doubled, the winter-crop acreage increased by one-half, and the intended acreage in the second-early States is nearly one-fifth larger.

Production of domestic and Danish types of cabbage in the late States during 1932 amounted to 610,800 tons compared with 499,800 tons in 1931 and 614,700 tons in 1930. The acreage harvested in 1932 was practically unchanged from that in 1931, but yields averaged 1.7 tons per acre higher in 1932. The production of late domestic-type cabbage, which includes most of the cabbage used in commercial sauerkraut manufacture, amounted to 316,900 tons in 1932, compared with 238,100 tons in 1931 and 323,800 tons in 1930. Although a slightly larger quantity was taken by sauerkraut packers in 1932 than in 1931, their purchases represented only 38 per cent of the late domestic-type crop in 1932, compared with 49 per cent in 1931 and 55 per cent in 1930. Prices received by growers for their late domestic-type crop in 1932 averaged 48 per cent lower than in 1931 and 54 per cent lower than in 1930. The production of the late Danish or storage type of cabbage amounted to 293,900 tons in 1932 compared with 281,700 tons in 1931, and 290,900 tons in 1930. Prices received by growers up to December 1 declined 51 per cent from the average of the same period in 1931 and were 61 per cent below those in 1930. Storage stocks of Danish cabbage on January 1, 1933, amounted to 81,980 tons compared with 62,840 tons on January 1, 1932. For the remainder of their 1932 marketing season, growers in the late States do not have an encouraging prospect in view of present supplies of late cabbage and the expected increase in the early-cabbage supply.

The possibilities for the late-cabbage crop of 1933 will be largely dependent on weather factors. Probably only a substantial reduction in acreage in 1933 would improve the late-crop situation if, as in 1932, weather conditions again favor yields above the low averages of 1930 and 1931.

In the early States (California, Florida, Louisiana, and Texas) the planted acreage for the 1933 crop was increased 50 per cent over that of 1932 and production was forecast on January 11 at 248,000 tons compared with 173,500 tons in 1932 and 274,100 tons in 1931. The Texas crop accounts for most of the large 1933 increase. With this large production and with the large stocks of Danish-type cabbage remaining on hand for marketing this spring, it is probable that marketing conditions will be much less favorable than they were in the spring of 1932. Prices to growers for the 1932 crop in these States averaged \$26 per ton, but in 1931 they averaged only \$10 per ton.

In the second-early States (Mississippi, Alabama, Georgia, North Carolina, South Carolina, and eastern Virginia), acreage was reduced 18 per cent in 1932 to 10,880 acres. Yields were much below those in 1931 and also below the average of the preceding five years, so that production amounted to only 48,300 tons compared with 85,300 tons in 1931 and 79,600 tons in 1930. As a result of this small production, together with the small carry-over of late cabbage, prices

to growers averaged \$42 per ton in 1932 compared with \$15 per ton in 1931. The relatively favorable prices received in 1932 undoubtedly explain growers' present reports of intentions to increase the second-early acreage 19 per cent, but if more nearly usual yields are obtained in 1933, an acreage no larger than that planted in 1932 would produce a crop about one-third larger than the 1932 production.

In the intermediate shipping group—Arkansas, Illinois, Iowa, Kentucky, Maryland, Missouri, New Jersey, New Mexico, New York (Long Island), Ohio (southeastern), Tennessee, Virginia (southwestern), and Washington—there was very little change in the total acreage in 1932, but yields were smaller than average. Production in 1932 totaled 128,800 tons compared with 149,300 tons in 1931 and 152,000 tons in 1930. Nevertheless, prices to growers in these intermediate States averaged as low as in 1931. With normal weather conditions in 1933, the yield per acre may easily average 15 to 20 per cent higher than the low 1931 yield. Under such circumstances, the 1933 production would be larger than in any of the last three seasons unless the acreage is reduced 10 to 15 per cent. Some reduction seems likely to occur.

TOMATOES

The commercial acreage of tomatoes grown for the fresh market continued to mount in 1932, attaining a total of 164,000 acres, or about 3 per cent more than the record total of the year before. The acreage increases occurred largely in the intermediate and the late States and, with yields in these States noticeably better than they were in 1931, production received a double impetus. The supply of market tomatoes was accordingly excessive during the latter half of the season, sending prices to the lowest level on record. As a result of the low prices a part of the production in the intermediate and late crop States was left unharvested.

Owing to a sharply reduced acreage of fall-crop tomatoes in Florida and Texas and a material setback to the spring crop (in loss of plantings and impairment of yields resulting from destructive mid-March freezes in these States), production in the fall and early States showed a further material decline in 1932, reaching the lowest total since early 1926. The 1932 prices averaged 50 per cent higher than those of 1931, and this is tending to encourage acreage increase in 1933 in areas benefited by the higher 1932 price. This effect is apparent in the 1932-33 fall and winter acreage in Florida and Texas which has been more than doubled, and exceeds the record acreage harvested in the fall and winter of 1930-31. The 1932 spring crops in south Florida and Imperial Valley, Calif., were the only exceptions to this general situation in the early States, yields being unusually good in both these areas, production larger than in 1931, and prices low. South Florida shows a slight increase in spring plantings for 1933, but yields are likely to average nearer the usual level and production may be lower than a year earlier.

Heavier imports of tomatoes contributed to the increased supply during the early 1932 season when the large south Florida crop was being marketed. In the year ended June 30, 1932, imports were 8 per cent larger than in the preceding year, and nearly as large as in the year ended June 30, 1930. Mexico, which supplied about three-fourths of these imports, was reported to have a 10 per cent smaller acreage on the west coast for the 1933 season, as a result of losses on the previous year's crop and difficulty in securing financing. Further loss of Mexican acreage was caused by December freezes. Cuba also reported a reduced tomato acreage because of the growers' financial condition and heavy storm damage to some of the early plantings. Exports to the middle of January, 1933, from both sources were below those of the previous season to the same date.

In the second early States (Georgia, Louisiana, Mississippi, South Carolina, and parts of Texas other than the lower valley), where tomato acreage has shown steady increase since 1929, the 1932 acreage was 4 per cent greater than in 1931. With an acre yield one-fifth smaller than in 1931, the production in 1932 fell below average and prices rose somewhat from the low level of the 1931 season. Had yields not been unusually low in 1932, the acreage then was large enough to produce a crop very much in excess of the 1931 crop, which brought extremely low returns. Consideration of the probability of higher yields in 1933 should temper any thought of maintaining or increasing the acreage in the second early States as a result of the higher price received by growers in 1932.

In the intermediate and the late States acreage increases and better yields than those of 1931 sent production to a new peak and prices to a new low. The intermediate crop was 22 per cent larger than in 1931 and the price was 26 per cent lower. In the late States production was increased 36 per cent over 1931 production and the price fell 40 per cent. The 1932 yields, as a rule, were not greatly above the average of usual expectations in any area except California. In both the intermediate and the late States the excessive production—some of which was left in the fields for lack of a profitable market—was the result chiefly of sharp acreage increases in 1932, amounting to 15 per cent over 1931 acreages in the intermediate States and 23 per cent in the late States. An adjustment of the acreage in both groups down closer to the average level of acreage from 1928 to 1931 would materially ease the tomato-marketing situation during the latter half of the season.

TOMATOES FOR MANUFACTURE

The harvested acreage of tomatoes for manufacture in 1932 was 274,600 acres, which was 7 per cent below the 1931 acreage and 33 per cent below the record of 408,000 acres harvested in 1930. During the 5-year period 1926-1930 the acreage of tomatoes for manufacture ranged from 263,300 to 408,000 acres, with the 5-year average for the period amounting to 306,760 acres.

Production in 1932, however, was 1,141,000 tons, or 17 per cent larger than in 1931, the yield per acre averaging 4.16 tons compared with an unusually low yield of 3.30 tons in 1931. The range of production during the 5-year period 1926-1930 was 976,500 tons to 1,757,600 tons, the 5-year average amounting to 1,296,800 tons.

Although no accurate data are available on the relative percentages of production utilized for canned tomatoes and other tomato products (such as juice, paste, pulp, puree, catsup, soup, and sauce), reports from canners for the 1929, 1930, and 1931 seasons indicated that slightly more than one-half of the total production was used for canned whole tomatoes. For the 1932 season similar reports indicated that the proportion going into canned tomatoes was somewhat smaller, pointing to a probable increase in the canning of tomato juice, etc.

The pack of canned tomatoes reached a peak in 1925, when 19,770,000 cases of 24 No. 3 cans were packed. For the three years following 1925 the packs were of more moderate size, decreasing to 8,539,000 cases in 1928. In 1929 the pack increased to 14,145,000 cases; in 1930, to 16,998,000 cases, the second highest on record. In 1931, however, it dropped to 9,573,000 cases, the result of a 28 per cent decrease in acreage and the lowest recorded average yield per acre. No pack figures are yet available for the 1932 season, but judging from comparative production estimates for 1932 and 1931, the 1932 pack was probably about 11,000,000 cases. The average for the 5-year period 1926-1930 was 12,455,000 cases. Should no change be made in the 1933 acreage of tomatoes for manufacture and should an average yield per acre be obtained upon this acreage (about 4.2 tons per acre) the pack of canned tomatoes would probably be 1,000,000 cases under the 5-year average.

The apparent consumption of American canned tomatoes has averaged between 12,500,000 and 13,000,000 cases of No. 3's during the 10-year period ended 1929-30. During this period the apparent consumption of American canned tomatoes was fairly stable, although the consumption of all tomatoes and tomato products appears to have been increasing rapidly. Practically all of this increase in demand, however, appears to have been satisfied from increases in tomato products, from the supplies of fresh tomatoes, and from imported canned tomatoes. Imports of canned tomatoes reached a peak of 5,000,000 cases during the fiscal year 1929-30, and then, as a result of higher import duties which became effective in 1930, declined to 2,500,000 cases during 1930-31 and 3,000,000 cases during 1931-32.

In spite of low employment and decreased prices of farm products during the 1929-30 and 1930-31 seasons the consumption of canned tomatoes for these years appears to have been about equal to the average for the 10 years ended 1929-30. Relatively low prices of canned tomatoes have been an important factor in sustaining the consumption of canned tomatoes at a time when consumption of other canned vegetables has been decreasing.

Although no complete statistics are available on the present holdings of stocks of canned tomatoes by canners and distributors, the quarterly report of the United States Department of Commerce for January 1, 1933, gives com-

parative holdings of identical groups of representative canners and distributors which represent the approximate change in stocks from one period to another.

Reports from 248 representative canners whose total holdings on January 1, 1933, amounted to 4,352,300 cases of all sizes, indicated that stocks in canners' hands on that date were 3 per cent larger than stocks in canners' hands on January 1, 1932.

Holdings of 460 representative distributors on January 1, 1933, amounted to 1,310,131 cases of all sizes, or 0.8 per cent less than the holdings of the same firms on January 1, 1932.

ONIONS

The 1932 late commercial onion crop was the largest ever grown. Production of this crop is placed at 20,463,000 bushels, which is slightly more than the previous record crop of 1930 and 60 per cent more than the short crop of 1931. As a result of this heavy production the supply of late onions in storage on January 1 was estimated to be 6,814,000 bushels, compared with the unusually small holding of 3,066,000 bushels on the same date in 1932 and 5,928,000 bushels in 1931. This storage supply, probably the largest on record, will compete with a new crop in the spring of 1933, that now seems likely to be 15 to 20 per cent smaller than the 1932 crop but close to the production of early 1930 and 1931.

In the spring of 1932 the storage stocks of onions from the light crop of the preceding season were almost entirely depleted by the time the early crop in Texas was ready for market. Prices on old stocks had risen to unusually high levels, and the first of the new crop brought good prices. But soon after the Texas crop began to move in volume prices began a decline, which continued almost without interruption until before the end of the early marketing season very low levels were reached.

Preliminary estimates of the 1933 early Bermuda and Creole onion acreage in Texas, Louisiana, and California are for 21,200 acres, compared with 24,850 acres in 1932 and 19,550 acres in 1931. Of this estimated acreage in this early group of States, 19,400 acres are in Texas, 900 in Louisiana, and 900 in California. Approximately three-fourths of the Texas acreage is on dry land, compared with less than one-fourth prior to the 1931 season. Yields in these nonirrigated onion districts are dependent upon rainfall, and if there is a dry season the average yields for the State may be curtailed. With the heavy storage stock of late onions from the 1932 crop, however, and about an average acreage of early onions in prospect for 1933, the marketing season for the early crop may be similar to that of 1931. In that season storage stocks of late onions were heavy, prices were at very low levels, and about one-fourth of the entire Texas crop was not harvested because of unfavorable marketing conditions.

The 1932 domestic onion crop in the intermediate States (California, Iowa, Kentucky, New Jersey, Texas, Virginia, and Washington) was increased nearly 30 per cent over that of 1931 and was 42 per cent larger than the average of the five years 1926-1930. With this heavy production following the large early crop, prices to growers were very low, averaging about one-third less than in 1931. The acreage in these intermediate areas was increased more than one-fourth in 1932. A partial reduction toward the level of acreage prior to 1932 seems probable and desirable, considering the prices received in 1932 and the potential difficulties of the early 1933 onion marketing season.

In the late-crop States, where production in 1932 exceeded all previous records, the average seasonal price paid to growers, as reported to December 1, was only 22 cents per bushel, compared with 80 cents in 1931 and 44 cents for the large crop of 1930. Yields per acre of late onions were unusually high in 1932, but even with usual yields an acreage such as was grown in 1932 would produce a crop in excess of market requirements. The volume of onions consumed is not so greatly influenced by price as is that of many other commodities, and production surpluses usually cause relatively heavy price declines. Low prices received for their 1932 crop will undoubtedly induce late-onion growers to reduce their acreage. Such action is necessary to prevent a recurrence of excessive supplies in 1933, unless yields are again unusually low, as they were in 1928 and 1931.

FRUITS

For the country as a whole there are sufficient fruit trees to produce continued heavy commercial supplies in years of favorable weather conditions. The low prices during recent years are resulting in some neglect of trees and if they continue, may within a few years be reflected in curtailed production. Production costs have been reduced, but rail freight rates have not been lowered materially and for many growers, particularly those located at considerable distance from market, the transportation charges take a large part of the low current market price. Growers within a few hundred miles of their markets are making greater use of the motor truck in marketing. The export outlook for fruits is uncertain and is complicated by such factors as the prospective increases in foreign fruit production, increased tariffs, import restrictions, depreciated exchange, and general business conditions.

The combined production of the 10 more important fruits has been increasing at an average rate of about 1 per cent annually for the last 10 years. As the result of unfavorable weather conditions during 1932 and the tendency toward alternate bearing of some of the fruits, the combined production in 1932 of 10 of the more important fruit crops was about 10,245,000 tons, which is about 15 per cent less than the quantity produced in 1931 and 13 per cent less than that produced in 1930, but about 12 per cent more than the crop of 1929. Certain individual crops produced in 1932 were smaller than the 1931 crops by the following percentages: Apples, about 31 per cent; peaches, 40 per cent; pears, 6 per cent; dried prunes, 15 per cent; oranges, 2 per cent; grapefruit, 13 per cent; and lemons, 10 per cent. On the other hand, the following crops were larger by the following percentages: Grapes, 33 per cent; fresh prunes, 31 per cent; and cherries, 14 per cent.

Production of all citrus fruits for the five years 1919-1923 averaged 27 pounds per capita as compared with 42 pounds, the average for the period 1927-1931. Orange production increased from 19 pounds per capita in the former period to 29 pounds in the latter; grapefruit increased from 5 pounds to 9 pounds, and lemons from 3 pounds to 4 pounds. A similar comparison for other fruits shows that apples declined from an average of 77 pounds per capita in the period 1919-1923 to an average of 64 pounds in the five years 1927-1931, and grapes declined from 39 pounds to 36 pounds, largely as the result of the short 1931 crop. Peaches increased from 21 pounds to 23 pounds, and pears from 7 pounds to 10 pounds, thus making a net increase for these seven fruits from 195 pounds to 205 pounds. Imports of bananas averaged 24 pounds per capita in the period 1919-1923 as compared with an average of 30 pounds for the five years 1927-1931.

Farm prices of fruits have declined steadily since 1929 and in 1932 reached the lowest level in at least 10 years. These price declines were largely the result of reduced consumer purchasing power, some reduction in foreign demand, and the general decline in commodity prices. In the case of apples, on December 15, 1930, the farm price was \$0.99 per bushel, on December 15, 1931, about \$0.65 per bushel, and on December 15, 1932, about \$0.62 per bushel.

The 1932 peach crop in the Southern States was reduced sharply to about one-fourth of that of 1928. Production amounted to 5,497,000 bushels, car-lot shipments totaled only 4,622 cars, and the farm price to growers averaged \$0.94 a bushel. In 1928, the Southern States produced 21,353,000 bushels, shipped nearly 25,000 cars, and the average farm price was \$1.06 per bushel.

The precipitous price decline that has occurred since 1929 has placed fruit producers in a decidedly difficult position. Costs, for the most part, remained high in relation to returns for the product. But in the 1932-33 season production costs, with the exception of rail freight rates, had been lowered considerably and many growers who were located relatively near the markets and had moderate transportation costs found even the low prices for fruit yielded some margin over cash expenses of production. For many producers far distant from market the situation during the 1932-33 season is proving even worse, or at least no better, than during the two years preceding. In these areas transportation costs are such a large proportion of the total production and marketing cost that savings in expense, such as for labor, spray material, and machinery, are of relatively minor importance.

In the better portions of those sections close to market centers there has been, as yet, little or no abandonment of orchards and neglect has not been serious. In sections more distant from the large markets there has been some abandonment and neglect of certain fruit crops. How long present conditions will

continue will depend on the future course of the depression and the adjustments necessitated in production, transportation, and marketing costs. If present conditions continue for some time, tree neglect, removal, and abandonment may become general, thereby reducing the potential producing capacity in the fruit industry and thus reducing supplies. Even though business conditions should improve materially in the near future, efforts of European countries to expand and modernize their fruit industries will mean that the expected increasing supplies of those fruits of which there is an export surplus in this country will meet with increasing competition from foreign sources. This suggests the continuation of difficulties in the marketing of large fruit crops in this country.

CITRUS FRUITS

The outlook is that orange and grapefruit production will continue to increase and that there will be continued keen competition among the various producing areas, particularly among those areas that market during the winter. The combined production of oranges and grapefruit has increased tenfold during the last 40 years and has been increasing at an average rate of about 6 per cent per year during the last 10 years. In the continental United States about 759,000 acres are devoted to the production of oranges and grapefruit. About 25 per cent of the trees have been set 5 years or less and are normally not of bearing age. Of the remaining 75 per cent that are over 5 years old, many are yet too young to produce fruit in paying quantities. The bearing lemon acreage is expected to remain for a few years at about the same level as in the last 10 years. Thereafter a moderate increase is expected owing to plantings of the last few years.

Many of the recent citrus plantings have taken place in relatively new areas and there is little evidence upon which to base an estimate of the probable production from that part of the total plantings that will remain for production 15 or 20 years hence. Production from groves now in bearing has increased to nearly 65,000,000 boxes of oranges and grapefruit combined in 1931-32, a season of below-average conditions. Condition on January 1, 1933, was below the condition on January 1, 1932, and the 10-year average for January, yet the production in 1932-33 is expected to be about 62,000,000 boxes, 48,800,000 boxes of oranges and 13,200,000 boxes of grapefruit.

Citrus prices have held up relatively well during the last two years even though there has been a marked expansion in production and increased competition from other fruits and fruit juices. With supplies of domestic citrus fruits in the 1931-32 season almost as large as in the previous year, New York auction prices averaged only slightly lower. New York auction prices of Florida oranges averaged \$3.43 per box during 1931-32 compared with \$3.54 per box during 1930-31; California Washington Navels, \$3.14 compared with \$3.54; and California Valencias, \$3.41 compared with \$3.97. Florida grapefruit averaged \$2.53 per box during the 1931-32 season compared with \$2.69 per box in 1930-31, and California lemons, \$5.09 per box compared with \$5.30.

Production of citrus fruits averaged 27 pounds per capita for the five years 1919-1923, as compared with 42 pounds, the average for 1927-1931. Orange production increased from 19 pounds in the former period to 29 pounds in the latter; grapefruit increased from 5 pounds to 9 pounds, and lemons from 3 pounds to 4 pounds. A similar comparison for the other major fruits, plus the imports of bananas, shows a slight decline from an average of 168 pounds in the period 1919-1923 to 163 pounds per capita for the period 1927-1931.

The trend in world production of oranges and grapefruit is upward, but in some countries there has been a sharp decrease in plantings during the last two years. Lemon production is about stationary or is moving slightly upward. The immediate future export outlook for citrus fruits will depend, in a large measure, upon the effect of the increased supplies, tariffs, import restrictions, depreciated exchanges, and general business conditions. The tariff barriers and depreciated exchanges in the United Kingdom and Canada are the most serious obstacles to the citrus export trade at the present time.

ORANGES

In the country as a whole there are about 547,000 acres of orange groves. Of this area, 98,000 acres are estimated to be of less than five years' standing, and 449,000 acres, or slightly more than four-fifths, five years old or older and of bearing age. Barring severe loss of acreage from freezing, the upward trend

in production which has been apparent during recent years may be expected to continue. In California about 12 per cent of the 234,000 acres in oranges is estimated to be below bearing age. There are about 99,000 acres of Washington Navel, the variety that competes with southeastern oranges; of these about 95 per cent are estimated to be of bearing age and probably nearing their peak of production. The California acreage of Valencias, most of which are marketed from May to October, is 131,000, of which about 82 per cent are of bearing age. The present acreage of orange trees in Florida, including tangerines and Satsumas, is around 268,000 acres, about 15 per cent of which are not of bearing age, while about 65 per cent are 5 to 15 years of age, and about 20 per cent are 15 years old or older and approaching full production. The Texas acreage increased nearly 9 per cent during the last year to about 25,000 acres, 65 per cent of which are not yet in bearing. Of the 9,000 acres in bearing, only a small proportion are in full bearing.

About 7.7 per cent of the 1931-32 orange crop was exported. A normal movement for a crop of this size is about 10 per cent. Exports of oranges from the United States during 1931-32 have totaled about 3,200,000 boxes against 4,900,000 in 1930-31. Canada took 75 per cent of the exports and the United Kingdom 13 per cent.

The important British outlet for oranges was restricted somewhat during the year by the adoption by the United Kingdom of a tariff on oranges. Oranges from Empire sources, notably South Africa, are permitted free entry. The duty at the present rate of exchange is about 35 cents per box from April 1 to November 30, and 10 per cent ad valorem during the balance of the year. It will discourage somewhat the importation of oranges into the United Kingdom. This will affect the United States exports during the summer orange season which runs from May through October, or when the California Valencia crop and crops of Southern Hemisphere countries, particularly Brazil and South Africa, are marketed. During the winter orange season, November through April, United States orange exports to Europe are small. In these months the only important foreign outlet for oranges is Canada. Since Canada, in June, 1931, levied a duty of approximately 70 cents (Canadian money) a box on oranges from other than Empire sources, there has been some increase in the imports by that country of oranges from untaxed Empire sources, particularly Jamaica, Australia, and South Africa. Canadian imports from the United States appear to have declined somewhat. A comparison of the prices paid for California oranges at Montreal with those at New York indicates that the tariff was mostly borne by the Canadian consumer.

The 1932-33 winter orange crop appears to be larger than last year's in most countries. The 1933 summer crop in Brazil is good and a large increase in the quantity available for export is expected. Reports from South Africa indicate considerable drought injury to the 1933 crop.

GRAPEFRUIT

Grapefruit acreage in the United States was expanded approximately 9 per cent during 1932 and about 212,000 acres are now devoted to grapefruit culture. Approximately 90,000 acres, or nearly 42 per cent, are less than five years old. Owing primarily to the rapid increase in plantings in Texas during recent years, the proportion of young trees in the United States is even larger than it was 10 years ago.

In Florida there are about 95,000 acres of grapefruit, about 90 per cent of which have been planted 5 years or longer, but less than two-fifths, 15 years or longer. The California acreage is reported at 17,000, of which about 5,000 acres are not yet in bearing. Texas, with an increase of nearly 12 per cent during last year, is now estimated to have approximately 86,000 acres in grapefruit, more than three-fourths of which are not yet of bearing age and practically none approaching full production. Plantings of grapefruit in the lower Rio Grande Valley of Texas have mounted rapidly during recent years. From 1924, when around 275,000 trees were set, plantings increased steadily up to a peak in 1929 when 1,319,000 new trees were set. Some curtailment was made in expansion during the next two years with 716,000 and 763,000 trees set in 1930 and 1931 respectively. In 1932 new plantings again exceeded the million mark with 1,093,000 trees. Arizona, with an estimated acreage of 14,000, has only about 29 per cent in bearing.

The canning of grapefruit apparently increased nearly sevenfold during the period 1925-28 to 1930-31, but dropped off sharply in 1931-32. From the

1925-26 crop the equivalent of about 400,000 cases of 24 No. 2 cans of grapefruit hearts were packed. During the 1930-31 season the pack amounted to about 2,712,000 cases and from the 1931-32 crop slightly more than 907,000 cases were packed. Comparative figures on the pack of juice are available only for the last two years. In 1930-31 there were 412,000 cases of grapefruit juice packed and in 1931-32 the pack was nearly 248,000 cases.

About 7.4 per cent of the 1931-32 grapefruit crop was exported, as compared with about 7.5 per cent, the average for the preceding five seasons. In the 1931-32 season the United Kingdom took about 57 per cent, and Canada about 40 per cent of the exports, as compared with an average of 58 per cent for the United Kingdom and 36 per cent for Canada during the preceding five seasons. During last year the United Kingdom adopted a tariff on grapefruit even higher than that on oranges. At the rate of exchange in January, 1933, the tax amounts to 50 cents a box from April through November. During the remainder of the year the rate is 10 per cent ad valorem. Empire grapefruit is admitted free. At prices that have prevailed during recent years the rate is higher from April through November than during the remainder of the season and is effective when the United States shipments to the United Kingdom are the heaviest. It will affect the late and early Florida shipments and the summer Puerto Rican and southern California shipments. Empire grapefruit offers year-round competition to the American product. South Africa markets grapefruit in the United Kingdom from spring to fall, and Jamaica and other British Caribbean countries during the winter. Canada also admits Empire grapefruit free, whereas the United States product must pay a duty of 1 cent (Canadian currency) a pound, net weight. This tariff preference in these two major grapefruit markets has stimulated grapefruit plantings in British countries, particularly in the British West Indies. In one respect the export outlook for grapefruit appears to be more encouraging than that for oranges since per capita consumption of this fruit is very small in Europe, and there appears to be a possibility for a large increase in consumption. Shipments to the United Kingdom during the last half of the 1931-32 season were much below those for the corresponding part of the preceding season. This decline may be attributed in part to the British duty. Although Canada imported more grapefruit from the United States in the 1931-32 season than in the preceding season more fruit was also received in Canada from untaxed Empire sources, particularly Jamaica.

The world crop of grapefruit for 1932-33 is small. However, the weak world demand conditions appear to be preventing the rise in prices which would normally result.

LEMONS

Lemon production in the United States is confined almost entirely to California. The acreage devoted to lemon culture in that State has changed little since 1921. In 1932 there were nearly 47,000 acres of lemon groves in California, about 11 per cent of which were not of bearing age. No material change in the trend of production is indicated for the next few years but some increase is probable thereafter, owing to plantings of the last few years. The indicated 1932-33 California lemon crop is 7,000,000 boxes, or about 10 per cent less than the crop of 1931-32.

The large Italian lemon crop forecast for the 1932-33 season indicates that world supplies during the season will be somewhat above average or around 24,000,000 boxes. Since the United States market is protected by a tariff of 2½ cents a pound, this should have little effect on the marketing of the California lemon crop.

Exports of United States lemons during the 5-year period 1926-27 to 1930-31 (November to October), averaged about 5 per cent of the commercial crop. During this period exports to Canada amounted to about 75 per cent of the total average exports of 262,000 boxes. In 1931-32 exports to Canada were 189,000 boxes, or 81 per cent of the exports.

APPLES

The apple outlook requires long-time consideration. For 20 years economic factors have been forcing an adjustment of the industry until at the beginning of the present business depression (1929) the industry was generally better equipped for the efficient production of apples than at any time in recent years. On the whole it was composed of a relatively large proportion of the

better varieties, production was almost as heavy as 20 years earlier when tree numbers were twice as great, and there was every indication that with reasonable care and tree replacements, the orchards would continue to produce for many years an abundance of apples for domestic consumption and a surplus for export.

The business depression, now three years old, is beginning to have its effect on the physical condition of the orchards. Accumulated financial burdens incident to low returns and to depletion of cash reserves for production purposes are perhaps more generally felt at this time than at any time for many years. Already there are indications that if the depression continues for several years, neglect of orchards will become rather general and eventually may result in considerable abandonment.

How far this neglect and abandonment of orchards will go will depend upon the future course of the depression. If hard times prevail for some time, and if tree neglect, removal, and abandonment should become general, the potential producing capacity of the apple industry will decline, thereby tending to reduce apple supplies. Even should business conditions improve in the near future, efforts of European countries to expand and to modernize their fruit industries, and the expected continuation of large supplies of fruits that compete with apples, suggest the continuation of difficulties in marketing large apple crops.

From 1910 to 1925 there was a net decrease of 79,000,000 apple trees in the United States. From 1925 to 1930 there was another decrease of 21,000,000 trees, making a total decrease of 100,000,000 trees, or 46 per cent in the last 20 years. But in spite of these removals, production during the last five years (1928-1932) has averaged only 7 per cent less than the average for the period, 1909-1913, and only about 20 per cent less than for the period of high production, 1914-1918. These smaller declines in production as compared with decreases in tree numbers are due to the shift from farm to commercial orchards with better locations, to better care of these commercial orchards, and to the increasing bearing capacity of many trees as they have approached or reached full-bearing age. This trend is manifest in the average yield per tree of bearing age, which increased from 1.2 bushels in the period 1908-1912, to 1.9 bushels during the period 1928-1931.

A noticeable shift to the more popular and better-paying varieties has occurred during and since the World War, resulting in the existence of many relatively young orchards that have not yet reached full bearing capacity. An apple-tree survey for 41 States indicates that in 1928, 25 to 30 per cent of the trees in commercial orchards were under 9 years of age and 65 to 70 per cent were less than 19 years old. Also, according to the census of 1930, about 24 per cent of all apple trees in the United States were not of bearing age at that time. As yet there has been no shortage of apples in years of favorable growing conditions; nor is there any immediate prospect of a shortage. In fact, commercial production, which may be more significant than total production, increased for several years to a peak of 39,000,000 barrels in the very favorable growing season of 1926. Since then it has averaged somewhat higher than for the five years previous to 1926, and the 1931 commercial crop was the fourth largest on record. It is believed that the number of young trees now in commercial orchards would maintain commercial production at a high level for several years, under conditions of average care. The extent of future neglect and abandonment of orchards, therefore, is likely to be the major factor influencing the size of the commercial crop.

A relatively large proportion of the past increase in commercial production has been of the more popular varieties. The apple-tree survey of 1928 indicated that the 10 most important apple varieties, in terms of number of trees, in order of importance were: Delicious, Winesap, Jonathan, Baldwin, Stayman Winesap, Ben Davis, Rome Beauty, York Imperial, McIntosh, and Grimes Golden. These varieties constituted about 60 per cent of the total trees in commercial orchards. Plantings of Delicious trees, 73 per cent of which were under 14 years of age in 1928, point to increasing supplies of this variety for several years. Production of the McIntosh and the Stayman Winesap varieties is expected to increase, since 60 per cent of the trees of these two varieties were under 14 years old in 1928. Another group of varieties in which there are prospects for increased production includes Winesap, Jonathan, and Grimes Golden. In 1928, 43 per cent of the trees of these three varieties were under 14 years of age. Only moderate plantings of Baldwin, Rome Beauty, and York Imperial have been made. Plantings of Ben Davis and many of the less popular varieties have declined for several years.

The following statement briefly presents the apple situation in the western, central, and eastern apple States. Further details are contained in the 1932 outlook report.

About 20 years ago, the 11 Pacific Coast and Mountain States produced 19,000,000 bushels of apples per year, whereas they now produce an average of about 56,000,000 bushels annually, an increase of about 195 per cent. At the same time the number of bearing trees increased 10 per cent, and average yield per bearing tree increased from 1.5 bushels to about 4.3 bushels. In these Western States production is now apparently close to its peak for the present cycle. In the Pacific Coast States as a group, a very small percentage of the trees are yet to come into bearing, and production is being fairly well maintained by tree resets and by an increase in producing capacity of trees due to an increase in their age. In the Mountain States as a whole production is declining.

Plantings in all of the western apple States have been very light during late years. In the better commercial areas, orchards are generally well cared for, but considerable neglect, and at least temporary abandonment, are expected if present economic conditions continue long. In other areas of this region, some of the old orchards are dead and others are far from thrifty. Low prices for apples are increasing the difficulty of western growers in marketing. Transportation charges for apples from the Northwest to distant domestic markets are now consuming a large part of apple values, making it very difficult for western growers to compete successfully with producers near the large consuming centers.

The Central States as a whole now contain about 43 per cent of all the apple trees in the United States and produce about 24 per cent of the apples. From 1910 to 1930 the number of trees decreased about 60 per cent and production decreased 42 per cent. A large part of the decrease in tree numbers came in the first half of the period, and many of the orchards now remaining are well supplied with young trees, many of which have been planted during the last 15 years. According to census figures nearly one-third of the trees in these States had not reached bearing age in 1930 and according to the survey in 1928 about 40 per cent of the trees in commercial orchards of the region were under 9 years of age.

Many of the trees removed in the Central States between 1910 and 1930 were of odd and unpopular varieties. The more recent plantings have been of the more popular varieties such as the Delicious, Winesap, Jonathan, Stayman Winesap, and Yellow Transparent. It is believed that the newer orchards of the region are more favorably located than many of the early plantings, and that the past rate of tree mortality may be reduced unless the present depression continues long enough to cause considerable neglect and abandonment. In the region as a whole the removal of old trees continues. Recent plantings have been light, and on the whole, there is no evidence at this time of material contraction or expansion of commercial orchards.

In the Eastern States, which include the New England, the Middle Atlantic and the South Atlantic States, the number of apple trees declined about 24 per cent from 1910 to 1930, and those of bearing age decreased about 17 per cent. Much of this decrease occurred in farm orchards and in poorly located commercial orchards. At the same time, production fell off about 17 per cent.

In 1930 these Eastern States had about 44 per cent of all apple trees in the United States and produced about 42 per cent of all the apples. The survey of 1928 showed that approximately 64 per cent of the apples trees in commercial orchards in the Eastern States were under 19 years of age, and the census figures of 1930 indicated that 20 per cent were yet to come into bearing. Shortly after the World War there was considerable planting of some of the more popular varieties. A decided effort to improve orchard practices and management was made in some sections. The result is that the commercial orchards in the region to-day, on the whole, are perhaps better suited to the economical production of fruit than they were 10 or 20 years ago. In the region as a whole recent plantings have been light and removals have continued at a normal rate, but there are indications that many of the orchards that have not been generally profitable are receiving less-than-average care. The nearness of many apple districts of the Eastern States to large consuming centers is encouraging to eastern producers, especially under present economic conditions.

Another factor in the apple outlook is the general fruit situation. According to available data the production of oranges, grapefruit, peaches, pears, and

grapes, together with the imports of bananas, increased 52 per cent from 1919 to 1932 and amounted to 7,488,000 tons in 1932. The Hawaiian pineapple pack nearly doubled from 1924 to 1931, and for the latter year amounted to 12,726,291 cases. These tremendous increases in competing fruits have undoubtedly added to the difficulty of disposing of large apple crops.

During the last three years there has been a steady decline in apple prices to growers, owing largely to the rapid shrinkage of consumer purchasing power, some reduction in foreign demand, and the decline in commodity prices. The average farm price per bushel of apples on December 15, 1930, was \$0.99; on December 15, 1931 about \$0.85; and on December 15, 1932, \$0.62.

Since 1929 the cost of some factors of production has declined, as roughly indicated by the following: In the fall of 1932 farm wages in the United States were 52 per cent less than in the fall of 1929; fertilizer prices to farmers were 25 per cent less; prices of barrels 25 to 40 per cent less; of boxes about 20 per cent less; and the general index of machinery prices to farmers was 9 per cent lower than in 1929. The average wholesale price at New York of powdered lead arsenate decreased 14 per cent during the three years 1929-1932. On the other hand, the wholesale price of lime-sulphur solution at New York increased 7 per cent during the same period, and prices of powdered and paste Bordeaux mixture increased 13 and 20 per cent, respectively. In general, transportation charges for rail shipments of apples have remained about stationary during the last three years.

In the five seasons 1926-27 to 1930-31, apple exports from the United States have averaged 16,480,000 bushels, or one-sixth of the total commercial crop. About one-seventh of the commercial barreled apple crop (including apples in baskets) and one-fifth of the commercial boxed crop were exported during this period.

As far as quantity is concerned, exports during the first six months of the 1932-33 season have been about normal, or a little below normal, for the size of the crop. These exports have amounted to the equivalent of 8,800,000 bushels, or 10.4 per cent of the commercial apple crop. This compares with 9.6 per cent of the 1931-32 crop and 12.4 per cent of the 1930-31 commercial crop exported in the corresponding months of those seasons. Prospects for the second half of the 1932-33 season appear more encouraging from the supply side than they were during the first six months, as European home-grown supplies are practically exhausted. Demand, however, is still low, so that prices anything like those which, in the past, resulted from such very short apple supplies as this year's, seem very unlikely.

In the long-time export situation, world apple production outside of the United States appears to be on a slightly upward trend. This has resulted in a slight increase in the quantity of apples entering into world trade. Fortunately, there has been an increase in the demand for apples, which has tended to offset the increased world supplies. On the other hand, the policy of protecting home industries has made rapid strides in recent years in many of the chief importing countries. This policy has led to trade-restrictive measures designed to protect home industries. The future of the United States apple-export trade will depend to a large extent on the success achieved in stimulating production in foreign countries. Any large diminution in apple exports will adversely affect the future of the American apple industry.

The restrictions of foreign outlets for American apples by embargo, quota, and sanitary regulations, make it absolutely necessary for apple growers and American exporters to see that only sound fruit of the better grades is exported.

PEACHES

A declining trend in the number of bearing peach trees in the Southern States and in California is indicated. For most other sections no pronounced changes in the number of bearing trees are anticipated. However, the upward trend in production in Colorado is expected to continue for several years. In the country as a whole very few trees have been planted in the last few years.

The number of bearing trees in southern orchards at present does not seem excessive, if material improvement in market conditions occurs during the next five years. Downward adjustments in acreage may be advisable in some other sections, particularly in the Mountain and Pacific States. The rapid development of motor-truck marketing may influence some shifts in producing areas.

The planting of commercial peach trees in the South has been generally at a relatively low rate during the last five years and has apparently averaged

less than 4 per cent of the present number of trees annually. It is estimated that with good care the average life of a peach tree in the South is about 14 years. If orchards are well cared for it would therefore require plantings of 7 per cent of the present number each year to have this number of trees at the end of a 14-year period. In many important southern peach districts the number of trees removed or abandoned has exceeded the number planted in recent years. Moreover, the period of heavy planting of trees now in southern orchards was from 1921 to 1924, and these trees will be from 9 to 12 years old in the spring of 1933. Many of them will decline in productivity or go out of bearing in the next few years. Low returns in recent years have resulted in neglect of many orchards, and have tended to discourage replacement plantings, which under better marketing conditions would be taking place at a higher rate than at present. In the past serious losses to growers have resulted from planting orchards on unfavorable sites and from selecting varieties that were unsatisfactory because of competition from higher-quality varieties on the markets.

Notwithstanding the extreme smallness of the southern crop in 1932, largely caused by adverse weather conditions, there are still sufficient bearing trees in the Southern States to produce large crops under average weather conditions. Census figures show that the total number of peach trees in 11 Southern States (North Carolina, South Carolina, Georgia, Florida, Alabama, Tennessee, Mississippi, Arkansas, Louisiana, Texas, and Oklahoma), including both commercial and farm orchards, was slightly less than 32,000,000 in 1930. This was a decline of 17 per cent from the number reported in the 1925 census.

In Georgia peach production averaged 35 per cent of the crop in 11 Southern States in the 4-year period ended in 1932. Approximately 18 per cent of the trees in commercial orchards in Georgia were less than 5 years old in the fall of 1931; 49 per cent were 5 to 9 years old; 29 per cent were 10 to 14 years old, and 4 per cent were more than 14 years old. From the fall of 1930 to the fall of 1931 there was a decrease of 566,000, or 6 per cent, in the number of trees in active commercial orchards in that State, and nearly 600,000 additional trees were in orchards which were abandoned during the year ended in the fall of 1931. The number of trees planted in Georgia in 1932 has been much smaller than the number removed and abandoned. The percentage of young trees is greater in the southern district of Georgia than in the central or northern district. Twenty-eight per cent of the 4,000,000 commercial trees in the southern district of Georgia were under 5 years old in the fall of 1931, compared with 12 per cent of the 4,000,000 trees in the central district and 2 per cent of the 700,000 trees in the northern district of that State. There are more trees over 10 years of age in southern Georgia than in the other parts of the State. Plantings in the southern district of the State in the last few years have been largely Hiley and earlier-maturing varieties, such as Uneeda and Early Rose. There have been some experimental plantings in Georgia and other States of yellow-fleshed varieties that mature earlier than the Elberta.

In both Tennessee and North Carolina only about 10 per cent of the commercial trees were under 5 years old in 1930. Commercial plantings in these States have been light since 1930, and because of abandonment and neglect there has been some decrease in the number of trees. Considerable plantings have been made in South Carolina in recent years. In Arkansas the number of bearing trees is expected to decrease, but it is possible for the production to increase in the next few years.

In the region comprising Virginia, West Virginia, Maryland, Delaware, and the North Atlantic States no great change in the number of bearing trees is expected, but a downward trend in production is indicated for the Eastern Shore of Maryland, and in New Jersey the trend has been downward for several years. In Pennsylvania a slight increase is indicated, and there is a tendency to shift to the J. H. Hale variety.

In the North Central States, as a whole, the trend in production will probably not change much in the next few years. The census figures show practically the same number of trees in this region in 1930 as in 1925. A decreasing tendency is indicated for Illinois, whereas in Michigan there may be some increase owing to the considerable plantings made from 1927 to 1930.

In the Rocky Mountain region the Colorado production has increased rapidly, and the heavy crops of 1931 and 1932 averaged about one-third larger than the crops produced during the previous five years. The peak in Colorado

production is not expected for several years. The census figures show that the number of trees in three Northwestern States (Washington, Oregon, and Idaho) increased 7 per cent from 1925 to 1930. Plantings since 1930 have been very light. Trees planted in Washington since 1925 have been mostly of the J. H. Hale variety.

The California production of clingstone varieties, which are largely used for canning, is likely to decline considerably during the next few years. Large acreages have been removed in the last four years and practically no new plantings have been made since 1930. The acreage of clingstone varieties decreased 30 per cent from 1928 to 1932 but is still excessive for the needs of the canning industry under present demand conditions. The bearing acreage of California freestone varieties, which are used mostly for drying, has not changed much in the last few years. Only limited plantings were made in 1932.

CHERRIES

The number of cherry trees now in orchards in the 12 more important commercial cherry-producing States (New York, Pennsylvania, Ohio, Michigan, Wisconsin, Montana, Idaho, Colorado, Utah, Washington, Oregon, and California) is sufficient to maintain the upward trend in production, evident since 1924, for at least another five years, provided losses and abandonment of trees are no greater than would normally take place. From 1920 to 1930 the total number of cherry trees increased about 17 per cent, from 8,076,000 to 9,402,000 trees. During the same period the number of farms reporting cherry trees declined approximately one-third, indicating a concentration of trees into larger units, presumably on better locations and to which better management practices could be more economically applied. More than one-third of the total trees in orchards in 1930 were then under bearing age. Plantings since 1930 have been comparatively light. Owing to heavy plantings just prior to 1930, however, orchards were well stocked with young trees that will increase in bearing capacity for several years to come.

These facts and the lack of any indication of excessive abandonment or neglect during the exceptionally low-price years 1931 and 1932, average production of cherries during the next five years may be expected to exceed the average for the last 5-year period. Over a period of years, better returns than those of 1931 and 1932 depend primarily on periodic short crops and improvement in the general economic condition, which may result in a better demand situation than has prevailed during the last two years.

No separation of sweet and sour varieties is made in the census enumeration of trees nor in the estimates of production; however, surveys show that the majority of the cherry trees in the States east of the Rocky Mountains are of sour varieties, which constitute about 95 per cent of the trees in Michigan and fully 87 per cent in New York. The majority of the trees in Wisconsin, Pennsylvania, Ohio, Montana, and Colorado are of sour varieties.

In these seven States combined the total tree numbers have varied but little for the last 20 years, but there has been considerable shift in the producing area within the States. This shift is manifest in the tendency toward concentration of trees in certain counties and the increase in the average size of orchards. In 1910 the average orchard contained, roughly, 14 trees; in 1920 about 16 trees. In 1930 the number of trees rose to 26.

Plantings since 1930 have been light, in most instances probably but little more than sufficient for replacement purposes. At the same time there is little evidence of extensive neglect or abandonment of orchards in commercial areas as a result of the low prices received during 1931 and 1932. The long-time outlook, therefore, is for an increasing total production for several years, even though no additions are made to the present stand of trees.

Sour cherries are utilized, for the most part, for canning and cold pack. At the beginning of the 1932 packing season operators were still carrying heavy stocks, particularly of cold-pack cherries, from the large pack of 1930 and owing to the depressed business conditions, there was very little opportunity to dispose of these old stocks and the 1931 pack at profitable prices. As a result, some canners were reluctant to finance another large pack in 1932 despite the very low prices at which the large crop was moving. So the 1932 season for red sour cherries slipped by with apparently the smallest pack in recent years. If the remaining old stocks and the light 1932 pack are cleaned up before the 1933 season, it is possible that the demand for red sour cherries for canning

and cold pack during the 1933 season will be somewhat improved over that of the 1932 season.

In the States producing the bulk of the sweet cherries the long-time production outlook is much the same as that for sour cherries. In 1930, California, Oregon, Washington, Utah, and Idaho had about 3,368,000 cherry trees, which represented an increase of about 56 per cent over the number in 1920. Only about 62 per cent of the trees in orchards in 1930 were then of bearing age, compared with 75 per cent of the 2,156,000 trees reported in the census of 1920. Plantings since 1930 have been light in the Western States, but there is some indication that plantings of sweet cherries are being made in some Eastern States within trucking distance of large cities and where retail sales can be made through roadside stands. With about 38 per cent of the trees in orchards in 1930 not of bearing age, and with but little abandonment or neglect during the last two years, it would appear that, barring abandonment or unusual loss from weather and diseases, the trend of production during the next few years will continue upward.

Although production in the principal sweet-cheery States was 53,752 tons in 1932, car-lot shipments amounted to but 2,067 cars which, even allowing for increased truck movement, was the smallest shipment for a similar-sized crop since 1921, and the farm price in 1932 reached the lowest point since the beginning of the Bureau of Agricultural Economics price record in 1924. Under better business conditions in the consuming markets than prevailed in 1931 and 1932 it has been possible in most years to market larger quantities of cherries at higher prices.

Although in the three Pacific Coast States the 1932 pack of sweet cherries, about 423,000 cases of all sizes, was nearly one-third larger than the 1931 pack of 321,000 cases, it amounted to only about 45 per cent of the large pack of 928,000 cases put up in 1930. Stocks of canned Royal Ann and black cherries in Washington and Oregon on December 27, 1932, were 22,141 cases of all sizes. This is about 7 per cent less than the stocks in December, 1931, and about 62 per cent less than the holdings in December, 1930.

STRAWBERRIES

Preliminary estimates indicate that the 1933 commercial strawberry acreage for picking will be comparatively large for the United States as a whole. It will be 5 per cent greater than the 1932 acreage and only 1 per cent less than the record acreage of 1928. Plantings have been increased to some extent over those of 1932 in the second-early and intermediate States; no appreciable changes in acreage have been made in the early and late groups of States; a slight reduction of acreage has been made in the Pacific Coast and Mountain States.

For the country as a whole, the 1932 commercial strawberry acreage was above average and the yield per acre exceeded that of any other year since 1926, with one exception, 1931. With both yield and acreage above average, the 1932 crop was the largest on record. With production high, with the quality of southern berries generally poor, and with the buying power of consumers low, average prices for the country as a whole were much lower in 1932 than in any of the previous 15 years and 44 per cent below the average price for the 5-year period 1927-1931.

Based on average yield per acre of the last five seasons, 1928-1932, the indicated acreage for 1933 would produce a crop almost as large as that of 1932. If weather and growing conditions are more nearly normal, however, an improvement in quality of the crop may be expected, resulting in a more favorable marketing situation. The generally poor quality and condition of the berries in the spring of 1932, after the mild winter and severe March freezes, were an important factor in the low prices received.

In the early-shipping States (Florida, Louisiana, Alabama, Mississippi, and Texas), preliminary reports indicate 46,400 acres for picking in 1933. This is about the same as the peak acreage of 1932. In these early States acreage expansion has been especially marked since 1919, having increased from 7,090 acres in 1919 to 46,560 acres in 1932. Much of this increase occurred before 1923, but from 1923 to 1932 the acreage of the early States nearly doubled. The largest acreage increase from 1923 to 1932 occurred in Louisiana and amounted to more than 15,000 acres. In this State, the 1933 acreage for picking is 3,500 acres less than the acreage of 1932, a reduction of about 12 per

cent. The Florida acreage reached a peak of 9,100 acres in 1931, then declined to 8,100 acres in 1932, but has increased to 11,200 acres for 1933.

Strawberry prices in these early-shipping States were fairly well maintained at relatively high levels until 1932 when, partly because of poor quality, they were the lowest on record, being about 33 per cent lower than the prices of the previous year (1931). The low price, and a low yield per acre which was 28 per cent less than the exceptionally good yield of 1931, resulted in a farm value for the 1932 crop little more than one-half of the value of the 1931 crop. The 1933 strawberry-shipping season has opened in Florida with prices slightly lower than in 1932, although shipments are lighter.

In the second-early States (Arkansas, Georgia, North Carolina, South Carolina, Tennessee, and Virginia) largely because of increased plantings in Tennessee and Arkansas, the 1933 acreage for harvest is expected to be about 15 per cent larger than the 1932 harvested acreage, but substantially below the large acreage in 1924, 1928, and 1929. The indicated acreage for harvest shows an increase in Arkansas of 4,100 acres; in Tennessee of 3,000 acres; and in Virginia of 650 acres. A decrease of 1,000 acres is indicated for North Carolina.

Although the 1932 harvested acreage in these second-early States was almost 50 per cent greater than the small 1931 acreage, yields were lower in 1932, and production was only about 22 per cent greater than the 1931 production. Partly because of poor quality of berries, prices to growers in 1932 were the lowest in years and about 35 per cent lower than the 1931 prices.

In the intermediate States (Missouri, Kansas, Illinois, Oklahoma, Kentucky, Delaware, Maryland, and New Jersey) preliminary estimates for 1933 show an increase of about 10 per cent in the strawberry acreage above that of 1932. Acreage for picking in these States reached a peak of 64,040 acres in 1927 and then declined to 33,690 acres in 1931. Since then it has been increasing and the 1933 acreage for harvest is estimated at 50,800 acres. Increases in acreages over those of 1932 are most pronounced in Maryland, Kentucky, and Illinois. The Missouri acreage is slightly below that of 1932.

The 1932 acreage for harvest in the intermediate States as a whole was about 37 per cent larger than that of 1931. With the largest average yield per acre since 1926, production in 1932 was about 85 per cent larger than the small crop of 1931. Prices to growers were the lowest in years. For the intermediate group of States as a whole, the 1932 price averaged 44 per cent less than the price of 1931.

Indications on the prospective 1934 acreage are available for only four States. In Arkansas, Missouri, Tennessee, and Kentucky, which grew 56 per cent of the combined acreage in the second-early and intermediate States in 1932, tentative indications on the acreage that growers in these States now expect to have for picking in 1934 point to a total planting substantially larger than the 1932 harvested acreage and only slightly larger than the acreage estimated for picking in 1933. Growers in Arkansas and Missouri are apparently planning for larger plantings for the 1934 season than were made for either 1932 or 1933. In Tennessee and Kentucky, however, the present evidence points to an acreage for 1934 somewhat smaller than the 1933 acreage but materially above the 1932 acreage.

In the late States (Indiana, Iowa, Michigan, New York, Ohio, Pennsylvania, and Wisconsin) the 1933 commercial acreage for picking is slightly in excess of the high acreage of 1932. Although strawberry acreages for harvest in these late States have changed but little during the last decade, yield per acre and production were relatively high in 1931 and 1932. With the low purchasing power of consumers, the average price to growers in 1932 was 32 per cent below that of 1931 and was only 45 per cent of the average price for the previous five years, 1926-1930.

In the Pacific Coast and Mountain States about 24,500 acres are indicated for picking in 1933. This acreage has been exceeded in only one year (1932), but is only about 7 per cent larger than the average acreage harvested from 1927 to 1931, inclusive. Most of the production from these Western States is sold to local processing plants and for consumption as fresh fruit in western markets. Yield per acre in these States was unusually high in 1932 and production was the largest on record. Prices to growers were exceptionally low, being less than 50 per cent of the average price for the previous five years, 1927-1931.

The quantity of strawberries used in the cold-process pack in the Pacific Northwest increased from 5,000 tons in 1926 to 14,000 tons in 1928; declined

to 7,600 tons in 1930; and was 12,000 tons in 1931. Although no statistics are yet available for the 1932 pack, the indications are that the quantity used for cold packing was 10 to 15 per cent less than in 1931.

The commercial canned pack of the Pacific Northwest reached its peak in 1927, when 4,400 tons of strawberries were canned. In 1928 the pack was 1,650 tons; in 1929, 2,500 tons; in 1930, 1,330 tons; in 1931, 1,530 tons. Estimates of the quantity canned in 1932 indicate a decrease of 20 per cent below that canned in 1931, or the smallest quantity since 1921.

Similar data regarding quantities of strawberries used in canning and cold packing are not available for other sections of the country.

CANTALOUPE

The total acreage of cantaloupes in 1932 was 134,970 acres, which was 2 per cent below the 1931 acreage but 23 per cent above the average acreage of the previous five years. Most of the decrease in 1932 occurred in Imperial Valley, Calif., where acreage dropped nearly 6,000 acres below that of 1931. An increase of over 2,000 acres occurred in the intermediate plantings, chiefly in New Mexico and Maryland, and an increase of nearly 1,000 acres in the late States, largely in Michigan and New Jersey. The second-early areas made little change in acreage.

In 1932 the average yield per acre for the entire country was slightly below the low yield of 1931 and 12 per cent below the average of the previous five years. Prices to producers in 1932 averaged 17 per cent below those of 1931 and 30 per cent below the average 1930 prices. In the decline from 1929 prices, however, cantaloupes have fared slightly better than has the average of all fruit and vegetable prices.

Imperial Valley, which produces nearly all of the early cantaloupes, reduced its acreage to 45,750 in 1932; this was 11 per cent below the acreage of 1931, although still about 17 per cent above the average of the preceding five years. Yields were about 10 per cent below the average of recent years, but the price per crate was about the same as in 1931. Compared with prices of other farm products, Imperial Valley cantaloupe prices were fairly high and, in the past, the acreage has responded quickly to such prices.

The second-early areas had 47,700 acres of cantaloupes in 1932, located mainly in sections of California other than Imperial Valley, and in Arizona and Texas. The total acreage was about equal to the large 1931 acreage but there was considerable shifting among areas. Arizona decreased by 1,300 acres and Texas by 4,230 acres, whereas California increased 2,500 acres. Yields were nearly equal to those of 1931 but were about 21 per cent below the 1926-1930 average. Prices to growers averaged nearly 40 per cent below the 1931 price.

The intermediate States produce less than one-half as many cantaloupes as does either of the two earlier areas. During the last three years the intermediate acreage has been increased from 1,000 to 2,000 acres each year; it reached a total of 21,770 acres in 1932. Maryland, Indiana, New Mexico, and Delaware have the largest acreages. The recent increases have taken place mainly in Maryland and New Mexico. Yields per acre in the intermediate group were about 10 per cent higher than in 1931 but about equal to the average yield of the five years preceding. Prices to producers averaged 12 per cent below the low 1931 prices.

The late States had 19,420 acres of cantaloupes in 1932, or about 4 per cent more than the 1931 acreage, which was about equal to the average of the preceding five years. Of this acreage, about 86 per cent was in Colorado, New Jersey, and Michigan. Yields per acre were 5 per cent above those of 1931 but 10 per cent below the average of the previous five years. The growers' price per crate averaged 22 per cent below the 1931 price.

WATERMELONS

The commercial acreage in 1932 was only 2 per cent below the 1931 record acreage of 238,820 acres, but the yield per acre in the early and second early States was the lowest in years and production was about 20 per cent less than in 1931. Total car-lot shipments were about 40 per cent less than in 1931 and lower than during any recent year. Prices to growers were about 20 per cent below the low 1931 price and, with production reduced, total returns to growers were about 43 per cent less than the low returns of 1931.

The early acreage in Florida and California in 1932 was about 6 per cent smaller than in 1931, but the yield per acre was below average and production in 1932 was 31 per cent less than in 1931. Prices to growers in 1932 were especially low, and in California it was estimated that about one-fourth of the crop remained unharvested because of low returns. The 1932 watermelon crop in the early States brought growers less than 50 per cent as much as did the 1931 crop.

Acreage in the second early States (Georgia, Texas, North Carolina, South Carolina, Alabama, Mississippi, and Arizona) was only 2 per cent smaller in 1932 than in 1931, and only about 4 per cent below the 1930 record acreage. The yield per acre was the lowest in years and the 1932 production was about 27 per cent less than in 1931. Prices were extremely low, and about one-fifth of the marketable production was not harvested because returns were not even sufficient to pay transportation costs. As both yields and prices were low, returns to growers in these second early States were very low.

Late watermelon acreage in Arkansas, California, Colorado, Delaware, Illinois, Indiana, Iowa, Maryland, Missouri, Nevada, New Jersey, Oklahoma, Oregon, Virginia, and Washington was about the same as in 1931. The yield per acre was slightly better than the rather favorable 1931 yield and production was the highest on record. Returns to growers in these late States were 22 per cent less than in 1931, but were relatively better than returns to growers in the early and second early States.

Watermelons are a bulky product and transportation costs comprise a high proportion of the delivered cost of the melons in consuming markets. In 1932, with unemployment large and with purchasing power of urban buyers at the lowest level in years, watermelon prices fell sharply from the level of recent years. As compared with gross returns to growers for the 1929 crop, returns in the early States fell nearly 70 per cent, in the second early States 73 per cent, and in the late States 41 per cent. The relatively favorable returns in the late States can be largely ascribed to the fact that many of the late-producing districts are close to consuming markets and thus have a smaller outlay in transportation expense.

DRY BEANS

The 1932 bean production of 10,095,000 bags of 100 pounds each was 22 per cent less than the average for 1929-1931. With the heavy carry-over in producing States, the total supply was about 12,000,000 bags, about 1,000,000 bags less than the average annual disappearance during the last three years. Supplies were unusually heavy during this period and prices declined steadily. Notwithstanding the smaller supply at the beginning of the 1932 crop-marketing season, prices for many classes of beans have continued to decline. The December, 1932, average farm price was 76 per cent lower than the average for 1925-1929, which shows about the same rate of decline as that for grain but much greater than for most farm commodities. The carry-over at the close of the present marketing season probably will be small unless domestic stocks are supplemented by imports. Imports will not be an important factor until domestic prices exceed the tariff of 3 cents per pound. The acreage of beans harvested in 1932 was 28 per cent smaller than that of 1931 with about the usual proportion among classes. With no unusual abandonment and with average yields, such an acreage in 1933 would produce only about 9,000,000 bags, 4,000,000 bags less than the apparent average annual disappearance of 13,000,000 bags during the last three years. However, this heavy disappearance was associated with very low prices and in considering any increase in acreage in 1933 growers will doubtless bear this fact in mind.

The smaller production in 1932 was due to a marked reduction in acreage in practically all important bean-producing States. Higher average yields per acre, particularly in Michigan, offset to some extent the reduced acreage and resulted in an abnormally heavy production of Pea beans. On the other hand, low yields combined with reduced acreage in the Rocky Mountain States resulted in the lowest production of Pintos since 1922, and the lowest production of Great Northerns since 1926. The new-crop supply of beans was not apportioned among the different commercial classes in accordance with the usual requirements, but the relatively heavy carry-over of some of the classes, particularly Great Northern, Pinto, Blackeye, and Baby Lima, tends to bring the supply of each class more nearly in line with the usual annual disappearance.

Primary railroad-car loadings during the first four months of the crop-marketing season beginning September 1, 1932, indicate that the rate of movement from producers' hands has been somewhat below the average. However, the quantity consumed this year should be considerably larger than the 10,095,000-bag crop of 1932, so the carry-over of nearly 2,000,000 bags in producing States on September 1, 1932, will be greatly reduced by the end of the present marketing season.

Imports and exports of beans during the first three months of the crop-marketing season beginning September 1, 1932, were the lowest for that period during any of the last 10 years. There were net exports of 10,000 bags during this 3-month period, compared with net exports of 32,000 bags during the same months in 1931 and net imports of 98,000 bags during the same months of 1930. During the crop-marketing season September 1, 1931, to August, 1932, there were net exports of 72,000 bags, compared with net imports of 508,000 bags in 1930-31. The chief sources of imports so far this season have been Italy, Chile, Japan, and Hong Kong.

PEA BEANS

A 22 per cent reduction in the 1932 acreage harvested in Michigan, mostly Pea beans, was more than offset by greatly increased yields per acre. As a result, the total production of Pea beans in all States was estimated at 4,631,000 bags compared with 3,738,000 in 1931 and 2,838,000 in 1930. An average yield on an acreage equal to that of 1932 would produce about 3,500,000 bags, or about 200,000 bags more than the average for 1929-1931. The car-lot price, f. o. b. shipping point in Michigan, declined from \$2.05 per 100 pounds on September 1, 1932, to \$1.30 per 100 pounds on January 11, 1933, compared with a decline during the same period of the preceding year from \$3.70 per 100 pounds to \$2.05. With greatly increased supplies and lower prices, Pea beans have regained their former lead in consuming markets of the eastern half of the United States.

GREAT NORTHERN

The 1932 crop of Great Northern beans was greatly reduced from that of the preceding year as a result of about a 40 per cent reduction in acreage harvested. The total production of 1,126,000 bags was slightly more than one-half that of each of the years 1930 and 1931. The carry-over on September 1, 1932, was estimated at 488,000 bags, which made the total supply still 18 per cent less than the average annual production for the three years 1929-1931, but 66 per cent greater than the average production during 1924-1928. The trend of prices for Great Northern beans, f. o. b. shipping points, followed closely that for Pea beans until November 1, 1932. During that month prices for Great Northerns showed an upward trend and since that time Great Northerns have been quoted 5 to 20 cents per 100 pounds higher than Pea beans f. o. b. shipping points in producing States.

PINTO

The relatively small production of 753,000 bags of Pinto beans in 1932 is enabling growers and shippers to clean up the carry-over which has been an oppressive factor in the Pinto bean market for three years. This unusually low production is due to a 48 per cent decrease in the bean acreage in Colorado, largely because of drought, together with abnormally low yields in both Colorado and New Mexico. The new-crop supply of Pinto beans was supplemented by a carry-over of 267,000 bags on September 1, 1932. An average yield on the 1932 acreage would produce about 1,400,000 bags, the same total as that of 1931 and somewhat greater than the average for 1924-1928. Following the continued decline in prices during the movement of the 1931 crop, prices for Pinto beans advanced in August, 1932, with the first indication of a short crop. Prices f. o. b. shipping points September 1, 1932, were \$2.35 per 100 pounds, and on January 11, 1933, were \$2.25, compared with \$2.15 September 1, 1931, and \$1.95 January 11, 1932.

RED KIDNEY AND DARK RED KIDNEY

The 1932 crop of 356,000 bags of Red Kidney and Dark Red Kidney beans was 42 per cent smaller than that of 1931 but slightly greater than that of 1930 and about one-half as large as the average for 1924-1928. The produc-

tion of Dark Red Kidneys in Michigan was about 12 per cent larger than in 1931 and 23 per cent larger than in 1930. Although the carry-over in September 1, 1932, was relatively heavy, a slight advance in prices of both Red Kidney and Dark Red Kidney beans during the late summer of 1932 has been maintained. Prices for Red Kidneys f. o. b. shipping points January 18, 1933, were \$2.40 per 100 pounds in New York and \$2.05 in Michigan.

LIMA AND BABY LIMA

There was a reduction of about 20 per cent in the 1932 crop of Limas and about 50 per cent in that of Baby Limas, from crops in 1930 and 1931. The production of 872,000 bags of Limas and 322,000 bags of Baby Limas was slightly less than the average for 1924-1928. Prices for Limas f. o. b. San Francisco were \$4.80 per 100 pounds September 1, 1932, and \$4 on January 11, 1933. There was also a net decline in prices of Baby Limas during the same period, from \$3.80 to \$3.30 per 100 pounds.

BLACKEYE

The 1932 crop of Blackeye beans was only 275,000 bags, compared with 459,000 bags in 1931; 852,000 bags in 1930; and an annual average of 381,000 bags for 1924-1928. Supplemented by the carry-over, the total supply in 1932 was 477,000 bags, compared with 655,000 in 1931, and 876,000 in 1930. Prices f. o. b. San Francisco advanced from \$2.85 on September 1, 1932, to \$3.15 on January 11, 1933.

PEANUTS

Returns to growers from the 1932 crop of peanuts harvested for nuts were even lower than returns from competing cash crops. However, smaller cash outlays are required for peanuts than for other cash crops and this may result in a 1933 acreage about as large as that of 1932. Prospective increases in the Southeast and Southwest seem likely to be about equal to decreases in Virginia and North Carolina. The 1932 yield per acre was low and the production of 1,002,080,000 pounds was about 7 per cent less than the large crop of 1931. But the 1932 crop is the second largest, excluding the World War period, and exceeds the average annual production for the five years ended with 1930 by about 190,000,000 pounds, or about 24 per cent. Although prices to growers during the 1931-32 season were the lowest in years, the acreage of peanuts harvested for nuts in 1932 was about 13 per cent above the acreage of 1931, the largest since the World War.

Acreage in 1932 was increased over that of 1931 in each of the important producing States, except in Virginia where a decrease of 8 per cent was reported. Yields in 1932 were low in most States and unfavorable weather adversely affected the quality of the crop. Prices for the 1932-33 season, up to January 15, 1933, for new-crop peanuts, averaged more than 20 per cent lower than during the corresponding months of the preceding season and with reduced production, returns to growers have been still less than the low returns of the 1931 crop.

The 1931 crop was the largest since the World War and the carry-over of old-crop peanuts in the producing areas at the beginning of the current marketing season was considerably larger than the relatively small carry-over at the beginning of the 1931-32 season. Storage holdings in Chicago, the principal receiving market, at the beginning of the 1932-33 season, were slightly smaller than at the beginning of the 1931-32 season and amounted to less than 30 per cent of the large holdings of the 1930-31 season. Consumption of peanuts and peanut products during last season increased over the level of recent years.

In Virginia, North Carolina, and Tennessee, which produce principally Virginia-type nuts, the 1932 acreage was less than 1 per cent below the 1931 acreage, but yields in Virginia and North Carolina were much below the favorable yields of 1931, so the crop is about 15 per cent smaller than that of last year. Importations of oriental peanuts, which are of the Virginia type, during the 1931-32 season were the smallest in 30 years, amounting to less than 1,000,000 pounds in terms of peanuts in the shell, compared with the previous low figure of about 10,000,000 pounds for this 30-year period. The carry-over of farmers' stock peanuts into the 1932-33 season was substantially larger than the small carry-over of the 1931-32 season but was smaller than the large carry-over of the 1928-29 season. The 1932 crop of farmers' stock Virginia-type nuts is

relatively low in quality, and prices to growers are only slightly above average prices received for farmers' stock Spanish-type nuts in the Southeast and Southwest. Owing to weather damage there is a shortage of peanuts suitable for roasting in the shell and the largest size of cleaned peanuts in the shell are, for the first time on record, bringing substantial premiums over the largest size of Virginia shelled peanuts. Prices of Virginia-type farmers' stock peanuts to January 15 are 30 per cent lower than prices to the same date last season, and about 67 per cent lower than the average prices for the corresponding period of the five seasons ended January 15, 1932.

In the southeastern group of States (Georgia, Alabama, Florida, South Carolina, and Mississippi), where both Spanish and runner types are grown, the 1932 acreage was the largest but one on record, being about 19 per cent greater than the 1931 acreage, but the yield per acre was low and notwithstanding the large acreage the 1932 crop is about 7 per cent under the 1931 crop. The carry-over of old-crop peanuts in these States was reported to be about the same as the small carry-over of the 1931-32 season. Prices of southeastern farmers' stock peanuts up to January 15 were 15 per cent lower than prices up to the same date last season and about 65 per cent lower than the average prices for the corresponding period of the five seasons ended January 15, 1932.

In the southwestern States (Texas, Oklahoma, Arkansas, and Louisiana), where the Spanish type is grown, acreage was increased in 1932 and with yields above average the crop is about 19 per cent above the 1931 crop. Unfavorable weather conditions during harvest adversely affected the quality of the crop in some sections. The carry-over of old-crop peanuts into the present season was negligible. Prices of farmers' stock peanuts up to January 15 were 35 per cent lower than prices to the same date last season, and about 63 per cent lower than the average prices for the corresponding period of the five seasons ended January 15, 1932.

In addition to the peanuts gathered for the nuts about 730,000 acres of peanuts were grazed or hogged-off by livestock in 1930 and in 1931, and about 820,000 acres were so utilized in 1932. In view of the increase of about 10 per cent in the number of pigs saved in the southern States from the fall farrowings of 1932, and the probable further increase of about 6 per cent in farrowings this spring, some additional enlargement of the acreage of peanuts intended for grazing and hogging seems probable.

COTTON

The world supply of American cotton for 1932-33 is now estimated to be only slightly less than the record supply of 1931-32 and is more than twice the world consumption of American cotton during 1931-32. Reports on foreign-production prospects received up to mid January indicate that 1932-33 production outside the United States will be about 900,000 bales larger than in 1931-32, but will be the smallest, with the exception of last season, since 1927-28. The total supply of foreign cotton in 1932-33 will apparently be about the same as in the preceding year, because of the decrease in the carry-over of these cottons.

Domestic mill consumption from September to December, 1932, was materially above that in the like periods of 1931 and of 1930, and averaged about 75 per cent above the low point of July, 1932. Despite the high rate of production, textile stocks at the end of 1932 were much lower than at the end of any of the previous five years. The textile situation in Europe also improved during the fall and early winter, and in Japan activity continued at high levels with record quantities of American cotton being used. The estimated world consumption of American cotton during the first four months of the season was 11 per cent above that in the corresponding period of 1931-32, and was 26 per cent above that of the period August to December 1930-31.

Prices of American cotton during 1932-33 remained fairly stable from mid October to late January, and although substantially below the level reached in late August, they were, at the end of January, about 1¼ cents above the low point of June, 1932, and about the same as a year earlier. Prices of Indian cotton compared with those of American cotton were still very favorable to the use of American cotton. The small supply of Indian and the almost record supply of American cotton indicate that this situation is likely to continue during the remainder of 1932-33. During the first five months of the season exports of American cotton were higher than in either of the two previous years, and exports of Indian cotton were very small.

Supplies of American upland cotton in the United States having a staple length of $\frac{3}{8}$ inch and longer have become relatively more burdensome than has the total supply of American cotton, and as a result the decline in prices during 1931-32 was greater for the longer than for the shorter staple cotton. Judging from the quality of the cotton ginned up to December 1, 1932, the 1932-33 supply of American upland cotton of $1\frac{1}{8}$ inches and longer will be considerably larger than in 1931-32 and fully three times as large as disappearance last season. The supply of $\frac{3}{8}$ inch and longer will be twice the 1931-32 disappearance. The 1932-33 domestic supply of cotton shorter than $\frac{3}{8}$ inch in staple on the other hand will be somewhat less than last season but somewhat above disappearance in 1931-32. Domestic growing conditions in 1931 and 1932 resulted in crops of unusually long staple. Demand for the longer staples was particularly depressed, whereas the small Indian and Chinese crops and the emphasis upon low-priced goods generally resulted in a relatively strong demand for short staples.

SUPPLY

The world supply of American cotton for 1932-33 is now estimated to be 25,700,000 bales. This is only 300,000 bales less than the record supply of 1931-32 and is 2,200,000 bales greater than the large supply of 1926-27. The supply for 1932-33 is considerably larger than total world consumption in 1930-31 and 1931-32 combined, and equal to twice last season's increased consumption. The apparent supply of American cotton in the United States on January 1, 1933, was 15,800,000 bales, compared with 17,000,000 bales a year earlier. The carry-over constitutes the largest part of the total supply. At 13,000,000 bales it is 4,100,000 bales larger than the carry-over at the beginning of last season, and is larger than world consumption in 1931-32.

The 1932-33 production, estimated in December at 12,700,000 bales, is 4,400,000 bales less than the large crop of last season, and the smallest for nine years. This reduction came as a result of the smallest acreage since 1923-24 and a decrease in yield per acre to 162.1 pounds, or 20 per cent below the 1931-32 yield. Yields in 1932, however, were above the 10-year average for 1921-1930. The area harvested in 1932-33 was 37,589,000 acres, according to the December estimate, or 7.6 per cent less than that harvested in 1931-32 and 17.9 per cent below that of 1929-30. Much of this land has been planted in food and feed crops and in products for local markets. The increased acreage in food and feed crops reflects the farmers' realization that incomes from cotton could not be depended upon to purchase these supplies. Prices of alternative cash crops have given little inducement to substitute these crops for cotton.

The acreage planted to cotton in 1933 will depend in considerable part on farmers' decisions on the quantity of food and feed crops they can use or dispose of advantageously in 1933-34. In most sections farmers have large supplies of home-grown food and feed, but the increase in the number of cattle and hogs in the South during last year has increased feed requirements. Labor, fertilizer, and some other production costs are lower than in the spring of 1932. Prices of most alternative crops are much lower than they were a year ago.

Boll weevils entered hibernation in large numbers and were more generally distributed over the Cotton Belt in the fall of 1932 than for several years. Weevil damage, therefore, could easily be unusually heavy in 1933 should weather conditions be favorable to the weevils' development. In view of low incomes, farmers are not likely to spend much money in combating them.

The application of commercial fertilizer on cotton dropped 39 per cent in 1932, and has dropped 63 per cent since 1929, although the use of cottonseed for fertilizer increased somewhat. It appears evident that the use of fertilizer will again be small in 1933. From October to mid January rainfall in western Texas was lower than in any of the previous three years.

Cotton production outside the United States in 1932-33 is now estimated at 11,300,000 bales of 478 pounds, or about 900,000 bales more than last season, 600,000 bales below 1930-31, and 1,100,000 bales less than in 1928-29. The Chinese crop of 1932-33 is 600,000 bales larger than that of 1931-32; this largely explains why United States exports to China during the first five months of 1932-33 were 500,000 bales less than during the same period last season. The Indian crop for 1932-33 is also probably 600,000 bales larger, although some reports indicate a smaller increase. The total supply, however,

even with a 600,000-bale increase in production, will be no larger than the 1931-32 supply because the carry-over was much smaller. The Russian crop is estimated by the Bureau of Agricultural Economics to be about 100,000 bales larger than in 1931-32. The Egyptian crop is estimated to be 400,000 bales less than in 1931-32 and reductions are expected in Mexico and Brazil. Practically all of the increase in total foreign production this year is offset by a decrease of about 800,000 bales in the carry-over of foreign cottons.

DEMAND

World consumption of American cotton in 1931-32 was 12,300,000 bales, an increase of 1,400,000 bales from 1930-31 which occurred largely through replacement of foreign cotton by American. Consumption in 1931-32, however, was the lowest since 1923-24 except in 1930-31. With continued small supplies of foreign cotton, world consumption of American in 1932-33 may again increase but probably by a smaller quantity than last season. The estimated world consumption of American during the first four months of this season was a little over 450,000 bales or 11 per cent more than during the like period of 1931-32, according to reports of the New York Cotton Exchange. The consumption of all cotton has apparently shown little change.

Consumption of all cotton in the United States was only 4,900,000 bales in 1931-32 as compared with 5,300,000 bales in 1930-31 and 7,100,000 bales in 1928-29. This was the lowest total mill consumption recorded since 1910-11 and on a per capita basis the lowest since 1895-96. The decline from consumption in 1928-29 amounting to 31 per cent resulted from a drastic reduction in the industrial uses and exports of cotton fabrics, a marked reduction in stocks of goods in the hands of manufacturers and distributors, and a moderate decline in the consumption of fabrics in clothing and household uses.

Domestic consumption fell 43 per cent from March to July, 1932; then it rose sharply. During the first five months of the 1932-33 season, consumption in the United States totaled 2,340,000 bales as compared with 2,191,000 bales in the corresponding period of 1931-32, an increase of about 7 per cent. The increase over 1931-32 can be expected to become greater as the season advances, barring a recurrence of such an acute financial and business situation as that which depressed cotton consumption in the spring and summer of 1932. Manufacturers' stocks of goods on December 31, 1932, were the lowest for that date since data first became available in 1927, and were low in relation to unfilled orders and production.

Despite steadily declining industrial activity and consumer incomes, during most of 1931-32 the demand for cotton for clothing appears to have remained rather stable and was a major factor in maintaining cotton-mill consumption on a level somewhat above the general level of business activity. The use of cotton for clothing will probably continue to show strength and with improvement in business conditions would doubtless bring about further increases in domestic consumption. The industrial use of cotton, which declined throughout 1931-32, depends largely on the trend in production of tires and other rubber products, automobiles, bags, artificial leather, and belting.

Cotton textile mill activity outside the United States was on the whole only slightly higher in 1931-32 than in the previous season. The consumption of American cotton, however, increased by 1,800,000 bales, or 30 per cent, to 7,600,000 bales—the largest since 1928-29. A large part of this increase took place in the Orient. Consumption of American cotton in Japan alone increased more than 600,000 bales, to almost 1,600,000 bales. This made Japan the largest foreign consumer of American cotton last season. China likewise consumed record quantities of our cotton, the total for the season being almost 900,000 bales, an increase of more than 500,000 bales. The large increases in the Orient, as well as the increases in Europe, were largely the combined effects of unprecedented supplies of American and very short supplies of Indian and Chinese cottons. However, the fact that the cotton-textile industry in the Orient maintained a high rate of activity despite the world depression was also an important factor.

Cotton-mill activity in Europe was at a much lower level than in the Orient throughout the whole of 1931-32, but more particularly toward the end of the season. Textile sales in most European countries increased materially with the sharp advance in cotton prices last summer, and mill activity soon began increasing. Despite the decline in cotton prices which followed, mill activity has apparently been maintained at the higher levels. The textile situation

in Europe as a whole seems to be much better than it was in the early summer or even a year ago, although in some countries the volume of unfilled orders has decreased somewhat since late summer. Japan continues to consume great quantities of American cotton and China has been consuming large quantities of American so far this season, largely from stocks. Foreign consumption of American cotton during the first four months of 1932-33 increased 14 per cent as compared with that in the same period last season, and about 30 per cent over the like period of 1930-31, according to reports of the New York Cotton Exchange. Consumption in Europe has been only slightly higher than it was a year ago but considerably above the low levels of last summer. The Orient consumed 35 per cent more American cotton this season up to the end of November than it consumed from August to November last season, but owing to decreases of consumption in China the monthly rate has been declining since last summer.

The fact that prices of American cotton in European markets have continued low as compared to Indian prices has been an important factor influencing both foreign consumption and domestic exports. Exports of American cotton to Europe increased 816,000 bales, or 37 per cent, from August 1 to December 31, 1932, as compared with exports in the corresponding period last season. Exports of Indian cotton to Europe, on the other hand, although about 50,000 bales larger than from August to December, 1931, were 200,000 bales, or 49 per cent, less than in the like period of 1930. Total exports of Indian cotton up to the end of December were about 500,000 running bales, compared with 670,000 bales in the first five months of last season and 1,240,000 bales from August to December, 1930—decreases of 25 and 60 per cent, respectively.

PRICES

After reaching a low point in June, 1932, prices of American cotton began to rise on the strength of improvement in the general financial situation, indications that the crop would be small, and increased purchases of cotton goods both in the United States and abroad. The rise was also associated with advancing prices of industrial stocks. On August 27 prices averaged 8.84 cents per pound in the 10 spot markets, as compared with only 4.76 cents at the low point on June 9. From late August to early December, however, the trend of prices was downward, reaching 5.45 cents on December 5. Since then the trend has been slightly upward and at mid-January prices in these markets were a little above 6 cents, which was close to the levels that obtained a year earlier.

The price of Indian cotton at Liverpool has averaged about 90 per cent of the price of American so far this season (1932-33) which is about the same as the average for last season, but 12 per cent higher than the average for the last 10 years. With the total supply of Indian cotton as small this season as last, and the supply of American still almost at record levels, the situation points to a continued relationship favorable to the use of American for several months to come.

STAPLE PREMIUMS AND DISCOUNTS

The decline in prices from 1930-31 to 1932-33 was greater for the longer than for the shorter staple cotton. Staple premiums and discounts continued to narrow throughout 1931-32. In August, 1932, when expressed in points they were smaller than for any yearly average for which records are available, and when expressed as percentages of the price of Middling $\frac{3}{8}$ -inch cotton they were narrower than at any time since the summer of 1928. During August and September, 1932, some increases in staple premiums occurred, along with improved business sentiment, but for staple lengths $1\frac{1}{4}$ inches and shorter these increases were lost by the middle of January, 1933. The increases in premiums for the higher grades of $1\frac{3}{8}$ -inch and $1\frac{1}{2}$ -inch cotton were well maintained through December, 1932, but during the first part of January, 1933, showed some evidence of weakness. These developments reflect the accumulation of relatively larger supplies of the longer staples than of the short staples, owing to the unusually good quality of the 1931 and 1932 domestic crops; to reduced demand for the better-quality, higher-priced textile products; and to the foreign demand for the shorter staples to substitute for Indian and Chinese cotton, supplies of which have been small.

The demand for long-staple cotton will probably continue low until the demand for fine goods and specialized industrial fabrics improves. But the

very low premiums on these cottons should encourage their use. In the domestic market, prices of Egyptian uppers and similar foreign cottons having staple lengths of $1\frac{1}{2}$ inches and longer are much higher than prices of $1\frac{1}{8}$ -inch American upland cotton. Since December, 1931, the price of Egyptian uppers at Liverpool has increased in comparison with prices of $1\frac{1}{8}$ -inch American upland cotton in the United States. In view of the short Egyptian crop it seems likely that the price of Egyptian uppers in foreign countries may continue relatively high in comparison with prices of $1\frac{1}{8}$ -inch cotton in the United States, and this would facilitate exports of American long-staple cotton.

The domestic supply of American upland cotton shorter than seven-eighths inch in staple was 798,000 bales smaller in 1931-32 than in 1930-31, despite the fact that the supply of all lengths combined increased 4,782,000 bales. The disappearance of this short cotton in 1931-32 was greater than its production in either 1931 or 1932. The disappearance of each staple length seven-eighths inch and longer in 1931-32 was less than the production of those lengths in 1931, with the result that the carry-over of each of these lengths on August 1, 1932, was larger than a year earlier. The indicated supply (arrived at by applying to the December estimate of production the percentage distribution by staple lengths of cotton ginned before December 1) of each of these longer staple lengths for 1932-33 exceeds the disappearance in 1931-32. The excess of supply in 1932-33 over the disappearance of 1931-32 is relatively greatest for lengths $1\frac{1}{8}$ to $1\frac{3}{8}$ inches, inclusive.

Cotton carried over, in the United States, on August 1, 1932, was of approximately the same high grade as the 1931 crop. The average staple of the carry-over was even longer than that of the 1931 crop. The proportion of the carry-over untenderable on futures contracts was considerably smaller than that of the 1931 crop. Reports indicate that the proportion of the 1932 crop that is shorter than seven-eighth inch is about the same as in the crop of 1931, but considerably smaller than in the three previous crops. The 1932 crop, as compared with the 1931 crop, shows some increase in production of cotton with a staple $1\frac{1}{8}$ inches, but shows considerable decreases in production of cotton with staples $1\frac{1}{4}$ inches and longer. The staple length of the crop depends to some extent upon weather, and conditions less favorable to the development of staple length might result in larger supplies of short-staple cotton, and smaller supplies of the long staples in the next year or two.

AMERICAN-EGYPTIAN COTTON

Production of American-Egyptian (Pima) cotton declined from an average of about 25,000 bales annually during the 5-year period 1926-27 to 1930-31, to an estimated production of 12,000 bales in 1932-33. Disappearance into consumption and export channels was in the neighborhood of 25,000 bales annually during the three years 1927-28 to 1929-30. Consumption and exports declined, however, to only about 16,500 bales in 1930-31 and about 12,800 in 1931-32. Exports declined from 5,100 bales in 1929-30 to only 375 bales in 1931-32. Consumption in the United States declined from 15,400 bales in 1930-31 to 12,400 bales in 1931-32 but increased 32 per cent during the first five months of 1932-33 when 8,800 bales were consumed, as compared with 6,900 bales during the first five months of 1931-32. Stocks of American-Egyptian cotton in public storage and consuming establishments on December 31 declined from 21,400 bales in 1931 to 15,400 bales in 1932.

The price of American-Egyptian cotton (grade No. 2) at New England mill points was 18.5 cents a pound on January 13, 1933, as compared with 20 cents on January 15, 1932, and 44 cents on January 11, 1929.

The demand for American-Egyptian cotton has been rather low as a result of the reduced consumption of fine cotton clothing fabrics. This reduced consumption was brought about chiefly by the depression and the competition from silk and rayon, the prices of which have been at record low levels. Egyptian Sakellaridis cotton is perhaps the most direct competitor of American-Egyptian in the United States. Competition, even between those two growths, however, seems to be somewhat limited and involves other factors as well as price. Since the tariff on long-staple cotton became effective on June 18, 1930, the price of American-Egyptian cotton in the United States has been relatively high, as compared with the price of Egyptian Sakellaridis in Liverpool, but relatively low as compared with the price of that cotton in the United States. Although the substitution of Pima for the Sakellaridis apparently has not been extensive, very abnormal conditions have existed during the last two years so

that the changes thus far evident may not truly represent the extent to which substitution might take place under more normal business conditions or over a longer period of relatively low prices of American-Egyptian.

TOBACCO

Most of the factors affecting the outlook for tobacco in 1933 are adverse. Consumption of tobacco products continues to decline, both at home and abroad, and increasing numbers of consumers have been turning to cheaper modes of consumption. In several foreign countries there have been further substitutions of domestic and colonial-grown tobacco for American leaf. Production in 1932 was reduced greatly from the level of 1931, but stocks of old tobacco increased so that total supplies at the beginning of the 1932-33 season showed only moderate declines from those of a year earlier. Some reductions in stocks may be anticipated for the 1933-34 season, particularly in the case of flue-cured and Virginia fire-cured, but it is not expected that the stocks of Burley or of the important cigar types will be reduced much if any below those of 1932-33.

Production of all types of tobacco in 1932 was 1,033,300,000 pounds, compared with 1,604,200,000 pounds in 1931, a decline of 36 per cent. The cigarette types declined 37 per cent, from 1,148,700,000 to 729,000,000 pounds, the decline in flue-cured production alone accounting for about three-fourths of this decline. The dark fire-cured types declined 33 per cent, from 190,800,000 to 127,700,000 pounds; the dark air-cured types declined 45 per cent, from 75,900,000 to 42,800,000 pounds; and all cigar types declined 28 per cent, from 187,200,000 to 134,000,000 pounds.

Auction-floor prices for the 1932 crop have differed widely for the different types. Flue-cured and Burley prices have been materially above the low prices for the 1931 crop, partly as a result of the reduced supplies of flue-cured, the smaller size and more desirable smoking properties of the 1932 crop of Burley, and increased competition among buyers for the lower grades of tobacco. Prices for Virginia fire-cured have shown considerable improvement over those of a year earlier, while prices for the Kentucky-Tennessee fire-cured types appear to have advanced slightly over the low levels of 1931-32. Prices for One Sucker have been higher than in 1931-32. For most remaining types prices appear to be as low as those a year earlier, or lower, notwithstanding the reduced production. Returns for the 1932 crop as a whole promise to be somewhat less than the low returns of the 1931 crop.

The consumption of manufactured tobacco products in the United States showed a greater decline in 1932 than in 1931, with all classes of products sharing in the decline. According to reports of the Commissioner of Internal Revenue, the rates of decline in 1932 from the levels of 1931 were about 5 per cent for manufactured tobacco (smoking and chewing combined), 8 per cent for snuff, 9 per cent for cigarettes, and 17 per cent for cigars. For all products combined the average decline was about 8.5 per cent. In the important tobacco-consuming countries of Europe the consumption in 1932 appears to have averaged from 3 to 5 per cent below that of 1931.

Any analysis of the long-time outlook for the different types of tobacco should take into account the probability that several years may elapse before total per capita consumption is materially increased, and that some of the recent shifts in consuming habits may persist even when buying power improves. The trend of tobacco consumption has been upward for many years. On a per capita basis, consumption in the United States rose from about 4.5 pounds in 1880 to about 6.6 pounds in 1929. As a rule, however, periods of depression have witnessed declines in consumption. Thus, in 1893 per capita consumption dropped to 4.9 pounds from 5.4 pounds in 1892. In 1915, when economic conditions were disturbed by the World War, consumption dropped to 5.7 pounds from 6 pounds in 1914. In 1921 consumption dropped to 5.7 pounds, although in 1918 it had reached 6.7 pounds. Present information indicates that in 1932 per capita consumption dropped to about 5.5 pounds, the lowest since 1902, which contrasts with 6.6 pounds in 1929. When depressions have been unusually severe, a relatively long time has been required for consumption to regain the lost ground. Thus, for nine years after the panic of 1893 per capita consumption was lower than in 1892. This indicates that several years may elapse before the rate of consumption again approaches the levels attained before the depression.

Some of the recent shifts in consuming habits may have important long-time effects. From 1929 to 1932 cigar consumption decreased about 30 per cent;

cigarette consumption, 13 per cent; snuff, 9 per cent; and smoking and chewing combined, about 7 per cent. Consumption of manufactured chewing tobacco has been declining for many years, and in recent years the decline has been rapid. Present indications are that the consumption of smoking tobacco in 1932 was about equal to that of 1929 and greater than in 1930. A part of this increased consumption of smoking tobacco was due to increased use of hand-rolled cigarettes, and part was probably due to an increase in pipe smoking instead of cigars and cigarettes. If individuals have switched to pipes for economy, and the necessity for such economy is of short duration, then a return to the former mode of using tobacco may be expected. But if the pipe habit is long continued, it may permanently replace a part of the more expensive forms of consumption. The depression appears to have caused some increase in the use of manufactured leaf for chewing and smoking in rural sections.

These trends in domestic consumption have their counterparts in foreign countries. Economic conditions abroad appear to have had similar effects on consumption, and a demand for cheaper leaf tobacco has arisen. This has led to increasing substitution of domestic or colonial-grown tobacco and tobacco from other countries which could be obtained at lower cost than the American types. Part of this substitution may be looked upon as a temporary expedient adopted under the stress of economic difficulties, but a part has resulted from trade restrictions, such as monopoly-control measures and protective tariffs, designed to develop a greater self-sufficiency in tobacco production. Most of the foreign countries in which tobacco acreage has been expanded in recent years have been improving the quality of production, and consumers have been turning to the new blends in increasing numbers. Should tastes for these blends become fixed, they will continue to impair the foreign demand for American tobacco.

CIGARETTE TYPES

Flue-cured Burley, and Maryland tobaccos are used mainly for the manufacture of cigarettes, smoking mixtures, and chewing tobacco. In the United States a little more than one-half the total quantity of leaf used for these products in recent years has been made into cigarettes, around one-third has been used for smoking mixtures, and about 10 to 15 per cent for chewing tobacco. A large proportion of flue-cured and Maryland tobacco is exported but most of the Burley is used in the United States. Domestic cigarette consumption in 1932 declined about 9 per cent from that of 1931, in spite of a substantial increase in sales of 10-cent brands of cigarettes. With the reduction of prices for all leading brands of cigarettes, effective in January, 1933, it has been supposed that the rate of decline in consumption may be lessened, but no marked increase can be expected until business conditions improve. The consumption of smoking tobacco in 1932 apparently showed little change from that of 1931, but consumption of manufactured chewing tobacco apparently continued to decline.

FLUE-CURED, TYPES 11, 12, 13, AND 14

Owing to the greatly reduced crop of 1932, the total supply of flue-cured tobacco at the beginning of the 1932-33 marketing season was about 18 per cent below that of the 1931-32 season, and about 25 per cent less than the record supply of 1930-31. Exports for the year ended July 1, 1932, were 34 per cent less than in 1930-31, and domestic consumption showed a small decline. With production greatly reduced, however, prices on auction markets to December 31, 1932, were somewhat above the especially low prices of a year earlier, but total returns for the 1932 crop will be substantially less than the low returns for the 1931 crop.

The 1932 crop of 362,000,000 pounds is the second smallest since 1917, and about 45 per cent below the 1931 crop. Acreage in 1932 was about 36 per cent below the 1931 acreage, and the yield per acre was much below average. A plant shortage caused by disease infestations, spring freezes, and insect damage, together with the low returns from the 1931 crop, was responsible for the reduced acreage of 1932. Much of the acreage was planted later than usual, and the crop as a whole was below average in quality.

Over a period of years, exports of flue-cured tobacco have approximated two-thirds of the total production. For the six months ended December 31, 1932, exports of flue-cured were 15 per cent below those for the same months

of 1931, and 26 per cent below the 5-year average for these months. From July to October, 1932, the volume of exports compared favorably with that of other recent years, partly because of larger takings of low-grade leaf by China, but in November and December the volume was reduced. Reports from several countries indicate that recent imports have not been equal to the current consumption of this tobacco, with the result that stocks in foreign countries are estimated to be at the lowest level since 1929. The reduced consumption of the last two years apparently has made it unnecessary for dealers and manufacturers to carry such large stocks as formerly. However, as conditions eventually improve, and consumption begins to increase, it may be anticipated that imports will be increased to replenish stocks.

Meanwhile increased competition is being offered by the flue-cured tobacco produced in other countries. The British preferential tariff on tobacco grown in the British empire has become more effective during the depression, and larger quantities of flue-cured tobacco from Canada and Southern Rhodesia are being imported into the United Kingdom. Exports to China continue to be influenced by the low purchasing power of Chinese consumers, and by the competition of flue-cured leaf grown in China. Present stocks in China are reported to be materially below the large stocks of a year ago. Australia, Japan, and Canada have all reduced imports from the United States, partly because of increased substitution of home-grown tobacco.

In the 1933 crop in the United States, some increase in acreage over that of 1932 seems probable. Many growers planted less than the intended acreage in 1932 because of shortage of plants. Moreover, in States where marketings of flue-cured have been completed, returns to growers have apparently been more favorable than returns from other competing crops and this might stimulate the planting of tobacco. From present indications, it appears probable that flue-cured stocks on July 1, 1933, may be reduced from 150,000,000 to 175,000,000 pounds below the high level of July 1, 1932.

BURLEY, TYPE 31

Burley acreage of 432,000 acres in 1932 was about 17 per cent below the record acreage of 1931. The yield per acre in 1932 was lower than in 1931 and the December 1 estimated production of 344,197,000 pounds was 24 per cent less than the production of 1931. Stocks of old tobacco continued to accumulate, however, and on October 1, 1932, they were 585,902,000 pounds, the largest on record. Total supply for the 1932-33 season is 4 per cent greater than the previous record supply of the 1931-32 season. Notwithstanding the large supply, prices for the 1932 crop advanced materially over 1931, prices at auction-floor markets in Kentucky averaging about 13.6 cents per pound up to December 31, 1932, compared with 9.8 cents for the same period of 1931. The advance in price may be attributed to the smaller size and better quality of the 1932 crop, and the fact that it yields a higher proportion of the cigarette and smoking grades than usual, to the reduced supply and poor quality of the flue-cured crop, and to increased competition among buyers, particularly for certain grades.

Disappearance of burley for the year ended October 1, 1932, was 305,100,000 pounds. This represents an increase of about 4 per cent over a year earlier and is slightly larger than the previous record disappearance of the 1926-27 season. Exports showed only a small increase, with the total amounting to only 11,000,000 pounds.

With the level of prices that has been maintained so far for the 1932 crop it seems likely that some increase of burley acreage may be expected in 1933. It should be borne in mind, however, that the present total supply is equivalent to about three years' disappearance, whereas the usual relationship is for supply to be only about twice as large as disappearance. Production in 1932 was estimated to be considerably in excess of the 1931-32 disappearance, so that stocks by next October may be further increased. An increase of acreage for flue-cured tobacco together with more normal yields and quality for that crop in 1933 would result in increased competition for burley.

MARYLAND, TYPE 32

Acreage of Maryland tobacco in 1932 was about 15 per cent less than in 1931. With yields per acre below average, the 1932 production of 22,800,000 pounds was 23 per cent below the large 1931 crop. However, stocks on October

1, 1932, were more than 8,000,000 pounds higher than a year earlier and the highest thus far reported. The increase in stocks more than offset the decrease in production and the total supply of 53,400,000 pounds for the 1932-33 season is the largest in years.

Exports for the year ended December 31, 1932, increased about 35 per cent over the small exports of 1931 but were below the average of other recent years. The reduced crop of other cigarette tobaccos, especially flue-cured, and the present low prices for Maryland, furnish a basis for anticipating some increase in disappearance over the 21,000,000 pounds of the 1931-32 season. One of the factors responsible for the smaller exports of Maryland in recent years has been the high prevailing prices for this tobacco in comparison with competing types.

FIRE-CURED TYPES

The acreage of all fire-cured tobacco was reduced 32 per cent from 237,000 acres in 1931 to 162,300 in 1932. Except in 1927, when plantings amounted to only 150,200 acres, this was the smallest acreage of fire-cured since 1909 when records by type were first compiled. The reduced acreage in 1932 was in part a continuation of the downward trend of fire-cured production which has been under way since about 1923, but most of it was due to the unusually low prices received for the 1931 crop.

From two-thirds to four-fifths of the production of fire-cured tobacco has been exported in recent years, principally to Europe. The European consumption of these types has been declining since about 1920, with the greatest decline occurring between 1920 and 1925. Since 1925 the decline has averaged about 8 per cent a year. Consumption of the products in which these types are used in Europe was at about the same level in 1930 as in 1920 so that the decline in their consumption has been due largely to substitutions of dark air-cured tobacco produced in foreign countries. Since 1930 the production in these countries has been maintained near the high level reached in 1930, and it is probable that some further substitutions may be made.

The principal domestic use of fire-cured tobacco is in the manufacture of snuff. The consumption of snuff has increased only slowly in recent years, and in 1932 it showed a decline.

VIRGINIA FIRE-CURED, TYPE 21

The 1932 production of Virginia fire-cured tobacco, 14,600,000 pounds, is the smallest on record and is more than 50 per cent less than the 1931 crop. Owing to an increase of carry-over, however, the total supply of 46,800,000 pounds on October 1, 1932, was only 18 per cent less than that of a year earlier. Prices to December 31, 1932, averaged somewhat above the low prices of 1931-32, according to State reports.

For the season ended October 1, 1932, disappearance increased about 2,000,000 pounds over the record low level of the preceding season, owing to an increase of about this amount in foreign takings. The 1932 crop was only a little larger than normal domestic uses so that stocks on October 1, 1933, are likely to be appreciably reduced from those of the present season.

KENTUCKY-TENNESSEE FIRE-CURED TYPES 22 AND 23

Production of Kentucky-Tennessee fire-cured tobacco in 1932 totaled 108,400,000 pounds, compared with 152,200,000 pounds in 1931 and a 5-year average, 1928-1930, of 123,100,000 pounds. The greatest decline occurred in the Paducah district, where the reduction from 1931 production amounted to 45 per cent. Stocks of old tobacco increased during the year so that the total supply of 266,900,000 pounds on October 1, 1932, was only 5 per cent less than the large supply of 1931-32. Prices on Kentucky markets up to December 31, 1932, averaged about the same as for the corresponding period of the 1931-32 season, but appeared to strengthen to some extent during January, 1933.

Disappearance for the year ended October 1, 1932, was 123,000,000 pounds, an increase of about 10 per cent over the unusually small disappearance of the previous year. Exports increased from 74,100,000 pounds for the crop year 1930-31 to 82,400,000 pounds for 1931-32, with larger takings of the Paducah type being responsible for most of the increase. A part of this increase of

exports apparently went to increase stocks in foreign countries. Exports are not expected to be larger and may not be as large in 1932-33 as in 1931-32, and stocks on October 1, 1933, are not likely to show much reduction below those of October 1, 1932.

HENDERSON FIRE-CURED, TYPE 24

The estimated plantings of 5,500 acres of Henderson stemming tobacco in 1932 were the smallest on record and 37 per cent less than the relatively small acreage of 1931. An increase of carry-over partially offset the decrease of production, and the total supply on October 1, 1932, was 8,700,000 pounds, compared with 10,400,000 pounds a year earlier. Disappearance for the season ended October 1, 1932, was 6,300,000 pounds, compared with the small disappearance of 6,500,000 pounds for 1930-31.

DARK AIR-CURED TYPES

The market outlet for the dark air-cured tobacco produced in the United States has been constantly narrowing, both at home and abroad. The domestic uses of these types are confined to the manufacture of chewing and smoking tobacco, especially the former.

ONE SUCKER, TYPE 35

One Sucker acreage was reduced from 35,200 acres in 1931 to 22,600 acres in 1932. With yields per acre also lower, production for 1932 amounted to 18,100,000 pounds. Except for the 1927 crop, this was the smallest total production since 1912. Quality of the 1932 crop is reported to be good, and prices on Kentucky auction markets up to December 31, 1932, averaged somewhat higher than the record low prices for the 1931 crop. Disappearance of 28,400,000 pounds for the season ended October 1, 1932, was 28 per cent above that of the previous year and larger than the disappearance in either of the three preceding seasons.

GREEN RIVER, TYPE 36

Production of Green River tobacco was reduced from the high level of 42,900,000 pounds in 1931 to 21,900,000 pounds in 1932. A large part of this reduction was offset by an increase of stocks, and the total supply of 58,200,000 pounds on October 1, 1932, was only 13 per cent below the large supply of a year earlier. Prices paid to growers up to December 31, 1932, were little different from those of 1931-32, when a record low average of 3.3 cents per pound was reported for the season. The disappearance of 30,800,000 pounds for the crop year 1931-32 represented only a slight increase over 1930-31, in spite of the low prices of the tobacco.

VIRGINIA SUN-CURED, TYPE 37

Production of Virginia sun-cured has been steadily declining during the last decade, and the 1932 acreage of 3,500 acres is less than one-third as large as the 1920 acreage. Acreage in 1932 was about 30 per cent below the small 1931 acreage, and yields per acre were the lowest since 1919. The total supply on October 1, 1932, was the lowest in years and stocks on October 1, 1933, will probably be substantially reduced. Auction-floor prices up to December 31, 1932, showed some improvement over those of a year earlier.

CIGAR TYPES

The outlook for cigar tobacco continues unfavorable. The acreage of all cigar types in 1932 was reduced about 18 per cent from the 1931 acreage and with lower yields per acre the total production of cigar tobacco in 1932 was 28 per cent less than in 1931. Reductions in production were fairly uniform for the filler, the binder, and the wrapper types. For most cigar types, stocks on October 1, 1932, showed an increase over those of a year earlier, and for some types the total supply of leaf for the 1932-33 season is greater than for the 1931-32 season, notwithstanding the reduced 1932 crop. Total leaf used in the manufacture of cigars in 1932 was about 30 per cent less than was used in 1929. The reduction was particularly severe in the cases of cigars retailing

at more than 5 cents each, resulting in a material cheapening of the outlet for cigar tobacco. Even the production of cigars retailing at not more than 5 cents each (class A) which had been increasing each year since 1919, showed a decline of about 5 per cent in 1932.

PENNSYLVANIA, TYPE 41

Stocks of Pennsylvania filler on October 1, 1932, 107,600,000 pounds, were the highest since 1925, and 33,400,000 pounds greater than on October 1, 1931. Production in 1932 was about 25 per cent less than in 1931, but in view of the reduced rate of disappearance stocks on October 1, 1933, are expected to be fully as large as a year earlier.

MIAMI VALLEY, TYPES 42, 43, AND 44

Stocks of Miami Valley types, on October 1, 1932, were the largest since 1927, but the increase in stocks from 1931 to 1932 was not large. Owing to smaller production in 1932, the total supply of 79,500,000 pounds on October 1, 1932, was about 8,000,000 pounds less than the supply on this date in 1931. The supply for the 1932-33 season is, however, larger than that on October 1 in 1928, 1929, or 1930. The future outlook for these types depends to a material extent upon the degree to which growers return to the varieties and strains most acceptable to cigar manufacturers. Over a considerable period of years there has been a tendency to emphasize yields at the expense of quality.

NEW ENGLAND BROADLEAF, TYPE 51

The decrease in production of New England of broadleaf in 1932 was more than sufficient to offset the increase in stocks which occurred during the year, and the total supply of 46,600,000 pounds for the 1932-33 season is about 4 per cent smaller than the supply for the 1931-32 season. In view of the reduced rate of consumption, however, stocks are expected to continue large for at least another year.

NEW ENGLAND HAVANA SEED, TYPE 52

The decrease in production of New England Havana seed in 1932 was not sufficient to offset the increase in stocks, and the total supply on October 1, 1932, 50,800,000 pounds, was 2,000,000 pounds greater than a year previously. No substantial decrease in stocks is anticipated in the near future.

WISCONSIN, TYPES 54 AND 55

Production of Wisconsin-type tobaccos has exceeded disappearance during several recent years, and stocks on October 1, 1932, were the largest on record. Notwithstanding a smaller crop in 1932, no immediate decrease in stocks is anticipated. The 1933 outlook appears particularly unfavorable for type 54, where the present ratio of supply to disappearance is much higher than for type 55.

BROOMCORN

For a number of years the quantity of broomcorn used has been decreasing. The present annual disappearance seems to be about 10 per cent below that of five years ago. A total broomcorn acreage in 1933 equal to that of 1932, with the 1927-1931 average yield of 313 pounds per acre, would produce a crop of nearly 45,000 tons, which is slightly less than the average annual disappearance for the last two years.

The planted acreage in 1932 was about equal to the harvested acreage in 1931, but, owing to abandonment, the harvested acreage was about 3 per cent less in 1932 than in 1931 and was the smallest since 1927. Because of an unfavorable season the yield per acre was the lowest in more than a decade, and the 1932 crop of 33,500 tons exceeded the very small 1925 crop by only 2,300 tons. It was equal to about 70 per cent of the average production for the 5-year period ended with the 1931 crop.

Broomcorn disappearance (including domestic consumption, exports, waste, and loss) which was 62,600 tons in the 1924-25 season, has been less each succeeding year than during the previous year (except in 1928 and 1929, when in-

creases were reported) and amounted to only 43,000 tons in the 1931-32 season. Over a period of years this decrease is largely due to the increasing competition of cleaners not made from broomcorn, and there is now no indication that the average annual disappearance is likely to exceed 45,000 tons during the next few years.

The total supply of broomcorn for the 1932-33 season, approximately 59,000 tons, was the smallest in years. Should the disappearance this season amount to 40,000 tons, stocks on hand at the close of the season (May 31, 1933) would approximate 19,000 tons, the smallest carry-over in the nine years for which data are available.

Owing to weather damage the 1932 crop of broomcorn contained a large proportion of low-quality brush, and prices to growers differed widely for brush of different qualities. Prices to growers around December 1, 1932, averaged about \$43 per ton or about 46 per cent of the average December 1 farm price for the five years ended in 1931. Broomcorn prices, however, were relatively higher in December, 1932, than were those of most other farm products grown in the same areas.

The present relatively high prices of broomcorn compared with other farm products, the firm market situation resulting from the unusually small stocks, together with the prospective heavy abandonment of winter wheat in the Southwest, may result in increased broomcorn plantings in 1933.

RICE

Demand for United States rice during the 1933-34 season, according to present indications, will be little if any greater than in 1932-33. Domestic consumption will probably continue at present low levels unless there is some improvement in business. The foreign market for American rice has narrowed because of competition from low-priced oriental rices, depreciated currencies, and import duties and other restrictions. A large carry-over of old domestic rice into the 1933-34 season is in prospect.

SOUTHERN BELT

The 1932-33 southern rice crop and the record carry-over of rough and milled rice August 1 are equivalent to about 10,611,000 barrels, or 6 per cent less than the supply for the 1931-32 season and 3 per cent below that of 1930-31. The supply averaged 10,769,000 barrels for the five seasons 1927-28 to 1931-32, with the range from 10,039,000 barrels (1929-30) to 11,337,000 barrels (1931-32).

The reduced supplies of southern rice for the 1932-33 season resulted principally from a smaller acreage. The rice acreage in the Southern States was 753,000 acres, compared with 853,000 acres harvested in 1931 and 851,000 acres in 1930. The acreage for the five years 1927-1931 averaged 829,000 acres.

Allowing for average farm use, about 8,760,000 barrels of rough rice are available for market in the Southern States during 1932-33 or for carry-over at the close of the season, compared with about 9,900,000 barrels in 1931-32, 9,925,000 barrels in 1930-31, and 9,000,000 barrels in 1929-30. Receipts of rough rice by southern mills from August through December, 1932, were 16 per cent smaller than during the same period the year before; they were restricted by low prices and reduced demand for milled rice. Shipments of milled rice into consuming channels from August through December were also reduced, being 12 per cent smaller than those in this period the season before.

Shipments to Puerto Rico, which usually takes from 20 to 25 per cent of the southern rice crop, were larger in the period from August through December this season than in the corresponding period last year, reflecting an unusual demand that resulted from damage to local food crops by hurricane. In 1928-29 and 1930-31, when hurricanes also occurred, annual shipments to Puerto Rico totaled nearly 210,000,000 pounds.

The 1932-33 world supplies, outside of the United States, apparently are about as large as the world supplies in 1931-32. Production in countries reporting up to the close of December, which account for, roughly, one-fourth of the world production, was slightly larger than a year previous. The 1932 crop in Japan is estimated at 18,972,000,000 pounds, an increase of about 9 per cent over the 1931 crop. No production estimate is available for India, but the 1932 acreage was placed at 78,791,000 acres, compared with 81,367,000, the comparable estimate in 1931. Reports suggest a good-sized crop in Siam on

an increased acreage and a French Indo-China harvest about as large as that of a year ago. Efforts on the part of foreign countries to be self-sustaining have been an important factor in maintaining acreage.

Foreign outlet for United States rice during 1932-33 has been narrowed by reduced purchasing power and restrictions of imports in some of those countries that usually buy a large percentage of the United States rice. Exports of rice from the Southern States from August through December, 1932, totaled only about 48,000,000 pounds compared with 75,000,000 pounds in the same months of 1931; they were the smallest for that period since 1925. The foreign countries that buy from 60 to 75 per cent of the American rice exports have been increasing their apparent consumption of rice during the last three years. Imports of United States rice into the principal importing countries of Europe have increased during the same period but not to the same extent that total imports increased. United States exports to South American countries have decreased during the last three years, largely because of reduced purchasing power in those countries and increased competition from Brazilian exports.

The United Kingdom imposed an import duty of 1½ cents per pound (cleaned basis) on non-Empire rice, effective January 1, 1933. Some of the South American countries also imposed import duties on rice to stimulate domestic production. The very low prices of oriental rice have practically excluded American rice from the Cuban market this year. United States exports to Cuba from August through December, 1932, were about 6,000,000 pounds less than those of the corresponding period in 1931. In fact, to only a few foreign countries were shipments of American rice during the first five months of the current season as large as those for the corresponding period in 1931. Because of competition from low-priced oriental rices and of restrictions on imports, the export outlet for American rice during the current season is narrowed. It is probable that this export outlet may continue to be smaller during the next few years unless there is considerable improvement in buying power in the principal rice-importing countries.

CALIFORNIA

The 1932 California rice crop was 1,955,556 barrels, equal to 3,168,000 bags of 100 pounds each. This harvest was 17 per cent smaller than the 1931 crop and 10 per cent under the 5-year (1927-1931) average. The reduction resulted from a smaller acreage and lower yields. Only 110,000 acres were harvested, compared with 125,000 acres in 1931, and the yield was 6 per cent below that of 1931. Demand for California rice through December of the 1932-33 season was confined mostly to domestic, Hawaiian, and Puerto Rican outlets since exports were small. Shipments to Puerto Rico from the beginning of the California crop year (October 1) through December were about twice as large as those during the same period of either 1930 or 1931. Hawaiian takings exceeded those of a year ago. Interest in California-Japan rice by foreign countries is restricted by fair-sized crops in Spain, Italy, and Japan.

Reports from Japan indicate that domestic supplies in the Japanese Empire will be almost adequate for domestic needs. The limiting factor in Japanese takings of California rice is the San Francisco and Tokyo price relationship. The Tokyo price of brown rice is usually from 80 cents to \$1 per 100 pounds above the San Francisco price of brown rice when Japan is buying California rice. Middle quality brown at Tokyo on January 23 was quoted at \$1.55 and No. 1 brown at San Francisco at \$2 per 100 pounds.

THE LONG-TIME AGRICULTURAL OUTLOOK

Many considerations affecting the agricultural industry as a whole are not adequately treated, particularly in their long-time aspects, in the foregoing discussions. In order to consider these more general forces and conditions and to appraise their influence in shaping the course of agricultural development, the following topics are presented as a long-time outlook.

GENERAL PRICE LEVEL

The decline in the general price level has been the important factor in the agricultural depression, which has existed in varying degrees since 1920. The present acute situation, with its disparity between prices of farm products and industrial goods and services, its breakdown in the exchanges between farmers and their accustomed markets, and its burden of debts contracted on the higher

price levels, is the direct outgrowth of the fall in general commodity prices, combined with drastic declines in general business activity. Irrespective of whatever causes may have brought about this price catastrophe, the important consideration is that the present agricultural situation is largely the result of it, and the agricultural outlook for several years ahead is dependent largely upon what happens to the general price level.

Reviewing the course of the general price level over many years, it will be observed that following great war periods, in which prices were raised to very high levels, the decline has continued through many years. In relation to these war periods the present depression corresponds approximately to that of the thirties and seventies of the nineteenth century. Prices rose after those depressions, but later sank to still lower levels. In the earlier depression, however, prices of agricultural products reached their lowest level before non-agricultural prices and the general price level touched the bottom of the long swing between the two war periods. Reviewing the present situation in the light of this past experience, it may be observed that many further adjustments must be made before a high degree of stability is attained.

In attempting to arrive at conclusions by analyzing present conditions and their causes in the light of past experience, different analysts give greater emphasis to some conditions and causal relationships than others, and yet their conclusions are similar.

Some students of prices take the view that the causes of major changes in all-commodity prices are largely monetary. The physical volume of production of commodities in the world tends to increase at a fairly uniform rate, about 3 per cent per year. Variations in gold production and in the demand for gold in relation to this rate of increase in production are the dominating factor in determining changes in the general price level. In the World War period many countries abandoned the gold standard and inflated their currency and credit, thus greatly reducing the demand for gold. The output of gold fell to a low point in 1920. As countries returned to the gold standard, the demand for gold increased. Prices began to be more definitely related to monetary gold stocks. Naturally prices had to fall from their inflated high levels. During the present depression with its derangements in credit the demand for gold has greatly increased. Production of gold has greatly increased during the last few years, making a new record in 1932, and large quantities of gold have been withdrawn from India, as well as from use in the arts. These developments tend to raise the general price level. The abandonment of the gold standard by many countries also prepares the way for an increase in the general price level. A general return to the gold standard would have a tendency to reduce the level of prices. Those who hold to the gold theory of prices believe that the present supply of gold is sufficient to support commodity prices at about the pre-war level with all the world back on a gold basis, provided gold is used in the monetary structure as efficiently as before the World War.

Other analysts believe that changes in the price level are effected more by the very wide variations in the volume of bank credit and in national monetary policies than by the world supply of monetary gold. The future of the general price level, in their view, depends primarily upon central banking policy as reflected in the operations of commercial banks. A maldistribution of gold among central banks and the strain imposed upon banks by international debt obligations were important factors in bringing about credit restriction and the present depression. During the last few years important readjustments have been under way which may result in material improvement. If it were possible for central banks to agree upon and act coordinately upon certain policies, it probably would be possible to raise the general price level and hold it at a higher level. They do not anticipate, however, that the credit structure of the world can again be built up and maintained so as to restore and stabilize prices at the 1927-1929 level.

Another group of analysts consider productive activity in this country and abroad and international trade relations to be the primary factors in the general price level. In their view the present depression in prices is due in large measure to a world-wide depression in business activity, which is in part only temporary; attempts at national protection and the development of national independence from international trade and exchange are also important factors which are in part temporary; when readjustments in price and credit relations have gone far enough to provide a basis for a revival of confidence in the future, business activity will be resumed, trade barriers will be relaxed to some extent at least, and prices will rise. In their view, as production is reorganized on the

basis of the many readjustments that are being made in the costs of the factors entering into production and in the handling of commodities between producer and consumer, the rate of production may be maintained on a price level considerably lower than the 1927-1929 level. The world is now prepared, they believe, to maintain a rate of production sufficient to meet current requirements on a price level which may not be far from that of the present.

If the general price level rises, agriculture will be one of the first industries to benefit. Any marked rise in wholesale prices would be accompanied by a business revival and a greater advance in prices at the farm. Even a small general rise would help to reestablish market confidence. A substantial rise in the all-commodity price level is the one thing that would change the whole outlook for agriculture promptly and favorably.

If all-commodity prices tend to stabilize at somewhere near the present level, the next few years will unquestionably see a continuation of the liquidation and readjustments that are now in progress. The farm business can not go ahead in a normal way until further readjustments are effected outside of agriculture. If the general price level remains near the present low level, the farmer's burden of debt will have to be made tolerable by easier terms, reductions in principal or other means; taxes will have to be brought within the capacity of farm property to pay or will have to be partially shifted to other sources; and industrial wage rates, salaries, and capitalizations will have to come down to a point at which they do not hold necessary goods and services out of the farmer's reach. In particular, readjustments must be made in transportation charges and other distribution costs, in the prices of farm machinery, and in other charges or costs of factors in production, as well as taxes and debt burdens. All of these readjustments are now in progress, but they are moving slowly and in the face of great resistance. Agricultural conditions during the next several years will improve if the general price level rises; or they will improve as the readjustments are hastened that will bring wages, charges, taxes, and costs of all kinds into line with the lower price level that prevails.

DOMESTIC DEMAND

The contraction in the industrial activity of the Nation since 1929 has been so great, the disorganization of consumer purchasing power and living standards so widespread, and the spirit of speculative enterprise so crippled that a speedy return to the former high rate of industrial production and urban employment is not generally anticipated. By the end of 1932 the volume of industrial production had been cut to half of that of 1929, about a third of the persons formerly gainfully occupied in industries other than agriculture were then completely unemployed in industry and millions were working part time. In the 30 years between 1899 and 1929 the industrial production had far outstripped population growth; whereas the latter had increased about 60 per cent, industrial output had increased about 200 per cent or more than three times the rate of population growth. That industrial expansion of 30 years has been wiped out during the course of the current depression, in progress since 1929, for the ratio of output to population in 1932 was back to that of 1900.

A much higher volume of industrial output than the present abnormally low level will probably be reached within this decade. It must now be recognized that the industrial growth of the country was given an abnormal spurt by the war conditions of 1916-1918 and that certain influences growing out of the World War on both domestic and foreign industrial trends helped sustain the level of our industrial output and the domestic demand for farm products during the decade of the 1920's. Those factors, particularly the foreign demand for our industrial and farm products, are not likely to be as favorable in the next few years as they were between 1920 and 1929.

Another factor which is likely to hold the volume of industrial production of the next few years below that of the 1925-1929 level and which will influence agricultural developments is the slower rate of population increase and a shift of industrial population to farms. During a substantial part of the decades 1910-1920 and 1920-1930 most of the increase of population was in the cities (nearly 15,000,000 out of the 17,000,000 national increase in 1920-1930). The immigrants settled largely in the cities and there was a net migration from farms to cities of 5,000,000 to 6,000,000 each decade. From 1920 to 1930 the urban population increased 27 per cent, the rural, nonfarm 18 per cent, while the farm population decreased 4 per cent. Immigration as well as farm-to-

city migration has now ceased, while the number of children born in the Nation is decreasing between 50,000 and 125,000 each year, the greater decrease developing during the recent years of economic depression. The decrease has been greater in cities than on farms. Ten years ago the population of the Nation was increasing nearly 2,000,000 a year; now the increase is only about 800,000. These tendencies, so contrary to those upon which much of industrial expansion has been predicated, suggest a slower rate of our industrial expansion for the next few years at least. Possibility of the development of new industries or of the substantial expansion of old ones in new directions is to be kept in mind as a potential accelerating force.

While these are basic long-term tendencies that will affect agriculture during the remainder of this decade, the course of domestic demand during that period will continue to be an irregular one subject to fluctuating financial and industrial conditions here and abroad. The depletion in stocks of manufactured products of various kinds and the cumulative effect of consumers' needs have made themselves felt in every previous depression. Because of these influences, coupled with the efforts that have recently been made and those that are likely to be made to revive industrial production, to redistribute the national income, to relieve the burdensomeness of indebtedness and open up foreign trade channels, some improvement in domestic demand conditions is quite likely during the next few years. A continuation of such improvement to the end of this decade will of course depend on the ability of industries and financial institutions to make lasting adjustments in response to current efforts toward revival. The course of industrial history suggests that the process of emerging from a depression of such magnitude as the present one is likely to be irregular.

Furthermore, a higher level of industrial output would not necessarily mean a proportionate reduction in the number of unemployed and a proportionate increase in the money incomes of consumers of farm products. In the decade between 1919 and 1929 when factory production expanded about 45 per cent, the number of factory workers actually declined at least 5 per cent. In the shorter interval between 1923 and 1929, with the same number of factory workers, factory production expanded nearly 20 per cent. It is thus not unlikely that during a recovery in industrial activity farmers might still be confronted by the retarding influence of unemployment.

Prospective changes in domestic demand should eventually be reflected in restoration of prices of farm products in general more nearly in line with the level of nonagricultural prices. An improvement in that relationship may be expected as industrial production relative to agricultural production expands and as consumer incomes are increased through a reduction in unemployment. But certain factors are operating to maintain for some time the disparity between agricultural and nonagricultural prices, that is now greater than at any time in the past 60 years. Among these factors are the usual response of agricultural prices to general deflation, as costs of transportation remain relatively high and inflexible, the sharp curtailment in industrial production, which so far has tended to sustain certain industrial prices and to reduce the buying power of consumers; the inability of farming to make such drastic adjustments in output, which creates a condition of relative abundance of farm products; the shift in population from cities to farms, which reduces consumer demand for farm products and adds to the total supply of such products; the increased agricultural production abroad, which tends to maintain an abundance of agricultural products throughout the world relative to the supply of other goods; and the slowing down in the rate of population growth.

FOREIGN COMPETITION AND DEMAND

The passing of the world-wide depression will probably bring an increase of import demand for farm products both in western Europe and in the Orient. The extent of this increase, however, and the share of it which will be supplied by the United States will depend largely on international financial conditions and policies regarding foreign trade.

Before the war the trend of our agricultural exports was in general downward. This trend was reversed as a result of the heavy demand on the part of Europe growing out of war conditions; our exports during the war period and the years immediately thereafter reached the highest level on record. A large part of our exports during and since the war, however, has been paid for with money borrowed in the United States. Foreign countries have since war been able to buy considerably more from us than they sold to us in

goods and services, because American investors have loaned them the funds to pay for the excess. Thus the large surplus of our exports over our imports has been made possible by our heavy loans to Europe as well as our loans to South American and other countries. This lending has now largely ceased, and our export surplus has already been substantially reduced. It does not now seem likely that when the recovery from the depression takes place foreign lending will be resumed on so large a scale as previously. On the other hand, under existing arrangements foreign countries will have to use a considerable part of the proceeds of their sales of goods and services to the United States for the payment of their obligations to American creditors.

It follows from the foregoing analysis of the situation that when prosperity returns, either the volume of our exports will be much smaller than before the depression or the volume of our imports (including the sale of services to Americans by the inhabitants of foreign countries) will be much greater. The volume of our imports, however, is limited by our tariff. We will, of course, continue in any event to import such commodities as coffee, rubber, tin, and others which are not affected by our tariff. The sale of services and goods to Americans traveling abroad is another important item not directly affected by our tariff. These items, however, have not been sufficient in value to provide the means of payment for more than a part of our exports. Consequently the total volume of United States exports in the future will be profoundly influenced by our own tariff policy, even apart from any possibility of reducing foreign trade barriers by tariff bargaining.

The demand for imported farm products in the agricultural deficit countries will depend largely also on financial conditions, on the trade restrictions of these countries, and on their domestic agricultural production. Since the war agricultural production in Europe has steadily increased, and has somewhat more than regained its pre-war volume. The increase has been materially aided by import restrictions, which have become particularly severe during the depression. This factor has been responsible for a considerable decrease in our exports of animal products and of grains. If and when economic and financial conditions improve, not only will there be an increase of purchasing power, but there will, in all probability, also be abandonment or relaxation of the more extreme forms of trade barriers which have developed since the financial crisis of the summer of 1931. This, in itself, would be a great gain; but it would probably still leave barriers well above those prevailing in 1929. With respect to further reduction, much will depend upon the progress of the present move for a general scaling down of barriers by resort to international tariff bargaining. Possibly this may result in a substantial reduction of barriers, but as to the extent, forecast is impossible. Unless marked progress is made in this direction, however, the substantial gains in agricultural production made in Europe since the war are likely to be at least maintained. The continued existence of trade barriers will also tend to retard increased consumption. Imports of wheat by the deficit countries may not be greatly increased above their present level. European imports of pork products will probably diminish as a result of increased production in the principal countries, Germany and the United Kingdom; the latter country has recently embarked on a policy of restricting imports of pork products by means of a quota system through which it is hoped to increase production very materially. Imports of lard will probably be limited by the increased production of edible fats, particularly in Germany, and the increased competition of vegetable oils.

The prospects appear to be more favorable with regard to fruits, cotton, and tobacco. Our exports of fruit, now one of the leading items in our export trade, have steadily increased in recent years and have been well maintained even during the depression. The recent imposition, however, of fairly heavy import duties in the United Kingdom, the leading market, may somewhat retard the increase of consumption. Europe and the Orient will need to continue to import large quantities of cotton, and unless smoking habits are drastically changed, of the types of tobacco principally exported from the United States.

The competition of other countries exporting agricultural products will probably continue to grow. In some commodities, such as cotton, tobacco, and fruit, the United States appears to possess outstanding advantages of climate and soil which will permit continued heavy exports in the face of this competition, but for other products, such as pork and wheat, the prospects of meeting this increasing competition are not as good. The rapid development of the world's vegetable-oil production seems likely to affect the export out-

let of American lard. The increasing production of vegetable oils is likely also to be an outstanding feature of foreign competition in the American market. Moreover, in regard to fruit, the new duties which have recently been imposed by the United Kingdom on fruit from countries outside of the British Empire are likely to accelerate the increase of production in the British dominions and colonies.

FARM REAL ESTATE VALUES

The drastic decreases in farm income after 1929 brought the sharpest declines in farm real estate values since those which in 1921 and 1922 followed the break of the postwar boom. During the 12-month period ended in March, 1932, the latest period for which data are available, the average acre-value for the country as a whole decreased from a point 6 per cent above 1912-1914 taken as a pre-war average to a point 11 per cent below. The declines were not uniform in all parts of the country, but all States were affected, and on March 1, 1932, average values in two-thirds of the States were below their pre-war levels.

Associated with this adverse development was a decline in the rate of voluntary sales of farms to the lowest in the available record, which began in 1925-26. There was also a sharp rise in the rate of farms sold on account of delinquent taxes to the highest figure in the available record; and a marked increase also to the highest figure in the available record, in the rate of farms sold on account of mortgage foreclosure, bankruptcy, or default of contract, or "deeded back" or otherwise transferred to avoid foreclosure.

The conditions that led to these adverse developments have in general continued. Further declines in prices of farm products during 1932 reduced gross farm income to the lowest figure in over a score of years. Rigid economy and moderate decreases in the prices of commodities farmers buy resulted in some reduction in operating expenses, but the exchange ratio of products sold to commodities bought still remained at the low figure of around 50 per cent of pre-war. Taxes on the whole have declined somewhat but the claims of debt service have continued at high levels. Hence, the proportion of the available gross income required to meet fixed charges increased further. Under such conditions the foreclosure and tax delinquency problem grows still more acute, and an enlarged burden of distressed real estate thrown on an already overburdened market still further depresses values.

On the other hand, it is true, the existing situation has created opportunities for acquiring farms at lower prices than for many years, provided the financing can be arranged, and some increase in sales has been reported from a few areas. Farmers themselves, however, are normally the largest class of buyers of farms, and in recent years their reduced income, together with further restriction in the availability of mortgage credit, has seriously contracted their purchases. The "back-to-the-land" movement on the part of the urban unemployed does not yet appear to have been a significant factor on the sustaining side of farm realty values, except possibly in some areas of comparatively low-priced land or in the vicinity of the larger cities.

The course of farm realty values in the next few years will depend mainly upon the trend in prices of farm products and of commodities bought by farmers; upon the trend of farm real estate taxes; upon developments in farm-mortgage credit; and upon the opportunities for alternative uses of labor and capital in industrial and commercial activity. Most of these factors are discussed in more detail elsewhere in this report. Even if prices of farm products improve, however, farm realty values, if past experience can be taken as a guide, probably will not rise in proportion, for they tend to lag behind commodity prices; and the accumulating burden of distressed land that remains to be absorbed may be expected to accentuate the lag.

FARM CREDIT

The present farm-mortgage situation is dominated by the acute distress of large numbers of farmers who because of inability to meet payments due on their loans are losing their farms by foreclosure or by voluntary relinquishment of their titles. The extremely low farm incomes as contrasted with high fixed charges have made the question of indebtedness a crucial problem in important farming areas. Foreclosures on farms for debt during the year ended March, 1932, reached higher levels than in any other year since 1920, and indications are that they have continued at high levels since.

Recent losses of farms have occurred to an increasing extent on account of first mortgages which could no longer be sustained by the depressed prices of farm products and of farm land. Average prices of farm products for 1932 were 57 per cent of pre-war levels, whereas land values in March were 89. In view of this wide disparity between prices and values, it can not be predicted how soon the present severe liquidation will cease. The pronounced downward adjustment in farm taxes that now appears to be under way, and possible further reduction of prices of commodities that farmers buy, are factors which may aid in increasing the available net farm income and in relieving debt distress. Efforts to improve the debt situation by extension of terms or by other equitable adjustment are urgently needed.

The more distant future of farm-mortgage credit depends in part upon developments growing out of the present situation with regard to outstanding loans now in distress. During the period from 1895 to 1920 the reliability of the farm mortgage became traditional, but the present severe depression of farm income and farm values is subjecting the farm-loan structure to great strain. If in the adjustment of distressed credit conditions full consideration is given to the rights and equities of both lenders and borrowers, the confidence of investors generally will be retained in the farm-mortgage field as a means of investment in future years. If, in addition, more flexible payment plans which accord with the current prices and yields of farm products should be generally adopted as acceptable means of keeping loans in good standing during the present emergency, losses to investors and losses of farms will be held to a minimum, the mortgage operations of loan and collection will be kept nearer to normal, and future borrowers on farm-mortgage security will not be unduly penalized through loan terms because of previous mistakes connected with this type of credit. The continuous turnover in farm lands and the substantial amount of capital represented by the average farm make it highly desirable to maintain favorable facilities for long-term financing of farm real estate.

Beyond the present depressing circumstances certain more hopeful aspects are discernible if a long-term view is taken. During the last 13 years a great amount of liquidation in agriculture has taken place. A recent bulletin of the Iowa State College indicates that the average mortgage debt per acre of mortgaged farms in that State has declined 29 per cent from 1921 to 1932, and that in October, 1932, this average was within 17 per cent of the level of 1915. The fact that delinquency on farm mortgages did not reach large proportions until the acute stage of this depression is evidence of the continued stability of this form of investment. It may be expected that with the subsidence of the present wave of foreclosures and the acceptance of losses in extreme cases new loans made on the more stable basis of lower values should again become available and should be offered at rates lower than have prevailed for several years past.

The adequacy of future farm-mortgage financing will depend in part upon what improvements, if any, are made in the institutions making loans on farm land. The current depression has been deepened for agriculture because during most of the period no major class of institutions has been able to provide normal credit accommodations on first-mortgage loans. Lack of strong facilities, having broad powers, and capable of providing a more constant flow of credit on approved farm loans, accounts for part of the uncertainty regarding future capacity to avoid a repetition of current difficulties and regarding other aspects of the long-term outlook for farm-mortgage financing.

The long-time outlook for farm-production credit will depend largely upon the future course of the farm-income situation and upon the measures taken to improve existing disorganized facilities for short-term credit. The present extremely low income of farms and the wide disparity between farm and other prices has drastically curtailed the ability of existing institutions to grant and the ability of farmers to repay credit. Whereas the greater part of long-term farm credit has for a number of years been drawn through central sources, farmers' accommodation for production loans is still mainly dependent upon local sources the lending capacity of which tends to vary from year to year with local conditions. Since agricultural returns vary more widely than do those for other industries, the cumulative result has been that as the agricultural depression has continued an increasing number of institutions have become inactive or have entered receivership.

At the beginning of 1933 production credit for agriculture is in the most demoralized condition of any time for several decades. Since 1920 the facilities for providing the farmer with advances for his current production operations

have been growing less satisfactory. During this time more than 10,000 banks have closed, mostly banks in the rural districts in which farmers had their deposits and on which they relied for needed credit. In 1931 more than 2,200 banks failed and, despite emergency loans of the Reconstruction Finance Corporation to more than 5,000 banks, failures in 1932 numbered nearly 1,500. Farmers in many entire counties for several years past have been without facilities either for the safekeeping of savings or for the obtaining of small loans essential to the season's production of crops and livestock.

For a long time the difficulties of the country banks were viewed as temporary in character, and as such that they would pass with the emergency of 1921 and the years immediately following. But with the short-term credit situation becoming steadily worse into the second decade, it has become apparent that the difficulty is due to weaknesses inherent in the existing system and intensified by long years of practice.

During the last 10 years emergency-credit provision has grown in variety, lending power, and permanence of character so that the immediate prospect is for a larger proportion of financing by these agencies in so far as the regular financing facilities continue inactive. The aggregate amount of credit extended, however, constitutes only a comparatively small part of the total amount of agriculture's credit, though of recognized importance in the livestock regions. All of the emergency agencies have confined their activity to lending. Experience indicates that farmers prefer to make their credit arrangements with institutions that can accept deposits and offer other banking facilities rather than with agencies that can extend credit only. Certain other limiting factors constitute basic handicaps in the use of emergency measures. It seems probable, therefore, that emergency measures must continue to be of subordinate importance and that eventually the demand for more permanent credit facilities will renew attention to the need of fundamental change in production-credit arrangements.

From the long-time standpoint, the needs of farmers for production credit are not properly provided for or adequately safeguarded against the recurrence of such demoralized conditions as now exist. The prospect will become more favorable, if in determining the character of the institutions advancing such credit the characteristics of agriculture and the conditions under which they must operate are given more consideration. Agricultural prices fluctuate more widely than do other prices; farm production and returns are subject to occasional violent interruption; and the farmers' demand for production credit consists of a large number of small loans scattered over a wide area. It is essential to the season's work that the farmers' credit institutions should function every year and under all conditions of price level; that facilities provide warranted credit for the farmer even though the previous year's crop of the community may have failed; that institutions should not be subject to closing by withdrawal of deposits through fright of local depositors; that the strength and capacity of the bank should not be governed mainly by the distress or prosperity of agriculture, but should be sustained by financial resources of a broader nature; that profits and reserves made in times of prosperity should provide the means for absorbing unpreventable losses from depression without discontinuance of financial accommodations in periods of emergency; that the resources of the institution should be so used that a decline in capital values would not endanger the safety of depositor's funds, threaten its solvency, or deprive the community of facilities for production credit; and that the most effective available supervision should be employed to assure the best banking practice. Subject to the limitations imposed by farm-price conditions and relationships, the long-term outlook for improvement in production credit will depend upon sound developments in rural-credit facilities and practices.

FARM TAXES

Farm real estate taxes per acre for the United States as a whole increased almost 150 per cent between 1913 and 1929, or from 27 cents in 1913 to 67 cents in 1929. This increase, more than two-thirds of which occurred between 1916 and 1920, was caused partly by the public demand for more and better public improvements and governmental services, and partly by the rise in wages, salaries, and prices.

School and road construction particularly was greatly expanded and improved. Many other services were developed, such as mothers' pensions, hospitals, and welfare work. It was inevitable that the cost of such expansion and development should be defrayed by increased taxes. Through borrowing, ex-

penditures generally increased more than taxes, and a part of the increase in taxes was for interest and principal charges on the enlarged debt.

Farm real estate taxes were reduced about 20 per cent between 1929 and 1932, but are still approximately double the 1913 level. It seems reasonable to expect some further reduction, mainly because of the usual lag in prices of governmental services behind general prices. Since 1929 both wholesale prices and farm prices have declined much more than farm taxes, the decline in wholesale prices being almost one-third and that of farm prices 58 per cent. Though much of the farm tax reduction of the last three years is explained by the decline in the prices paid for governmental services and materials, there are good grounds for believing that further reduction in public expenditures will occur if general prices do not rise.

There are reasons to believe, however, that the decline in levies on farm property will not bring farm taxes down to their pre-war relation to farm prices. Among these reasons are the universal tendency for public expenditures to increase; the necessity of paying, for some years ahead, interest and principal charges on debts already contracted on account of past expenditures; the fact that farm taxes are mainly local taxes, and alternative tax sources now apparent are sorely needed by State and Federal Government for present and prospective services.

Although some services have been curtailed in many places, new services, such as employment relief, have been added. More services will probably be curtailed under continued pressure of low prices. There will probably be sharp curtailment of borrowing and of services financed with borrowed money. But this will not reduce current taxes except as present debt is reduced.

Further farm-tax reduction will probably seek mainly to shift a part of the present tax to other groups, to reduce further many public services, and as the situation improves, to reduce expenses for welfare activities. However, if there should be any significant rise in farm prices, the downward trend of farm taxes would probably be arrested.

FARM LABOR AND WAGES

At present farm wages are the lowest in many years. Nevertheless, average farm wages in relation to prices received by farmers for their products are still much higher than before the World War.

During the last three years the trends have been toward increasing farm-labor supply, diminishing demand for it, and lower wages. Important factors bringing about these trends have been the declining prices and employment both in and out of agriculture, as well as the reversal of the former movement of people from the farms to the cities. If the price level of farm products continues below that of farm wages, farmers' inability to hire labor even at present low rates will hold hiring to a minimum; and if demand for non-agricultural labor continues low, it will hold in check the movement of rural people to the cities, and force some people from the cities to the country in search of opportunities for self-support.

A factor that in recent years has tended to diminish the demand for farm labor is the increasing efficiency of production resulting from mechanization and from improvements in crop production and animal husbandry. Large labor supply and low wages may temporarily retard the trend toward increased use of labor-saving methods and mechanization of many agricultural operations.

The long-time tendency has been for general wages to rise gradually relative to commodity prices. If history should repeat itself, it may be expected that general wage rates in the next several years will remain at a higher level relative to commodity prices than existed before the World War. If this proves to be the case, it may be expected that farm-wage rates, which are affected by the urban-wage scale, will continue to be held relatively higher than farm prices.

FARM MACHINERY

The depression has halted, temporarily at least, the tendency toward a rapid mechanization of agriculture. Continued low prices for wheat and for other crops have checked expansion of cultivation upon the Great Plains and in the far Northwest where machinery was being extensively used. The increasing use of motor-power machinery in crop production elsewhere was also checked by the low prices for products and the maintenance of relatively high prices for machinery. In fact, the low prices for products and the consequent scarcity of cash have resulted in farmers curtailing the use of the tractors

and other power machinery that they have on hand, on account of the difficulty of purchasing fuel and repairs for them.

The great reduction in the purchase of new machinery and the use of motor-power machinery is in part temporary. Since the horse power on the farm is being reduced at a fairly rapid rate and can not be rapidly replaced, some of the power machinery now in use must be replaced. A return of horses to the extent of displacing all of the motor-power machinery on farms is not to be anticipated. Material reductions in prices of farm machinery would facilitate or increase the rate of the replacements of machinery wearing out and tend to check the return to use of horses in many areas, but a full resumption of the use of mechanical power to the extent developed in the period 1927-1929 is not likely in the near future. If prices of agricultural products are not materially improved in relation to the prices of machinery and other expenses of production, the tendency to the mechanization of agriculture will be slowed up for many years.

TRENDS IN AGRICULTURAL PRODUCTION

Until about 1905 the increase in production had been similar for cash crops and feed crops. Livestock had also followed the same general trend. During the next 10 years (1905-1914) production remained relatively stable, with the decline in crop production in the Eastern States being about offset by production on new lands opened up in the West.

Under the stimulus of advancing prices and an increased demand for all agricultural products during the years 1915-1920, the upward trend in production was renewed, the increase being confined largely to cash crops and to livestock. The acreage of the principal crops increased 15 per cent from 1909 to 1919. In this shift, however, the acreage of feed crops increased less than 4 per cent whereas the acreage of cash crops increased 43 per cent. Livestock increased about 23 per cent during the same period. The increase in crop production occurred largely in the Great Plains area and went on during a period when there was a scarcity of farm labor. These factors were encouraging to the development of large-scale farming and the increased use of mechanical power.

The expansion in acreage devoted to crops was halted by the sharp decline in prices in 1920 and 1921. Since 1919 the area in crops has remained fairly constant at about 355,000,000 acres. In contrast to the relatively stable acreage, net agricultural production (that is, production for market or for home use) has increased about 20 per cent from 1919 to 1929. The increase in net crop production was 12 per cent, while the production of livestock and livestock products increased 24 per cent.

The prices of cash crops such as wheat, cotton, flax, tobacco, and vegetables were relatively high in comparison with the prices of feed grains, resulting in a progressively larger proportion of the cultivated acreage being planted to cash crops. Prices of livestock and livestock products also were relatively high in comparison with feed grains. The shift from horse to mechanical power resulted in a marked decline in the number of horses and mules on farms and in cities, thus releasing large quantities of feed for other livestock so that this marked increase in livestock production for market and home use was accompanied by less than a 1 per cent increase in crop acreage.

The sharp decline in prices of all agricultural products since 1929 has resulted in marked shifts in crop acreage during the last three years. The area planted to feed crops increased about 14,000,000 acres, or 6.3 per cent from 1929 to 1932, while the area of cash crops declined about 17,000,000 acres, or 13.6 per cent. Feed grain acreage in 1932 was the largest on record and the increase in acreage has been accompanied by an increase in livestock numbers. During the first two years of declining prices the decline in the prices of cash crops was much greater than the decline in the prices of livestock and livestock products, but in 1932 the greatest price declines occurred in the latter group, thus decreasing the advantage to be obtained from shifting from the production of cash crops to livestock.

There are several conditions prevailing, however, which are likely to keep feed-crop and livestock production at a high level. The sharp decline in farmers' incomes has caused farmers to raise a larger part of their food and feed crops, thus increasing the production of both livestock and feed crops in normally deficit-producing areas. On the other hand, farmers in surplus producing States, who usually market a large part of the surplus grain, have had their market restricted both by decreased industrial utilization and by

smaller feed purchases in deficit-producing areas, and have had to increase livestock production to use up the available surplus feed.

At a time like this it is hazardous to judge as to future developments by the projection of present trends. Conditions are too much affected by the disturbing forces of the present economic depression to afford an adequate basis for forecasting. Nevertheless, judgment as to the future course of our agricultural production must be based upon the full consideration of these conditions.. It is necessary to weigh the probable effect of all of the elements in the situation, the more important of which have already been discussed in this report.

The questions of greatest importance concerned in a long-time view of agricultural production are: (1) What are the prospects for a continuing outlet for such staple export products as wheat, cotton, and tobacco, as compared with those that now find their entire market outlet at home, such as dairy products, vegetables, and, with minor exceptions, our meat products? (2) What are to be the changes in the volume of our total agricultural output? (3) What changes are ahead in the proportion of our total agricultural output produced for the market and the part produced for use in farm homes? (4) What changes are to be looked for in the organization and operation of farms in terms of size, tenure, farm practice, and the economic status of the operator and his family.

Considering these questions in their turn, the one which probably affects agriculture most vitally just now is that with reference to the future importance of the world market. It is not at all conclusive that the downward trend of the last three years in our export trade will characterize that trade for the immediate years ahead. There is at least some hope for relaxation of the restrictions upon international trade, to the extent of making a somewhat freer market for American staple products. But with whatever help may come to our farmers from this source, we can not expect the stimulating run of demand from abroad which helped so much in the recovery of American agriculture from the depression of the nineties. It is doubtful even whether we can expect as much of a stimulus from this direction as there was in the two or three years immediately following the crisis of 1920-21. All experience tends to show that trade barriers, once established, are slow to break down. Moreover, there is nothing in the world situation that would lead us to expect anything similar to the rapid industrial development of western Europe or any similar portion of the world such as took place in Germany, England, and other nations during the last quarter of the nineteenth and the first quarter of the twentieth centuries and which so greatly stimulated the development of American agriculture. Further, there is potentially much stronger competition than formerly in the supplying of food for whatever expanded industrial markets may be developed. This competition is to be found not only in the agriculture of the industrial countries which are seeking to make themselves nationally self-sufficing in food but from the great surplus agricultural countries.

On the other hand, it seems obvious that we shall continue for an indefinite period to export a surplus of our staple commodities such as wheat, cotton, tobacco, and lard. It is unlikely and undesirable that American producers shall withdraw from these markets. The situation does appear to mean, however, that there will be a growing preponderance of the domestic market as the basis for agricultural production. This means that there will be a progressively larger proportion of our land and labor devoted to dairy, fruit, vegetable, and meat production as the growth of our population increases the need for these commodities.

The answer to the question as to whether or not our total agricultural output will increase or diminish depends very largely upon the continuation or abatement of the economic depression. Depressions almost invariably reduce the volume of commercial agricultural output. This has been most noticeable, of course, in our cash crops. The shift from commercial production toward self-sufficiency tends to reduce volume by reducing the efficiency with which farmers produce. The recovery of American industry to something like its recent volume and a progressive development from that point would be the greatest stimulus to sustained and increased agricultural production. The present tendency for farm population to increase by additions from the ranks of the unemployed will probably have but little effect in increasing the total commercial output.

There is an important question as to whether the present depression will permanently impair the productive capacity of American farms. The necessity to reduce costs by delaying repairs and replacements of machinery and in-

improvements and to neglect the maintenance of fertility has frequently been pointed out. On the other hand, the depression is leading farmers to consider noncommercial means of maintaining and improving the fertility of their lands. The use of leguminous crops and of various means of preventing erosion are being practiced and undoubtedly can be developed to a greater extent. It is probable that the extreme need to obtain a living from the land will have some effect in staying the process of deterioration that has been going on in some areas. On the whole it does not seem probable that our agricultural resources will be so seriously injured as a result of the conditions we are now passing through as to prevent an increase in the rate of production if the added output is needed.

The present drift toward a larger degree of self-sufficiency, not only on so-called marginal lands but throughout our best agricultural areas, raises the question as to whether this change will be permanent. It seems evident that the extreme adjustment in the direction of self-sufficiency which now is prevalent is temporary and that there will be a shift in the other direction as soon as agricultural prices improve. The extent to which this readjustment will go will probably depend greatly upon the degree to which the market recovers to give stimulus again to specialization and commercial production. It will certainly not be a uniform adjustment in all areas.

This raises the question as to the regional and local adaptability of our farm land for self-sufficing farming. It is obvious that the new areas taken into cultivation for the growing of staple crops as a result of the latest wave of mechanization are but poorly adapted to self-sufficing agriculture. The scanty rainfall and short growing season characterizing much of this area do not support the range of production necessary for anything like a satisfactory live-at-home program. The disparity between prices of products and transportation costs is a factor in encouraging an increase in local self-sufficiency.

In the future organization of the farm itself one of the first considerations is that of tenure. History shows that every major depression has been accompanied by a considerable decrease in owner operation and a corresponding increase in tenant operation. The rising rate of mortgage foreclosures indicates that the same results are following in the present emergency. It is to be hoped that adjustments can be made that will keep this shift in the ownership of farms to a minimum. Undoubtedly there will be a considerable amount of change of ownership through the purchase of farms by farmers. Public measures to make this development as easy and as safe as possible are needed.

To the extent that self-sufficiency in our farm-production program gains a progressively larger place, we may expect a moderate diminution in the average size of farms. The extent to which this goes forward will depend primarily upon the recovery of employment in industry and the easing of the pressure of urban population upon agriculture.

One of the most important ways in which the present depression is influencing agriculture is in the method of production that farmers find it feasible to follow. Efficiency in production, to the extent that it comes through the use of labor-saving machines and the methods which go with such machines, tends to follow a high degree of specialization, and specialization itself thrives on an adequate market outlet. Although it is true that within certain limits costs are lowered by such methods, it is equally true that the cash expenses that these methods make necessary can not be carried successfully on an extremely low price level.

LEGISLATION

The probability that the course of agriculture may be more influenced by legislation in the future than in the past must be kept in mind when considering the long-time outlook. State, Federal, and international action is being taken to an unprecedented degree.

A survey of the world shows an amazing number and variety of governmental acts designed to change the trend of agricultural production and marketing. Many bear very directly upon foreign competition and demand for American farm products. Many of these governmental efforts to change the economic and social trend are not the product of radical governments, but rather the deliberate action of old and so-called conservative countries.

The agitation for more control of agriculture has been under way in the United States for more than a decade. The present acuteness of the depression has again stimulated the demand for action.

Many fundamental questions of national policy are now receiving special attention. These policies include basic matters of production control, market-

ing, foreign trade, credit, and other finance. The legislative proposals are of two general groups: (1) Emergency relief, and (2) general policies that bear upon the problem of the disparity between prices of farm products and costs of farm operation and maintenance.

National policies are not usually changed quickly. Policies regarding transportation and foreign trade ordinarily can not be expected to be reformulated in a short time. The fact that the depression is not confined to agriculture leads to legislative action affecting other industries that may also definitely affect agriculture.

In properly appraising the outlook it is important to keep legislative changes in mind.

THE FARM FAMILY LIVING

(A report of a joint committee representing the Bureau of Home Economics, the Bureau of Agricultural Economics, and the Extension Service)

The balance of farm income left as a return for the operator's capital, labor, and management averaged \$847 in 1929, \$566 in 1930, \$342 in 1931, and undoubtedly declined to a still lower level in 1932. There has been considerable variation in the changes in net farm income in different parts of the United States. Gross income from agriculture declined from \$11,950,000,000 in 1929, to \$6,955,000,000 in 1931, and to about \$5,240,000,000 in 1932. The decrease from 1931 to 1932 amounted to 25 per cent. These figures relate to income from farm production each year, including the value of products sold plus the value of products retained for use in the farm home. Reductions in expenditure for the farm business in 1932 were not as great as reductions in gross income, and hence net income from farming was more than 25 per cent lower in 1932 than in 1931.

Income from farm production for 1933, assuming approximately normal crop conditions and some improvement in business, is not likely to be materially different from what it was in 1932. This estimate does not of course take into account any change which might be brought about by legislation.

Incomes received by farm families from industries other than agriculture have likewise been greatly reduced. Eleven per cent of the men and boys and 37 per cent of the women and girls living on farms and reporting gainful occupations were engaged in industries other than agriculture in April, 1930. (Homemaking is not included among the gainful occupations by the Bureau of the Census, but is treated separately in Census reports.) The earnings of the large number of persons living on farms and receiving incomes from other industries at that time were large enough in certain regions, especially in New England and the Middle Atlantic States, to provide an important supplement to family income when pooled with money income available from the farm.

Opportunities for such earnings have greatly decreased since the early months of 1930 in view of the general reduction in industrial employment and wages. It would appear that in most sections of the United States persons living on farms will probably not earn enough in industries other than agriculture in 1933, to change materially the economic status of their families, unless there is a marked revival in business activity in the near future.

The effort of farm families to increase their cash incomes through increasing production of food and textile products in forms immediately available for consumer use to be sold at roadside stands and through farm women's marketing organizations and other agencies will undoubtedly continue throughout the coming year. The use of different forms of barter to increase real income is reported from many sections of the country, and is likely to continue.

Retail prices paid by farmers for commodities bought for family maintenance continued to decline in 1932. The index dropped from 121 per cent of the 1910-1914 average in December, 1931, to approximately 107 per cent in December, 1932. All groups of commodities declined, the greatest decreases occurring in prices for furniture and clothing and the least in prices for fuel for the house and for the automobile. The decline during the latter half of 1932, however, was much less than during similar periods of the last two years. Trends in retail country prices during the coming year will depend upon the magnitude and direction of changes in wholesale prices. Wholesale prices showed greater stability in the summer of 1932 than in the summer of the preceding two years. During the last three months, however, the decline in average wholesale prices has been as great as in the last three months of 1931, and prices have now reached a level below the low point of June, 1932.

The course of the agricultural depression has brought about a decrease in the proportion of the family food supply purchased, as well as pronounced

decreases in expenditures for house furnishings and equipment, for clothing, for operation of the automobile, and for recreation. The small expenditures of many families for medical care probably mean inadequate protection from disease except in sections of the country where community medical facilities are available.

Recent studies of farm family living among groups with low money incomes show that from 26 to 41 per cent of total expenditures were devoted to food in different communities, from 14 to 36 per cent to clothing, depending upon the prevailing size of family in the group, (larger families allotting a much greater proportion of the total to clothing than smaller ones) from 6 to 19 per cent to house operation, from 2 to 9 per cent to furnishings and equipment, from 2 to 10 per cent to medical care, from 3 to 16 per cent to education, recreation, and community welfare, and from 6 to 19 per cent to miscellaneous items.

Farm families accustomed to a level of living which they can not now procure, even at current retail prices, without spending much more money than their present incomes warrant, will probably not make, however, the same distribution of expenditures that would be made by families accustomed to very low cash incomes. Some of them will utilize barter in so far as it is practical to increase real incomes. Others will increase the purchasing power of their dollars by buying through cooperative purchasing associations. Reports to the Federal Farm Board indicate that the most pronounced increase in cooperative purchasing for the use of farm families has taken place in purchases of gasoline, lubricating oil, and grease. In the last year there has been a decided increase in the number of cooperative marketing associations purchasing gasoline and lubricating oil for their members, as well as in the number of consumer cooperatives handling these items. Three cooperative purchasing organizations dealing in nothing but gasoline, oil, and grease reported business for 1930-31 ranging from \$600,000 to \$1,600,000.

The growing disparity between prices received by farmers for foodstuffs produced and prices paid for articles of food purchased at retail has led farm families to increase their production of food for home use. Since 1929 prices of food materials purchased by farmers have declined 38 per cent, while prices received at the farm from the sale of grains have declined 62 per cent, meat animals 58 per cent, fruits and vegetables 46 per cent, dairy products 49 per cent, and poultry products 55 per cent. The specific adjustments in the proportion of the various types of food purchased and home produced, which may well be made by any individual family, depend upon the type of farming, upon the relative cost of food when home produced and when purchased, and upon the possibility of the farm family assuming the task of preparing the raw materials for home consumption. For example, many farmers who raise wheat and are near a small mill can have their own wheat ground or can exchange it for flour to advantage. If the toll for grinding is as low as one-eighth (the legal toll in Virginia, and the usual toll some years ago when custom milling was more prevalent) a farmer can obtain 1 barrel of flour (196 pounds) for about 5 bushels of wheat if he takes no bran or shorts. At the United States average farm price in December, 5 bushels of wheat would be worth only \$1.58. This compares with the United States average retail price of 3 cents per pound (\$5.88 per barrel) for flour in November, and with a wholesale price of around \$3 per barrel for straight flour at principal milling centers during the same month. Although perhaps most farmers can not have their wheat ground for a toll as low as one-eighth, a large enough number are finding it worth while to have custom grinding done that the business of the small mills has increased greatly during the last two years. One barrel of flour, together with the other necessary ingredients, is sufficient to make between 260 and 300 1-pound loaves of bread, which, at the average of retail prices prevailing in the United States, would cost in the vicinity of \$18. These comparisons are indicative of the type of savings which many farmers are forced to make because of the very low returns they can obtain for their labor in producing farm products, and the relatively high costs of goods and services in retail markets.

Prior to 1929, prosperous farm families were purchasing from one-fourth to more than one-half of their food supply. About 30 per cent of their expenditures for food went for bread, flour, and cereals; about 18 per cent for vegetables and fruits; about 18 per cent for sugars and molasses; about 14 per cent for lean meat and fish; about 10 per cent for fats; and about 10 per cent for miscellaneous articles. Preliminary figures from the Division of Crop and

Livestock Estimates indicate that in 1931 about 30 per cent more wheat was ground at home or exchanged at mills for flour than in 1929; over 45 per cent more apples were kept for home consumption; about 14 per cent more eggs; and about 5 per cent more milk. Farm gardens were larger and more productive. Farm slaughter of meat animals, especially of hogs, was greatly increased. Reports indicate that in 1932 production of these items for home use was even greater. For instance, larger gardens and increased home slaughter of cattle and hogs have been particularly marked. Meat clubs have been growing in number, a heavier canning and preserving program has been carried out, and bread baking, churning, cheese making, and other home production activities have been revived. In some areas a live-at-home program is being followed in so far as is feasible; in others the trend toward self-sufficiency for the individual farm family will undoubtedly continue during the coming year.

Farm families are taking more interest than ever before in planning for the efficient production and conservation of an adequate yearly food supply. Plans published in various States for guiding home food production have been made on the basis of very liberal adequate diets, as many farm families have the resources for providing themselves with a generous varied food supply. It is, however, important to recognize that during the coming year many farm families will not have such resources. If a farm has specialized in nonfood crops or in a single commodity to the exclusion of garden, poultry, dairying, or livestock enterprises, the home production of an adequate diet is impossible, until certain changes are made in the farm-production program. Until such adjustments can be made and where much of the food must be purchased, the economical but adequate dietaries recommended by the Bureau of Home Economics for use in urban relief work may well be made the basis for planning the farm family's food supply. It is also important to recognize that long-standing food-consumption habits are not quickly changed. There is much less difference between the per capita expenditures of low-income and high-income farm families for food, than for the other major items in the family budget.

Long-time planning is necessary to make appreciable changes in food-production practices. Aside from quick-growing vegetables, the production of the items which enter into a well-planned diet require considerable capital investment and often several months must elapse before the food products are available for consumption. The year 1933 will undoubtedly see still more farm families mobilizing their resources according to a plan suited to their individual needs, to increase the home production of their food supply for the whole year. In many sections of the country this will entail greater emphasis on garden, orchard, dairy, poultry, and livestock enterprises than heretofore. It will also require a well-planned program to can, dry, store, or otherwise preserve products for out-of-season periods.

Opportunities for increasing the home production of other consumption goods are more limited than those for increasing the home-grown food supply. Home sewing has increased during the last year, and, on some farms where sheep are raised, skills and equipment little used for many years are being called upon to convert home-grown wool into clothing and bed coverings. Soap making for family use has been increasing and will probably continue to do so. Farm-produced fuel is being used to an increasing extent; lumber produced on the farm wood lot is being used for repairs to the house and for furniture making.

All the evidence points to a continuance of and, in many instances, an extension of the live-at-home program in 1933. In as far as possible, until their incomes increase, farm families will have to depend upon the development of their own resources for their family living.

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Prepared by the Staff of the Bureau of Agricultural Economics

Assisted by Representatives of the Agricultural Adjustment Administration, the Extension Service, and the State agricultural colleges and extension services

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ANNUAL OUTLOOK CONFERENCE DATE ADVANCED

The preparation of this report, presenting facts useful to farmers in planning for 1934 production, has been completed this fall in order to make the information available for use during the early winter as well as in the spring. Previous outlook conferences have been held in January following the completion of the crop estimates on the year's production. The conference was advanced to October after consultation with other Federal and with State agencies because it was agreed that the report would be more useful if distributed early in the fall.

This report takes the place of the report for the Southern States formerly issued in the fall, and of the annual report usually issued by the Bureau of Agricultural Economics in February. Most of the State agricultural colleges and extension services usually prepare reports that apply particularly to conditions in their respective States which are distributed by the extension services of the States.

The following report summarizes facts not readily available to farmers and indicates the probable trends of production, distribution, and markets, so far as it seems feasible to indicate such trends at the present time. These statements will have to be modified in view of future developments and particularly in instances of decided change in policies regarding agricultural adjustment.

DOMESTIC AND FOREIGN DEMAND

SUMMARY

The domestic demand for most farm products has improved noticeably since March of this year and seems likely to improve further in 1934. In view of the relatively high level of activity in industries utilizing agricultural products, it seems probable that further increases in the demand for farm products will be dependent primarily upon a more pronounced recovery in the output of industries using nonagricultural products, particularly iron and steel. As a result of the agricultural adjustment program, total agricultural production may be held to about the same level as in 1933 when production, especially of grain, was influenced by unusually low yields in some crops. The reduction of large surplus stocks of raw materials is a necessary prerequisite to maintaining any substantial advance in price. Future credit and monetary policies will also be a major factor influencing price movements.

The prospects for improvement in the demand for American agricultural products in 1934 are less favorable in foreign than in domestic markets. Recently increased import duties and more stringent import quotas have added further to the difficulty of marketing our products abroad. There is no immediate prospect of a substantial reduction in these barriers. There has been a considerable improvement in industrial activity since the summer of 1932 in the countries affording the principal foreign outlets for American agricultural products, but if this improvement is to be maintained and eventually reflected in improved demand for American farm products, it would appear that there must be an expansion in the foreign outlets for European industrial goods. This depends, in turn, upon a higher level of prices for primary agricultural and mineral products in the surplus-producing countries.

DOMESTIC DEMAND

CONSUMER INCOMES

Incomes of urban consumers, which are the chief factor influencing the domestic demand for farm products, declined approximately 50 percent from the peak level of 1929 to the first part of 1933. The number of workers employed declined approximately 40 percent during this period. Employment of those engaged in financial, clerical, public utility, and service work, in the first 4 months of 1933, averaged 75 percent of the 1929 level but those engaged in the production of raw materials, transportation, manufacturing, and construction averaged only 50 percent of that level. It is estimated that in September urban incomes had increased approximately 17 percent since the low point reached in March and April, and that unemployment had been reduced by more than 25 percent. Greatest improvement has been shown in the manufacturing and mining industries. Factory employment, according to the Federal Reserve Board index, increased from about 57 percent of the 1923-25 average in March and April to 74 percent in September. In the textiles group, employment increased from 65 percent in March to 88 percent in September. In the iron and steel group the increase was from 48 percent in March to 75 percent in September. In the transportation group, reflecting automobile production, the increase was from 42 to 53 percent. The American Federation of Labor estimates that total unemployment, including the number normally unemployed, has been reduced from 13,700,000 in March to 10,100,000 in September. Two factors growing out of the program of the National Recovery Administration—the practice of working shorter hours, thus distributing existing employment among a larger number of workers, and the rise in wage rates through the adoption of minimum wages under the various codes—have appreciably increased both employment and pay rolls. Since July employment has continued to rise despite a falling off in industrial production. It is probable, however, that further stimulus to employment will be dependent upon an improvement in industrial output.

Industrial production, as measured by the Federal Reserve Board index, advanced from a low of 60 percent of the 1923-25 average in March of this year to a peak of 100 percent in July, but has since declined to 84 percent in September. A comparison of the level of activity in those manufacturing industries that use primarily agricultural products with the level of activity

in industries that use primarily nonagricultural products indicates a substantial difference in the probable influence of these two groups of industries upon the level of incomes of urban consumers in 1934. In view of the large output attained in the former it seems likely that the chief stimulus to increased consumer incomes must come from industries using nonagricultural products.

ACTIVITY IN INDUSTRIES USING AGRICULTURAL PRODUCTS

In the group of manufacturing industries using agricultural products production advanced from 87 percent of the 1923-25 average in March to 122 in June, a level that has never before been reached. Prior to June 1933 the highest level of production in this group of industries was 114 percent, attained in April 1929. This high level of output, together with the sharp advances in retail prices, suggests that the peak reached in June may not again be reached within the months immediately ahead. The substantial expansion in output seems to have been stimulated by the existence of low stocks of finished goods, anticipation of higher prices, and expectation of higher costs of operation under N.R.A. codes. The impetus to the expansion lost its force after June and the index of output for these industries fell to 104 in September. As no stimulation similar to that which existed from March to June seems probable in the next few months, the activity of this group of industries in 1934 is not likely again to reach the peak of June. Nevertheless with a further improvement in industrial employment and pay rolls and no substantial further increase in the retail prices of textiles, the output and pay rolls of industries using agricultural products will probably be higher in 1934 than in 1933 and the average for the season may be close to the level of September.

The high rate of activity reached in the industries using agricultural products was due primarily to the expansion in output of textiles involving cotton, wool, silk, and rayon.

Cotton consumption, expanding rapidly following the banking holiday and the suspension of gold payments, advanced from 87 percent of the 1923-25 average in February to a peak of 139 percent in June. Since the latter month consumption has declined to 103 percent in September. The close of the 1932-33 cotton season apparently found domestic mills operating at a rather high rate of activity with a very large volume of unfilled orders and moderate stocks, but with sales at low ebb. Stocks of textiles in the hands of wholesalers, retailers, and consumers were probably somewhat greater than in 1931 or 1932. The adoption of the cotton-textile code resulted in a considerable increase in the number of workers employed and in an increase of more than 50 percent in the average hourly wage rates. It seems probable that total mill consumption in 1934 may be somewhat larger than in 1933 provided retail prices of cotton goods are not increased substantially over present levels.

Textile activities in wool, silk, and rayon have exhibited much the same course as in cotton. In June and July the wool industry was reported to be more active than at any time since the rush of activity that followed the World War. Silk and rayon deliveries also indicate a very substantial improvement since February and March. As in the case of cotton, it is probable that activities in wool, silk, and rayon reached a level, in midsummer, higher than may be expected to exist on the average during 1934.

The output of some manufacturing industries using agricultural products, such as meat-packing establishments, flour mills, and tobacco-processing plants, remains relatively stable from year to year and is not expected to show any material change in 1934 as compared with 1933.

ACTIVITY IN INDUSTRIES USING NONAGRICULTURAL PRODUCTS

It seems probable that any stimulus to a further increase in industrial production must come primarily from industries using nonagricultural products in which output showed a far more drastic decline than did the output of industries using primarily agricultural products. Output of this group is still substantially below that for manufacturing industries using agricultural products, even after advancing from a low of 42 percent of the 1923-25 average in March to a peak of 91 in July. By September the index had decreased to 73 percent. The output of this group of industries is dominated largely by the output of iron and steel. As 50 percent of the total output of iron and steel is normally taken by the railroad, construction, and automobile industries, the prospects of these

three lines of activity will be of particular significance in appraising the extent to which industries using nonagricultural products will contribute to an increase in the income of urban consumers.

Purchases of railroad equipment and expenditures for maintenance, both of which have been sharply curtailed in recent years, may afford a considerable stimulus to the iron and steel industry. The Federal Coordinator of Railroads has received bids for approximately 1,000,000 tons of steel rails and fastenings for meeting current needs of the railroads. Any considerable increase in traffic in 1934 would probably be accompanied by a rapid increase of additional expenditures for normal replacement needs and for meeting deferred maintenance and obsolescence. This would be reflected in increased orders for rails and in larger wage disbursements for maintenance of way and structures, as well as of equipment. Deferred maintenance of equipment, however, may be made up partly by the purchase of new rolling stock, orders for which practically ceased in 1932. Although railroads apparently have sufficient rolling stock in repair for meeting present traffic requirements, retirement of equipment during the depression to date indicates the probable need for substantial purchases of locomotives, passenger-train cars, and freight cars, should the volume of traffic be considerably increased. The timing of these orders will depend on the rapidity of increase in traffic.

Increased construction activity is likely to contribute appreciably to an increase in consumer incomes in 1934. Contracts awarded reached a low of 14 percent of the 1923-25 average in March, and by September had advanced to 28 percent. An increase of 17 percent in total contracts was shown from August to September, representing mainly a gain of publicly financed projects. The Federal public works program involving an expenditure of \$3,300,000,000, chiefly for construction, will be an increasingly important factor in expanding total construction in succeeding months as advances from this fund crystallize into definite contracts.

Residential construction, which declined to the abnormally low level of 8 percent of the 1923-25 average in the first quarter of 1933, advanced only to 13 percent in September. As purchasing power increases and the prospects for steady employment strengthen, home building which has been held back by the uncertainties of recent years is likely to increase considerably from the present low level. New Federal facilities for residential loans may be an important factor in stimulating activity in the spring of 1934.

Modernization and, in some lines, expansion of plant equipment may lead to some increase in factory building, but capacities in excess of present business requirements will tend to retard the rate of increase. No significant increase in the construction of apartments, hotels, office, and commercial buildings seems probable in 1934.

With the present stocks of automobiles not excessive and exports likely to be maintained, the prospect of an improved domestic demand indicates increased production and employment in the automobile industry in 1934. Although it is estimated that production in 1933 will exceed production in 1932 by approximately 50 percent, the number of motor vehicles scrapped or abandoned is expected again to exceed sales of new cars by about 1,000,000 units. With the decline of about 10 percent in the number of cars and trucks registered since 1930 and the advanced age of many of the motor vehicles now in use, a relatively strong domestic demand for automobiles and trucks is indicated for the coming year.

In addition to the increased demands of the railroads, the construction, and the automobile industries, miscellaneous requirements may be higher. Ship building, which has used very little steel in recent years, is being stimulated by the naval building program. The low level of machinery purchases by farmers in the last 4 years also indicates that any material improvement in farm income will be accompanied by some increase in the purchase of farm machinery, but this may be retarded for a while by the large amount of credit already outstanding to farmers both for machinery and for other short-term indebtedness. The depreciation of the dollar in terms of foreign exchange may be some stimulus to the export of steel products and of agricultural machinery.

In summarizing the outlook for the iron and steel industry for 1934, it seems probable that production will be somewhat higher than in 1932 or 1933 and perhaps larger than in 1931. Output will be dependent, in part, upon the credit facilities for financing long-term projects. At present it is difficult to

float new issues of long-term securities but governmental efforts in providing advances to railroads and for urban and rural real-estate mortgages, may tend in part to offset this unfavorable factor.

Some additional contribution to the output of industries using nonagricultural products may be expected from the lumber industry. The volume of lumber cut declined to a low of 20 percent of the 1923-1925 average in February and advanced to 46 percent in July and August, but in September dropped back to 36. The rise in output was stimulated, in part, by the low level of stocks at the beginning of the year. The trend of the lumber industry in 1934 will tend to follow that of construction and the need for lumber in industrial production. It seems probable that during the coming year there will be a gradual improvement in consumption which should result in a higher output than in 1933. The sharp rise in lumber prices from 104 percent of the 1910-14 average in February to 154 percent in September, however, may be a factor tending to retard consumption.

Income from agricultural production, including benefit payments, is likely to make some contribution to an increase in business activity. Gross income of farmers for 1933 has been estimated at \$6,360,000,000 an increase of about 24 percent over 1932. With the further improvement of consumer incomes in urban centers which is anticipated in the coming year, the gross income of farmers in 1934 should show some further improvement. The influence of this higher level of farm income may be expected to increase the demand for industrial products used on farms such as machinery, building repairs, fencing, etc.

PRICES

Commodity prices, similar to industrial production, have shown a marked recovery since the early part of the year. Wholesale prices after declining from 140 percent of the 1910-14 average in September 1929, reached their post-war low point of 87 in February 1933. A rapid rise from this low point brought prices back to the pre-war level in July, followed by a slightly upward trend which carried the index to 103 in September.

Prices of farm products (wholesale) which had declined further than the prices of other products in the 3½ years ended in February 1933, advanced 47 percent from their low point to July, but since that time they have lost a considerable part of this gain. Although the advance in the market prices of farm products from 57 in February to 80 percent of the pre-war average in September was more rapid than the advance in nonagricultural products, the prices of farm products in relation to pre-war remained lower than prices for any other specified group of commodities.

The rise in individual farm-product prices has varied greatly, depending primarily upon the influence, in relation to each commodity, of currency depreciation, increase in domestic demand, and alterations in supplies. An examination of the influence of these various factors upon prices provides a clearer basis for appraising the future trend of prices.

With the suspension of gold payments in the United States, there was an immediate response in the prices of most export and import commodities. The index of farm prices of grain advanced from 36 percent of the pre-war average in March to 94 in July, while cotton and cottonseed advanced from 48 to 84 percent. The advance in the price of export and import commodities, such as wheat, cotton, and wool, resulted primarily from the fact that, after adjustments for changes in exchange rates, prices of products entering into international trade must be approximately equalized in all countries once account is taken of transportation costs, tariffs, and other hindrances to the flow of those commodities in international trade. World prices also strengthened during this period, and in many export and import products the advance in prices was therefore greater than that which represented purely an adjustment of exchange rates.

The influence of the depreciation of the dollar in terms of foreign currencies has likewise been a factor in stimulating domestic demand. The higher prices in agricultural commodities influenced by foreign-market conditions have increased the purchasing power of farmers for the output of industry. Increased industrial output with higher pay rolls in turn has stimulated the demand for agricultural products. To the extent also that dollar depreciation has stimulated industrial exports, and hence industrial production, urban incomes have been further increased and their demand for farm products has been correspondingly enlarged.

To the extent that the prices of American commodities are affected by market conditions abroad, a further depreciation of the dollar relative to foreign currencies would raise domestic prices. The reverse of this process would be expected if the dollar should appreciate relative to foreign currencies, but it is probable that any sharp upward movement in the dollar could be prevented by the purchase of gold abroad under the policy recently announced by the President.

The influence of domestic demand, as measured by the increase of approximately 17 percent in urban incomes since March upon agricultural prices, has been reflected in larger money expenditures for products of the farm. Unlike the rapid advance in prices of export commodities, most of the commodities whose prices are largely determined by changes in the level of domestic demand have advanced in price only about as rapidly as the income of urban consumers. Thus, in the upward movement of prices which culminated in midsummer, farm prices of meat animals advanced from 56 percent of pre-war in March to 66 in July, farm prices of dairy products from 59 to 71 percent, and poultry products from 54 to 67 percent. In the case of many of these commodities heavy marketings have tended to check advances. With any further recovery of industrial activity, increased employment will result in an increased demand for farm products.

Reductions in prospective market supplies arising from drought, the production of principal crops in 1933 being the smallest since 1901, have had an appreciable influence in raising the prices of many farm commodities. It is not likely that total agricultural production in 1934 will be greatly different from that of 1933. Whereas, the unusually low yields of some crops curtailed production in 1933, the acreage-control program of the Agricultural Adjustment Administration and the measures that may be adopted to control the production of hog and other livestock products will be factors in holding down output in 1934.

In view of the recent marked advance in prices of nonagricultural products and the accompanying decline in prices of farm products, it seems probable that during the coming year prices of farm products will rise in relation to prices of nonagricultural products. The program of the National Recovery Administration appears to have hastened price advances in manufactured products partly as an adjustment to higher production costs. After most of those adjustments have been made, competition in the face of surplus productive capacity will probably retard price advances of nonagricultural goods to a slower rate relative to prices of farm products and other raw materials. As more definite knowledge of costs under the new codes is ascertained, the removing of this uncertainty may tend to increase commitments for raw materials, and this will be reflected in increased demand for farm products. With many of the costs of distribution, particularly transportation, remaining relatively stable, a rise in the central-market prices of farm products will be reflected in a proportionately greater increase in the prices received at the farm.

In summarizing these various influences on prices it appears that farmers in 1934 may anticipate a somewhat higher level of prices for their marketable commodities as well as improvement in the exchange value of their output. It should be borne in mind that the extent and character of the price rise will be affected by future monetary and credit policies which may alter substantially the conclusions drawn from any analysis of present conditions.

CREDIT CONDITIONS

The expansion of credit in the recovery period of former business cycles has been largely stimulated by the purchase of investments and by loans on securities on the part of commercial banks. Since the beginning of March investment holdings of weekly reporting member banks in 90 leading cities have increased only by about \$500,000,000, whereas loans on securities have decreased slightly. Commercial loans have increased by about \$400,000,000. Deposits have increased but mostly on account of a large return of currency withdrawn prior to the banking holiday. On September 22, 1933, there were approximately 2,500 banks, exclusive of mutual savings banks, having deposits of about \$1,765,000,000 which had not been reopened since the banking holiday. Should the deposits of these banks be released in part, as well as those of other banks closed prior to the banking holiday, a considerable increase in bank credit could be achieved.

Substantial recovery in the output of the heavy industries will tend to be retarded until long-term financing facilities show greater improvement. Conditions of the capital market affect industrial output and employment chiefly through their influence upon construction and upon the output of the iron and steel industry. Rapid advances in the average prices of bonds and stocks represent a recovery to about the levels of the fall of 1931. Despite this improvement, the capital market has shown little tendency to absorb new long-term issues. The annual volume of new security issues declined from \$10,091,000,000 in 1929, to \$1,165,000,000 in 1932. The total for the first 9 months of 1933 amounted to only \$507,000,000 compared with \$903,000,000 in the same period in 1932. Lack of adequate credit facilities to finance the purchase of durable goods whose cost must necessarily be amortized over a long period are, in part, being offset by special credit facilities provided by the Federal Government. These include the activities of the Federal Home Loan Board in providing mortgage funds for residential construction; farm mortgage loans from the Farm Credit Administration; and loans from the Emergency Public Works funds for (1) loans to purchase railroad equipment, (2) advances for road construction, (3) loans for public works, and (4) direct expenditures on Federal construction projects.

In appraising future credit development, there seems to be little immediate prospect for any material expansion of commercial bank credit unless special developments may foster this movement. Commercial banks, despite their large surplus legal reserves, have not made any substantial increase in their investment holdings and have limited their new advances primarily to short-term liquid loans.

Although commercial banks are not expanding credit, an adequate basis exists for such expansion. Member-bank reserves were approximately \$850,000,000 in excess of legal requirements in October and the Federal Reserve banks through their open-market purchases of Government securities have been adding approximately \$15,000,000 per week to existing reserves. This surplus of reserves is reflected by unusually low interest rates, commercial paper rates being quoted at $1\frac{1}{4}$ percent in October as compared with 2 percent a year ago and an average of 4.27 per cent in the period of 1923 to 1927.

Improvement in the capital market, which will facilitate the refunding of bank loans made for capital or semicapital purposes, will encourage banks to advance more funds for sound loans of this character. Furthermore, the removal of the uncertainty that prevails as to the eligibility of banks to join the depositors' guarantee fund may lead to greater expansion of credit after the first of the year.

STOCKS OF RAW MATERIALS AND MANUFACTURED GOODS

The trend of prices will be influenced to some extent by the level of existing stocks of both raw materials and manufactured goods. Stocks of raw materials usually reach their peak at the lowest point of the business cycle and tend to decrease as increased industrial production results in greater consumption. Stocks of manufactured goods, on the other hand, usually reach their peak soon after the high point of the business cycle and decline as industrial production decreases. Thus domestic stocks of raw materials reached a high point during the depression of 1921 and fell off during 1922 and 1923. From 1923 to 1932 there was a fairly regular increase in domestic stocks including both raw materials and manufactured goods. Since 1932 stocks have decreased slightly. The trend in the stocks of manufactured goods has been quite different from the trend in raw-material stocks. In July 1933 the combined stocks of all manufactured goods were reported as 105 percent of the 1923-25 average. The domestic stocks of manufactured food products (meat products, wheat flour, butter, cheese, and milk) were reported in August 1933 as 126 percent of the 1923-25 average and the stock of unprocessed foodstuffs (wheat, corn, oats, barley, rye, sugar, eggs, poultry, apples, fish, and coffee) were reported at 213 percent. Domestic stocks of raw materials as a whole were reported at 166 percent in August 1933.

The reason for the decided difference in the stocks situation between raw materials and manufactured goods is simply that agricultural production has been maintained during the depression whereas there has been a drastic decrease in industrial production. From 1929 to 1932 industrial production dropped about 48 percent. Agricultural production remained about constant,

Crop marketings dropped about 25 percent and marketings of animal products dropped 12 percent.

Although some of the increased production of manufactured goods during the last summer has gone into increased stocks there also appears to have been some increase in consumer purchases of most groups of commodities, particularly clothing and other textiles. During the summer consumers were urged to buy clothing and many other commodities before prices went up. Retail sales of clothing and textiles were stimulated during July and August and probably many consumers have stocked up for a few months ahead. Other consumers who were not able to take advantage of the low prices will come into the market as their incomes are restored.

From 1923 to 1932 there was a strong upward trend in the world stocks of most important foodstuffs and raw materials. A combined index of the world stocks of coffee, copper, cotton, rubber, silk, sugar, tea, tin, and wheat indicates that in August 1921, stocks were 145 percent of the 1923-25 average. From that time until June 1923, they declined rapidly reaching a low point of 84 percent. From June 1923, until May and June 1932 there was a fairly steady increase in world stocks. In May and June 1932 the stocks index was 285 percent of the 1923-25 average. This increase in stocks has come about in spite of a sharp drop in world prices of these commodities beginning about the first of 1926. At the beginning of 1926 world prices of these commodities were approximately 100 percent of the 1923-25 average. They dropped rather gradually through 1926 until the end of 1929 when they were about 70 percent of that average; through 1930 and 1931 the drop in price was at an accelerated rate and at the end of 1931 the price had reached a level of about 30 percent of the 1923-25 period. There was some further decline in prices during most of 1932 in spite of a temporary increase during the early fall.

The increase in world stocks of foodstuffs and raw materials from 1923 to 1929 was largely the result of increased production of these commodities. From 1929 to 1932 the situation was aggravated by a severe drop in world demand for these products and consequently a falling off in consumption in spite of low prices.

Since the middle of 1932 there have been indications that the peak of world stocks has been passed and that world prices of the basic foodstuffs and raw materials have started on an upward trend. The world-stocks index has fallen slowly and irregularly from the high point of 285 percent in May and June 1932, and in July 1933 it stood at 266 percent. The world-price index of these commodities was 24.8 in June 1932 and has increased to 39.7 in August 1933. Most of this increase can be accounted for by the drop in the value of the dollar, but even on a gold basis the August 1933 price index was higher than that of June 1932.

To summarize the situation, the peaks of both world and domestic stocks of foodstuffs and raw materials appear to have been passed, but stocks of some of the most important foodstuffs and raw materials are at very high levels. Even though production of these commodities be reduced considerably both in the United States and in foreign countries, and even though demand may be increased, any large and sustained increases in prices of these commodities will be difficult until stocks are diminished from their present high levels.

FOREIGN DEMAND

EXPORTS

The value of agricultural exports from the United States in the year ended June 30, 1933, was 22 percent less than the value of the small exports of the preceding year and 68 percent less than that of the exports of 1928-29. On a volume basis, exports were 13 percent less in 1932-33 than in 1931-32 and 32 percent less than in 1928-29.

Since the depression started there has been a marked change in the proportions of the items going into our agricultural export trade. This shift has been due chiefly to the fact that the decline in value of exports of wheat and pork has been much greater than for the other export products. In 1932-33 cotton made up 55 percent of the total value of agricultural exports, as compared with 47 percent in 1928-29. Tobacco and fruit made up 11 percent each in 1932-33, as compared with 8 percent each in 1928-29. Meats and meat products, including animal fats and oils, constituted 9 percent of the

total in 1932-33, against 10 percent in the earlier period, and grain and grain products were less than 7 percent, compared with 18 percent in 1928-29. A continuation of this trend toward a larger proportion of our exports being made up of cotton, tobacco, and fruit is to be anticipated. Trade barriers have been especially high in regard to meat and other animal products and wheat. The increase in foreign competition has also been particularly noticeable in regard to these products.

INDUSTRIAL ACTIVITY IN FOREIGN COUNTRIES

There has been a considerable improvement since the summer of 1932 in industrial activity in the countries that provide the principal foreign outlets for American agriculture. The extent of the improvement has varied greatly in the different countries. Industrial activity in Great Britain has increased during the last year but to a lesser extent than has that of the major continental countries. Certain lines, such as pig iron and steel, have shown a marked improvement since the summer of 1932 and reports in recent months point to a general revival in business activity in that country. Important gains have been made in Germany and France and apparently in Italy, although definite data as to the extent of the improvement are not available. In Germany, where the industrial production index stood at 72 in August (1928=100), compared with 58.5 in August 1932, the gain in industrial production is to be attributed in part to the Government program directed toward increasing employment. This has also been the case in Italy. In France industrial activity has shown a steady increase from the low point of 73 in July 1932 to 87 in July 1933. In the case of all these countries the expansion appears to have been principally in production for the home markets. This has been made possible in part by increasing materially the restrictions on the importation of competitive foreign goods. The smaller industrial countries on the Continent, such as Austria, Czechoslovakia, and Belgium, seem to have fared less well. Some of them have made no gains in industrial activity and unemployment continues at or near record levels. No doubt this is due to their relatively greater dependence on export outlets for their manufactured goods.

Outside of Europe the principal markets for American agricultural products are to be found in Japan and China. In Japan industrial production has been on a materially higher level in 1933 than at any time in recent years. This is especially true of the cotton-textile industry. In China industrial activity apparently has been well maintained. To a large extent the increased textile production in both Japan and China has meant a shift in the exports of American cotton to those countries instead of to Great Britain, which formerly supplied a much larger part of the oriental requirements for cotton cloth.

A continuation of the improvement thus far evidenced in the European industrial situation would seem to rest largely upon the extent to which foreign outlets may be opened to European industrial products. Normally, European countries trade predominantly with each other but this exchange has been greatly reduced by trade restrictions and it now appears that an early expansion in export outlets must be largely in the nonindustrial countries of Latin America, Asia, and other parts of the world which are dependent for their purchasing power on the returns from agriculture and mining. An expansion in the outlet for European manufactures in the United States would also contribute greatly to the ability of European countries to absorb American agricultural products.

If the gains already made in prices of some primary products, such as wool, can be maintained and further extended, a marked increase in exports from the industrial countries of western Europe would doubtless result. The reduced outlets for European manufactures can be traced to an important extent to the reduced purchasing power of the nonindustrial countries and to the high import duties and other barriers to industrial imports to which, in some of these countries the disastrously low prices for agricultural and mineral products have contributed. The agricultural program now under way in the United States, which looks toward an elimination of unwieldy surpluses and an adjustment of supply to demand should lead to a rise in prices of some products in the world market. The completion of the international wheat agreement is one step in this direction. If these and similar efforts are successful in increasing the purchasing power of the surplus-producing countries, they would provide an important stimulus to continue the industrial recovery now under way in Europe.

PRICE TRENDS IN FOREIGN COUNTRIES

A combined index of wholesale prices in the moneys of 8 foreign countries which take about 75 percent of the agricultural exports from the United States in April 1933, reached a low for the depression of 65.9 (1926=100). From April to July the index rose a little each month but fell back slightly in August to 67.9. The currencies of these 8 countries were about steady to slightly higher in relation to gold from April to August except in Canada whose money depreciated considerably in terms of gold. During this period wholesale prices in the United States increased 17 percent in terms of currency.

Price trends have varied considerably in different foreign countries. In the countries still on the gold-par standard, such as France, the Netherlands, and Switzerland, the long downward trend in prices starting in 1929 was halted in the period March to May 1933 and prices are now slightly above the early 1933 lows. In Germany prices have risen slowly but steadily since April 1933. In Great Britain wholesale prices have shown a fairly level course since the abandonment of the gold standard in October 1931, but since March 1933 prices have been moving upward. In Japan prices rose sharply after the abandonment of the gold standard in December 1931, declined during the first half of 1932, and then moved upward to a high point in January 1933, fell sharply in February, and have since leveled off. Prices in Italy have continued to move downward and in September they fell to the lowest point thus far reached in the depression.

TRADE-BARRIER TENDENCIES

There is little prospect of any substantial reduction during the coming year of the trade barriers that have grown so rapidly during the depression. Although the increases in these barriers have been largely a consequence of the depression itself, the revival that now appears under way does not seem likely to be accompanied by a return to the much less restricted trade of the years preceding the depression. Although certain tendencies now exist that operate in the direction of reduction there are counter tendencies that seem likely to prove stronger for the immediate future.

Among the tendencies that are likely to increase the severity of trade barriers during the coming year, the most important is the continued growth of economic nationalism in many countries, Germany being the most extreme example at present. The disturbed international political situation is a significant factor in shaping international economic policies. Germany has been striving in recent years to become self-sufficient in regard to food products. In regard to grains and meat this goal has almost been reached and there are some prospects of a modification of the present German policy of encouraging wheat production. In regard to other products, the movement toward self-sufficiency continues unabated. At present, oils and fats are in the forefront of the program. The import duty on lard (which has come chiefly from the United States) is now \$10.80 (gold) per hundred pounds as compared with \$0.65 in 1929.

Another tendency closely associated with economic nationalism is the adoption of measures intended to strengthen economic ties between countries that have important political associations with one another or that are in close geographic proximity. The most notable example of the first is the system of agreements made between the various parts of the British Empire at the Ottawa Conference in 1932, of which the economic effects on American agriculture have not yet fully been felt. The efforts of various European countries to conclude preferential bilateral agreements among themselves illustrate the second. All such arrangements, insofar as they are made effective by increasing the restrictions applied to outside countries, represent a tightening of trade barriers.

A third tendency making for further increase of tariff barriers is the preparation that is now being made by certain countries for tariff bargaining with other countries. Here the most notable example is France, which in recent months has greatly intensified its quota restrictions apparently with the aim of securing concessions from the countries affected by these restrictions in return for a liberalization of quotas to the level prevailing a few months ago. Thus the French quotas on certain agricultural products that are of importance in the United States export trade, such as apples, pears, and meat, have been reduced, for the last quarter of 1933, to minor or insignificant fractions of the totals during the last quarter of 1932.

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Outside of Europe the principal markets for American agricultural products are to be found in Japan and China. In Japan industrial production has been on a materially higher level in 1933 than at any time in recent years. This is especially true of the cotton-textile industry. In China industrial activity apparently has been well maintained. To a large extent the increased textile production in both Japan and China has meant a shift in the exports of American cotton to those countries instead of to Great Britain, which formerly supplied a much larger part of the oriental requirements for cotton cloth.

A continuation of the improvement thus far evidenced in the European industrial situation would seem to rest largely upon the extent to which foreign outlets may be opened to European industrial products. Normally, European countries trade predominantly with each other but this exchange has been greatly reduced by trade restrictions and it now appears that an early expansion in export outlets must be largely in the nonindustrial countries of Latin America, Asia, and other parts of the world which are dependent for their purchasing power on the returns from agriculture and mining. An expansion in the outlet for European manufactures in the United States would also contribute greatly to the ability of European countries to absorb American agricultural products.

If the gains already made in prices of some primary products, such as wool, can be maintained and further extended, a marked increase in exports from the industrial countries of western Europe would doubtless result. The reduced outlets for European manufactures can be traced to an important extent to the reduced purchasing power of the nonindustrial countries and to the high import duties and other barriers to industrial imports to which, in some of these countries the disastrously low prices for agricultural and mineral products have contributed. The agricultural program now under way in the United States, which looks toward an elimination of unwieldy surpluses and an adjustment of supply to demand should lead to a rise in prices of some products in the world market. The completion of the international wheat agreement is one step in this direction. If these and similar efforts are successful in increasing the purchasing power of the surplus-producing countries, they would provide an important stimulus to continue the industrial recovery now under way in Europe.

PRICE TRENDS IN FOREIGN COUNTRIES

A combined index of wholesale prices in the moneys of 8 foreign countries which take about 75 percent of the agricultural exports from the United States in April 1933, reached a low for the depression of 65.9 (1926=100). From April to July the index rose a little each month but fell back slightly in August to 67.9. The currencies of these 8 countries were about steady to slightly higher in relation to gold from April to August except in Canada whose money depreciated considerably in terms of gold. During this period wholesale prices in the United States increased 17 percent in terms of currency.

Price trends have varied considerably in different foreign countries. In the countries still on the gold-par standard, such as France, the Netherlands, and Switzerland, the long downward trend in prices starting in 1929 was halted in the period March to May 1933 and prices are now slightly above the early 1933 lows. In Germany prices have risen slowly but steadily since April 1933. In Great Britain wholesale prices have shown a fairly level course since the abandonment of the gold standard in October 1931, but since March 1933 prices have been moving upward. In Japan prices rose sharply after the abandonment of the gold standard in December 1931, declined during the first half of 1932, and then moved upward to a high point in January 1933, fell sharply in February, and have since leveled off. Prices in Italy have continued to move downward and in September they fell to the lowest point thus far reached in the depression.

TRADE-BARRIER TENDENCIES

There is little prospect of any substantial reduction during the coming year of the trade barriers that have grown so rapidly during the depression. Although the increases in these barriers have been largely a consequence of the depression itself, the revival that now appears under way does not seem likely to be accompanied by a return to the much less restricted trade of the years preceding the depression. Although certain tendencies now exist that operate in the direction of reduction there are counter tendencies that seem likely to prove stronger for the immediate future.

Among the tendencies that are likely to increase the severity of trade barriers during the coming year, the most important is the continued growth of economic nationalism in many countries, Germany being the most extreme example at present. The disturbed international political situation is a significant factor in shaping international economic policies. Germany has been striving in recent years to become self-sufficient in regard to food products. In regard to grains and meat this goal has almost been reached and there are some prospects of a modification of the present German policy of encouraging wheat production. In regard to other products, the movement toward self-sufficiency continues unabated. At present, oils and fats are in the forefront of the program. The import duty on lard (which has come chiefly from the United States) is now \$10.80 (gold) per hundred pounds as compared with \$0.65 in 1929.

Another tendency closely associated with economic nationalism is the adoption of measures intended to strengthen economic ties between countries that have important political associations with one another or that are in close geographic proximity. The most notable example of the first is the system of agreements made between the various parts of the British Empire at the Ottawa Conference in 1932, of which the economic effects on American agriculture have not yet fully been felt. The efforts of various European countries to conclude preferential bilateral agreements among themselves illustrate the second. All such arrangements, insofar as they are made effective by increasing the restrictions applied to outside countries, represent a tightening of trade barriers.

A third tendency making for further increase of tariff barriers is the preparation that is now being made by certain countries for tariff bargaining with other countries. Here the most notable example is France, which in recent months has greatly intensified its quota restrictions apparently with the aim of securing concessions from the countries affected by these restrictions in return for a liberalization of quotas to the level prevailing a few months ago. Thus the French quotas on certain agricultural products that are of importance in the United States export trade, such as apples, pears, and meat, have been reduced, for the last quarter of 1933, to minor or insignificant fractions of the totals during the last quarter of 1932.

Moreover, the effects of certain trade barriers now in operation have not yet been fully felt. An outstanding example is the present system of restriction of imports of bacon and hams in Great Britain which is part of a program intended to increase hog production steadily during the next few years and to effect a corresponding reduction of imports.

Some further increases of trade restrictions by the United States also appear to be in prospect. Under the National Industrial Recovery Act, the President is given authority to license imports when it appears that increased imports would otherwise interfere with the effectiveness of codes and agreements adopted under this act.

There are, however, some factors which will probably make for reduction of certain barriers in the near future. The unprecedented increase of barriers in recent years has led the Government of almost every country to realize that some reduction of the barriers of other countries is essential to the prosperity of its own export industries. Consequently there is a movement under way to make new commercial treaties involving reciprocal reduction of trade barriers. The United States Government is entering into trade negotiations with a number of foreign Governments. Progress through bilateral negotiation is at best likely to be slow. Furthermore, any tariff-rate concessions by the United States in connection with such negotiations must receive Congressional approval.

Another factor favorable to some reduction of trade barriers is to be found in the recently concluded international wheat agreement in which provision is made for a reduction of import duties and other restrictions on imported wheat when there is a specified rise in wheat prices on the world market. Furthermore, since many of the high duties and other restrictions on imported products are due to a considerable extent to the fall in world prices of these products a substantial betterment in prices would in itself lead to some reduction in import barriers.

Stabilization of international exchanges probably would also tend to lessen the severity of trade restrictions. The departure of many countries from the gold standard has led other countries remaining on the gold standard to impose restrictions on imports from the former. Moreover, the extremely severe exchange restrictions adopted by a number of European countries, which have greatly reduced international trade, have been the result of an attempt on the part of these countries to avoid depreciation of their currencies. There are some signs at present that these exchange restrictions are becoming less severe. A definite stabilization of exchanges would materially lessen the obstacles to international trade, but even without it, a reduction of fluctuations in exchange rates would be helpful.

AGRICULTURAL CREDIT

The farm-credit outlook for 1934 is characterized by a continued small volume of loanable funds from the usual commercial sources and enlarged Federal facilities for both short- and long-term credit. Prices of supplies will probably be higher but the demand for production credit will tend to be reduced from what it otherwise would have been by the reductions in cultivated acreage in 1934, and by cash funds flowing into agricultural areas as benefit payments under the Agricultural Adjustment Act. Low interest rates in central money markets assure low cost of loanable funds to agricultural credit corporations, production credit associations, and cooperative banks. Funds for mortgage loans through the Federal land banks will be more plentiful than in recent years as a result of the new Federal legislation enlarging the activities of these institutions. The volume of real-estate loans from other sources will probably be small, in view of the large volume of delinquent loans and the still relatively low level of farm income.

SUPPLY OF CREDIT

Deposits in country banks are lower than a year ago. Total time and demand deposits of active member banks of the Federal Reserve System located in places of less than 15,000 population in 20 of the leading agricultural States declined 24 percent from August 1932 to April 1933. The decline in the cotton States was 11 percent and in the Corn Belt States, 32 percent. Between April and August 1933, deposits in country banks recovered somewhat, but in the 20 leading agricultural States they were still 19 percent below what

they were in August 1932. In the cotton States and Corn Belt States, deposits in August 1933 were 5 and 22 percent, respectively, below what they were a year earlier.

The number of banking institutions that are in a position to serve agricultural areas has been drastically curtailed by bank suspensions and by arrangements restricting the withdrawal of deposits. Between June 1932 and June 1933 the total number of unrestricted active banks in the United States, exclusive of mutual savings banks, decreased from 18,452 to about 13,774. Total deposits in such active banks decreased in this period from 35 billion dollars to somewhat less than 32 billion dollars. Most of this drop occurred in the early part of 1933 as the result of the failure of a large number of banks to reopen after the banking holiday.

The efforts that are now being made to release a portion of the deposits tied up in these closed or restricted institutions may be a material factor in improving farm-credit conditions, inasmuch as most of the closed banks are located in agricultural communities. On September 22 the deposits tied up in banks closed since the banking holiday or operating on a restricted basis totaled \$1,765,669,000.

In most areas reports indicate that the country banks that weathered the depression and that are now open on an unrestricted basis are in a more liquid position than they were a year ago and will probably be in position to extend slightly more credit in 1934 than the same banks did in 1933. The supply of bank credit, however, may be influenced by the new deposit-insurance plan which becomes effective January 1, 1934. If some country banks should be unable to meet requirements for this insurance fund, the bank loans available to farmers in localities served by such banks may be thereby reduced.

Credit from merchants and dealers is not likely to be much greater in 1934 than was the case in 1933. Reports from manufacturers of fertilizer indicate that they anticipate slightly larger sales, the estimated average increase being approximately 3 percent over the sales in 1933. These reports also indicate that a slightly larger number of dealers will require credit than in 1933, but that the proportion of farmer purchases on credit will be about 35 percent or the same as last year.

Agricultural credit corporations discounting with the Federal intermediate credit banks are generally in a stronger position than they were at this time last year. This results from the fact that prices in 1933 improved sufficiently to bring about a better liquidation than was the case in 1932. In 1932 prices were generally lower at marketing time than at the time when loans were made, whereas during 1933 the reverse of this situation has prevailed. Improvement is most pronounced in crop-financing corporations and least pronounced in livestock-loan companies, except those primarily financing sheep and feeder cattle. Nevertheless, livestock-loan companies have obtained some liquidation of loans made on high livestock values and have replaced many loans with new loans or renewals based on lower values.

The facilities of the Federal intermediate credit banks will be more generally available to farmers in 1934 than in the past. As a result of recent legislation new local discounting agencies, which farmers can utilize for obtaining production loans, will be in operation in many areas. These local agencies, which are being organized under the Farm Credit Act of 1933, are known as "production credit associations." This act authorized the organization of production credit corporations in each Federal land-bank district to furnish the initial capital needed for the establishment of local production credit associations.

The organization of the production credit corporations is proceeding rapidly, and it is expected that by the close of 1933 a corporation will be in operation in each of the 12 districts of the United States. The organization of production credit corporations is followed by the formation of the associations, and it is planned that by the spring of 1934 every agricultural community will be served either by a local production credit association or by a central association serving an entire land-bank district. The regional agricultural credit corporations set up in 1932 will continue to make loans to farmers in each district until credit can be furnished by production credit associations.

A new type of credit for cooperative associations was also provided by the Farm Credit Act of 1933. As a consequence, farmers' cooperative associations

that are organized on a sound basis and that can offer adequate security should have no difficulty in obtaining credit at moderate rates of interest. As of October 26, the Central Bank for Cooperatives in Washington, D.C., and 5 of the 12 regional banks authorized by this legislation have been organized. It is expected that by January 1, 1934, or shortly thereafter, there will be a regional cooperative bank in each land-bank district to supplement the facilities of the Central Cooperative Bank, which serves the needs of large cooperatives.

Central money-market rates which influence the cost of credit obtained from agricultural credit corporations, production credit associations, and the banks for cooperatives, are at record low levels. Commercial paper, which has a high degree of liquidity compared with most agricultural paper, was quoted in October at $1\frac{1}{4}$ percent compared with $1\frac{3}{4}$ - $2\frac{1}{4}$ percent a year ago. Call money was available at three fourths of 1 percent and the rate on bankers' acceptances was one fourth of 1 percent compared with 2 percent and three fourths of 1 percent, respectively, in October 1932. In view of the fact that the present cost of commercial credit is unusually low, it seems probable that short-term interest rates may be somewhat higher in 1934, although at levels which will be relatively low compared with those of previous years.

Cash receipts from the sale of crops and livestock will be substantially supplemented by benefit payments made and to be made under the Agricultural Adjustment Act. These supplemental payments, together with the somewhat better prices for farm products in the fall of 1933, as compared with those obtained last year, should reduce materially the demand for farm credit in practically all areas from what it otherwise would have been.

Acreage rentals for 1933 to cotton growers amount to approximately \$111,000,000. The bulk of this sum has already been distributed. The various cotton-growing States share in these rental payments about as follows: Alabama, \$9,533,000; Arizona, \$264,000; Arkansas, \$10,424,000; California, \$170,000; Florida, \$359,000; Georgia, \$7,898,000; Kansas, \$3,000; Kentucky, \$34,000; Louisiana, \$4,923,000; Mississippi, \$10,347,000; Missouri, \$1,827,000; New Mexico, \$344,000; North Carolina, \$2,176,000; Oklahoma, \$10,941,000; South Carolina, \$4,757,000; Tennessee, \$3,256,000; Texas, \$44,366,000; and Virginia, \$140,000.

The wheat-adjustment payments to be paid this fall will amount to about \$70,000,000. Nearly a third of these payments will go to the two leading wheat States of Kansas and North Dakota, and roughly, another third will be divided among the six States of Nebraska, Oklahoma, Montana, Washington, South Dakota, and Texas, which will share in the order named. Of the remaining third, a substantial part will go to Illinois, Ohio, Idaho, Indiana, Oregon, Minnesota, and Missouri, while most of the remaining States will share in these payments to some extent, depending on their relative importance as wheat producers and on the extent to which farmers cooperate in the wheat-adjustment plan.

The first installment of the corn-and-hog benefit payments, should bring into the corn-producing States prior to next spring sums of money about two and one half times the total of the initial wheat-benefit payments above indicated. A large percentage of the States will share in greater or lesser degree in these corn-and-hog payments. The majority of commercial corn-and-hog producers live in the 10 Middle Western States of Ohio, Indiana, Illinois, Missouri, Kansas, Nebraska, Iowa, South Dakota, Minnesota, and Wisconsin.

Approximately \$25,000,000 in adjustment payments will be paid out to tobacco growers prior to or during the 1934 crop season. These payments will go largely to the Carolinas, and to Kentucky, Virginia, Georgia, and Tennessee. Several other States including Pennsylvania, Connecticut, Ohio, Wisconsin, Maryland, and New York will receive substantial amounts. Distribution of these payments has already begun.

Additional installments of benefit payments on several of the products above mentioned are expected to be distributed prior to the harvesting and marketing season of 1934.

The plan of making loans direct to farmers on cotton and corn, warehoused under stipulated requirements, which in the case of corn include State-licensed storage on the farm, will provide a new source of credit in the months immediately ahead. These loans, on a value basis of 10 cents per pound for cotton and 50 cents per bushel for corn, minus the normal spread between the local price and the central-market price, are being made through a newly-created Federal institution, the Commodity Credit Corporation.

DEMAND FOR CREDIT

The demand for production credit in 1934 is not likely to show much change from 1933. Prices paid by farmers in general will be higher than in the current year, but acreage-restriction plans and benefit payments, under the Agricultural Adjustment Act, will tend to offset the need for credit arising from higher prices for supplies. Operating expenditures of farmers declined each year from 1929 to 1932, partly as a result of low prices and partly as a result of decreased buying. In view of the drastic curtailment in the quantity of goods bought in the last 2 years, it is likely that quantities purchased in 1934 will exceed those of 1933, even though certain expenditures may be somewhat reduced by reason of acreage restrictions. Larger expenditures for new capital goods may be expected since outlays for this purpose have been generally postponed in the last few years.

Farm-mortgage credit during the last year showed a steady decline in the volume of both new and outstanding loans. Farm foreclosures, by reason of the low level of farm income and the further decline of land values to an index level of 73 in March 1933 as compared with 89 a year earlier, have contributed largely to the reduction in volume of farm-mortgage credit. Holdings of all classes of mortgage lenders, except the Federal land banks, have been reduced substantially from a year ago. Outstanding farm loans of life-insurance companies declined 6 percent during the first 9 months of 1933 as compared with 4 percent during the corresponding period of 1932.

New farm-mortgage loans also have declined greatly. Average weekly investments in farm mortgages by companies representing over 80 percent of life-insurance assets averaged only \$500,000 per week during the first 9 months of 1933 as compared with \$900,000 in 1932 and \$2,000,000 per week in 1931. New loans by the Federal land banks were smaller in volume than usual during the year, but increased sufficiently in August to produce an upturn in outstanding loans. At the end of October, new loans by these banks and loans by the Land Bank Commissioner from funds provided by the Reconstruction Finance Corporation were being made at a rate in excess of \$1,500,000 per day, compared with an average a little over \$2,000,000 per month by the land banks in 1932. The current rate of loan approvals indicates that the rate of loan closings will increase still further in the near future.

Farm-mortgage interest rates on loans by commercial agencies remained essentially unchanged during last year. Rates on most loans have been 5½ to 6½ percent, with a range of 5 to 8 percent. Occasional instances are reported of renewals made at 4 to 4½ percent. In many instances rate quotations have had only nominal significance because of the virtual absence of loanable funds. Rates to borrowers on loans from the Federal land banks remained at an average of 5.58 percent throughout the year until July when the contract rate on new loans was lowered by all banks to a maximum of 5 percent. For a 5-year period, a rate of only 4½ percent is required of borrowers through national farm-loan associations.

DELINQUENCIES AND FORCED SALES

Delinquencies and forced sales continue high. Mortgage bankers operating mainly in the North Central and Southwestern States estimate that an average of 43 percent of the loans in their loan territories were delinquent as of October 1933, as compared with 39 percent a year earlier. The high percentage of delinquencies in the drought areas contributed heavily to this increase. An average of 10 percent of all loans in this territory were estimated to be in process of foreclosure, or the same proportion as a year ago. Some areas report that both delinquencies and foreclosures are less than last year, and that much of the increase in farm income is being used in paying debts. Foreclosures include only forced sales incident to formal court action. For several years technically voluntary transfers of title to avoid foreclosure have constituted an increasing proportion of forced sales.

The number of forced sales for debt in the country as a whole during the year ended March 15, 1933, exceeded those of any previous 12 months for which data are available. Various temporary-stay measures taken by States, and an amendment to the Federal Bankruptcy Act providing for inexpensive procedure for facilitating compositions and extensions, have given some relief. Governors' temporary-relief proclamations in several States have expired. In a number of other States debt-relief statutes remain in force and have had the

effect of postponing foreclosure and thus affording better opportunity to make desirable adjustments. In many instances, however, the debtor's position has been difficult to improve, and the expiration of declared emergency periods again presents the problem of settlement. The recent appointment of additional State and local conciliation commissions to assist farmers in effecting voluntary readjustments of their indebtedness, so as to make it possible for such indebtedness to be refinanced through the large resources of the Farm Credit Administration, should in many cases bring about substantial relief. A majority of recent reports suggest that the current outlook is better than a year ago.

Through 1931 and 1932 farm transfers, except distress sales, were very few. It appears that the higher or rising prices of 1933 stimulated sales activities somewhat during the summer, though interest in the purchase of land declined with the recession in farm prices during the late summer. Renewed improvement in prices may reasonably be expected to encourage increased activity in land transfer. Although the majority of sales probably will consist of the disposal of properties acquired by institutional mortgagees and will, therefore, be financed principally by the seller, it is probable that some increased demand for mortgage credit will develop from such increased activity. With much lower land values than in 1930 and with a vivid memory of recent difficulties on account of debt, it is likely that the increased demand for new mortgage credit will be moderate. The effort of mortgagees to reduce their loans to a more nearly normal ratio to value, and the efforts of mortgagors to escape foreclosure and to improve their financial positions are likely to result in continued heavy demands for refinancing of existing loans.

FARM LABOR, EQUIPMENT, AND FERTILIZER

The cost of producing farm products has increased during the last 6 months with the general rise in prices and is expected to increase further during 1934. The farm wage bill and expenditures for commodities used in production make up a large portion of this cost. On September 15 a composite index covering wage rates and the prices of items used in farm production stood at 107 percent of pre-war, or 14 percent higher than in March and 7 percent higher than in September 1932. Feed prices have shown the most pronounced increase since last March but prices of building material, seed and fertilizer, and wage rates have all made marked advances, and farm-machinery prices also were slightly higher in mid-September. Advancing wholesale prices, increasing employment in industry, and increasing costs of production for many of the commodities farmers buy will continue to increase farm-production expenditures.

The response of prices paid by farmers for articles purchased to the advance in wholesale and retail prices has been much quicker than usual after a change in the trend of the general price level. This is accounted for partly by the sharp rise in prices after the suspension of gold payments. The advance in prices paid by farmers that would be expected naturally to result from such action has been accelerated, however, by the governmental program encouraging the raising of wage rates and the increase of employment in industry. Although this program has increased farm-production costs, it has also been and will continue to be instrumental in increasing the demand for agricultural products. These factors, together with smaller crop supplies, have raised prices received by farmers for agricultural products 40 percent from March to September of this year. In September local market prices of farm products were 19 percent higher than a year earlier.

FARM LABOR AND WAGES

Prospects for further improvement in business activity and an increase in employment in nonagricultural pursuits indicate that the supply of farm workers available for hire will be somewhat smaller in 1934. The demand for hired farm workers is not likely to improve materially in 1934, since any increase in crop production that might be expected from more nearly normal yields may be partly offset by the combined efforts of farmers and of the Agricultural Adjustment Administration to effect a reduction in acreages of the more important cash crops. In the South, planters doubtless will not need as many cropper-tenant families to produce the smaller acreage of cotton anticipated. In the wheat belt, acreage reduction also will reduce the number of hired workers needed. The corn-hog reduction program will decrease still further the demand

for hired laborers in the Corn Belt. Some improvement in the demand for farm labor is certain, however, if prospective increases in prices of farm products and total farm income materialize. In consequence, it is highly probably that 1934 farm-wage rates will be materially above those prevailing this year. There is no indication to date that minimum wage rates will be applied to agriculture.

The general level of farm wages has averaged lower so far in 1933 than in any year since 1902. At 80 percent of pre-war for the first 9 months of this year, the index was about 7 percent below that for 1932 and 31 percent under 1931. Normally farm wages reach the lowest levels of the year on January 1, then increase sharply on April 1, and slightly faster to July 1, reaching a peak on October 1 a little higher than in July. Since April 1930, however, a decline was registered in every successive quarter until July of this year. A greater-than-seasonal upturn in wages since April 1933 indicates that the low point in wage costs during the depression period has been passed. But wage rates during 1933 will average lower than in 1932 because of the extremely low levels recorded in April and July.

The low level of farm-wage rates established last April was due to the large volume of workers in rural communities available for hire and the comparatively limited demand for their services. Many industrial workers had drifted into rural communities in search of a livelihood at that time. Recently, however, the movement has been toward the city, the return being speeded by the efforts of the National Recovery Administration in the campaign to encourage the reemployment of idle industrial workers at or above the minimum wage rates subscribed to by employers in the various codes. The success of this campaign is evidenced by the decrease in the supply of farm labor from 126 percent of normal on April 1 to 111 on October 1. This represents a decline of 12 percent in the supply as between the two dates, whereas the normal seasonal decline amounts to only about 3 percent. On October 1, 1932, the farm-labor supply was reported by crop correspondents at 124 percent of normal. Prospective recovery in the heavy industries that are now lagging, probably will further reduce the surplus supply of farm labor in 1934, but there is now no indication that a scarcity of workers will develop.

The demand for hired farm workers also has increased since last spring, the October 1, 1933, average of reports from crop correspondents amounting to 68 percent of normal as compared with 59 on April 1 and 61 a year earlier. This increase in demand was due largely to the advance in prices of farm products which rose from 53 percent of pre-war in April 1933 to about 70 percent in October, and increased farm income to a somewhat smaller extent. Demand did not rise as fast as prices or income, however, because crop production was about 6 percent under average this year and farmers were enabled to do a greater proportion of their own work than usual. Although farm prices and farm income are expected to be higher in 1934 than in 1933, the increase in the demand for farm labor probably will not be correspondingly as large, inasmuch as smaller acreages of important cash crops probably will be planted as a result of Agricultural Adjustment Administration activities.

BUILDING MATERIAL

The prices of nearly all building materials used by farmers and the wages paid by them have been advancing since March 1933, thus increasing the cost of building and building repairs on farms. From March to September wholesale prices of building materials advanced 18 percent and prices paid by farmers for building material advanced 14 percent. Advances in the price of lumber, which is the most important building material bought by farmers, have been much greater than the advance in the prices of all building materials. No index is available for measuring changes in labor costs to farmers for building, but it is probable that this has made an advance similar to the advance in farm wages to hired laborers. From April to October 1, the level of farm wages increased 19 percent whereas the usual seasonal advance is only about 7 percent.

A code of fair competition of the lumber and timber-products industries was approved August 19. The purpose of the code was "to reduce unemployment in the industries reported, improve standards of labor, maintain a reasonable balance between production and consumption, restore prices to levels which will avoid further depletion and destruction of capital assets, and to conserve forest resources and bring about sustained yield from the forests." Wage rates under the code are equal to or slightly higher than those prevailing in

1929 and materially higher than the wage rates of 1932, especially in the Southern States.

Wholesale prices of lumber in 1929 were 174 percent of the pre-war average but then declined to 103 percent in August 1932. From August 1932 to February 1933 wholesale prices showed little change but from February to September prices advanced sharply from 104 to 152 percent of pre-war. Wholesale prices of many other building materials such as brick, pipe, cement, barbed and woven wire, and nails have also advanced since March but not so sharply as have the prices of lumber.

This sharp rise in wholesale prices of lumber has already been reflected in the prices paid by farmers for building materials. From 1929 to March 1933 the index of prices paid by farmers for building materials declined from 159 to 119 percent of pre-war prices, but by September 1933 the index had advanced to 136 percent of the 1910-14 average.

FARM MACHINERY AND EQUIPMENT

The wholesale prices of farm machinery have remained practically unchanged since February at 114 percent of the pre-war level. In September of this year prices were about 2 percent below the same time a year ago. Retail prices of farm machinery have also shown but slight changes so far in 1933 and in September were about 1 percent lower than a year ago. Sales of farm machinery in the United States in 1933 continued at the unusually low level of 1932 and were much below the normal replacement necessary to maintain the farming equipment on farms.

The outlook for farm-machinery prices in 1934 is very uncertain. As the code of fair competition for farm machinery under the National Recovery Act did not become effective until October 23, the machinery manufacturers have not yet been able to determine the effect of the code upon the cost of producing farm machinery. Wage rates under the code are higher than those prevailing prior to the time when the code went into effect and hours of work have been shortened, which will probably result in some increase of cost of labor in the production of farm machinery. As labor makes up a large part of the total cost of farm machinery, any increased labor cost due to the labor code is likely to result in higher farm-machinery prices. Prices of lumber, steel, and other products used in the manufacture of machinery and equipment have also advanced, so that it seems probable that higher costs of manufacture and distribution of farm machinery are inevitable for 1934.

FERTILIZER

Wholesale prices of fertilizer materials reached a low of 72 percent of the 1910-14 average in February 1933. Since February, however, the general trend in prices has been upward, the advance from February to September being 8 percent. The organic ammoniates showed the largest increases in prices. The price of tankage at Chicago was 62 percent higher in September than in February and the price of cottonseed meal at Memphis was 53 percent higher. There was relatively little change in prices of mineral ammoniates, prices of sulphate of ammonia rising 20 percent, while prices of nitrate of soda were unchanged. Wholesale prices of superphosphate increased \$1.10 per ton, or 18 percent. There was no change in prices of muriate of potash, but prices of sulphate of potash declined 11 percent.

The rise in prices of fertilizer materials has been reflected in higher prices to farmers. The index of prices paid by farmers rose from 91 percent of the pre-war average in March to 99 percent in September. During the last 3 years retail prices of fertilizer declined much less than prices received by producers for farm products. With the rise in the general price level since February, prices of farm products have increased more rapidly than prices of fertilizer. The higher prices that farmers are receiving for crops this fall as compared with a year earlier will probably result in an increased use of fertilizer in 1934. Programs for reducing the acreage of cotton and tobacco may offset, in part, the effect of the higher prices of farm products in stimulating the use of fertilizer the coming season.

Wholesale prices of fertilizer materials are higher than a year ago and at about the same level as in the spring of 1932. The outlook for the coming season is for retail fertilizer prices higher than last season but not greatly different from the prices prevailing in the spring of 1932.

WHEAT

The world wheat market continues to be depressed by accumulated stocks of wheat, a high level of production, and severe restrictions on the importation and use of wheat by European countries. During October, the price of wheat at Liverpool, when measured in terms of gold, fell to the lowest level that has been reached in modern history.

Prices in the United States thus far this season have been higher than last year not because of improvement in the world wheat situation but because of factors peculiar to the United States. United States prices are measured in terms of a dollar which is now (November 3) depreciated by about 35 percent. Furthermore our prices have been high this year relative to those of world markets even when both foreign and domestic prices are measured in terms of our depreciated currency. From mid-March through July this appears to have been due in part to speculation as to further depreciation of the dollar, but at present the relatively high price in the United States is due primarily to the very short crop harvested this year. Prospective reductions in wheat acreage and the steps taken to finance exports from the Pacific coast have also aided in maintaining United States prices at relatively high levels. Even as governmental action along various lines during the last six months has been a prime factor in raising wheat prices in the United States above their levels of last year, governmental action may continue to be of great importance in affecting the level of wheat prices in the United States during the coming year.

ACREAGE

The acreage of wheat sown in the world, excluding Russia and China, has thus far shown no significant decline from the peak level that was reached in 1932-33 in spite of 4 years of low prices. The reduction has been confined to the exporting countries and has been greatest in the United States where the area sown has declined from 71,000,000 acres in 1928 to 63,900,000 in 1933. The combined acreage for Canada, Argentina, and Australia (sown acreage for Argentina and harvested for Canada and Australia), on the other hand, was at a high point in 1930-31 with an area of 64,300,000 acres, while in 1933 it had declined only to 59,400,000. In the four exporting countries of the lower Danube Basin there has been a decline from the peak of the harvested acreage of 20,900,000 reached in 1931 to 19,800,000 acres in 1933. In the importing countries of Europe there has been a marked upward trend in acreage since 1929, when the wheat price-supporting measures of the various importing countries began to be more drastic. In 1929 the wheat area of these importing countries of Europe amounted to 51,700,000 acres while in 1933 it reached a new high level of 57,400,000 acres. For the world, excluding Russia and China, total acreage (sown acreage for the United States and Argentina, harvested for other countries), which reached a peak of 263,900,000 acres in 1932-33 is now estimated at 263,300,000 for the current season.

The Russian wheat area which increased rapidly from 39,200,000 acres in 1923 to 92,100,000 in 1931 has been somewhat lower in the last 2 years. It amounted to 85,500,000 acres in 1932 and for the current season is indicated to be about 80,000,000 acres. The increase in Russian wheat production which has accompanied this extension of acreage has been largely absorbed within the country and has had little effect on world markets as compared to the effect a similar increase in another exporting country would have had. Nevertheless, Russian exports in the last three seasons have averaged 67,700,000 bushels yearly. In view of the fact that the expansion of the wheat area has been checked, Russian wheat exports may average less during the next few years, if periodic food shortages are to be avoided.

CARRY-OVER

The carry-over of wheat into the current season apparently sets a new record for the world (excluding Russia and China). The increase in world stocks was principally accounted for by record holdings in North America, by large supplies still available in the Southern Hemisphere and by a considerable increase in stocks in the deficit areas of Europe where the abundant harvests of 1932 led to the concentration of heavy supplies of native wheat, particularly in Germany, France, and Spain. These increases were more than sufficient to offset moderate decreases in holdings in other exporting areas and in some

of the minor importing areas. The carry-over in the principal exporting countries, together with quantities afloat and port stocks in the United Kingdom as of July 1, 1933, was the highest on record, amounting to 782,000,000 bushels compared with the previous high of 698,000,000 reached a year earlier and what may be considered a normal level of such stocks of about 300,000,000 bushels.

WORLD WHEAT AGREEMENT

Favorable aspects of the world wheat situation are to be found in the prospect for improved business conditions for the world as a whole, and the possibility of a material reduction in wheat acreage and relaxation of import restrictions as a result of the London Wheat Conference. (The prospects for business activity of the world are discussed in some detail in the section of this report relating to demand.)

At the conference, importing countries agreed not to encourage any further extensions of their wheat area and to adopt "every possible measure to increase the consumption of wheat." They agreed to begin to reduce wheat tariffs after the world price of wheat has been maintained for a period of 16 weeks as high as 63.02 gold cents per bushel (British parcels have recently been averaging in the vicinity of 42 cents per bushel in terms of gold cents). Beginning in the season 1934-35, after the present season's large crop is consumed, they will undertake the gradual relaxation of other restrictions on wheat imports with the aim of restoring more normal conditions in the wheat trade.

In the agreement between the exporting and importing countries, Argentina, Australia, Canada, and the United States agree to limit exports during the 1934-35 crop year to a quantity not exceeding the exportable surplus that will result in case each country has average yields and makes a 15-percent reduction in the area sown. In addition, the four exporting countries of the Danube Basin undertake to export not more than 54,000,000 bushels during the 1933-34 season and not more than 50,000,000 bushels in 1934-35.

In the supplementary exporters' agreement between Argentina, Australia, Canada, and the United States, export quotas for the crop years (August-July) 1933-34 and 1934-35 were tentatively fixed. Argentina is allotted a quota of 110,000,000 bushels for the current year and 148,000,000 in 1934-35, or an average for the 2 years of 129,000,000 bushels, compared with average exports of 155,000,000 bushels during the last 5 years. The Australian quota is 105,000,000 bushels for the current season, and 150,000,000 bushels for next, compared with a 5-year average of 123,000,000 bushels. Canada is allotted 200,000,000 bushels for 1933-34 and 263,000,000 for 1934-35, or an average of 231,000,000 bushels, compared with 268,000,000 exported on the average in the last 5 years. The United States quota is 47,000,000 bushels for the current season and 90,000,000 for 1934-35, or an average of 68,000,000 bushels for the 2 years, compared with average exports during the last 5 years of 110,000,000 bushels. The quotas allotted Canada and the United States are minimum quotas, which may be increased if import demand warrants, in order to reduce surplus stocks in these countries.

In case yields in Argentina and Australia are low this year, these countries may not be under the necessity of reducing the 1934-35 acreage or denaturing wheat. If this year's yields are average or above, however, both countries will probably find it necessary to curtail acreage in 1934-35, for they are obligated not to accumulate abnormal stocks as well as to limit exports. In the United States and Canada, with average yields and exports amounting to no more than the minimum quotas, acreage reductions of about 15 percent will be necessary in order to prevent stocks from increasing as a result of the 1934 harvests.

The agreement to reduce acreage and limit exports represents an important forward step, and, unless unfavorable developments occur, it should tend to aid in decreasing acreage in both the importing and the exporting countries and thereby lead to a more satisfactory balance between production and consumption. It also provides a more tangible basis for reducing wheat-trade restrictions of the importing countries, once there has been a material and sustained advance in world wheat prices.

PRICES

Under normal conditions the spread between United States prices and world prices is closely related to the quantity of wheat the United States exports. Over short periods the quantity exported is determined primarily by

the price spread, while over long periods, the quantity that needs to be exported largely determines how high United States prices are compared with world prices—the larger the surplus the lower the United States price. In almost every year prices in some regions of the United States are on an export basis for at least a part of the year, and this usually means that Chicago prices must be about 10 to 20 cents per bushel (assuming present-day freight rates) below Liverpool during such periods. In exceptional years such as 1925-26, 1930-31, and the current year, United States prices have been far above an export basis throughout a large part of the year.

In 1925-26 this fact was due to our extremely short crop of winter wheat harvested that year, while during the latter half of 1930-31 it was due primarily to the operations of the Grain Stabilization Corporation. In the current season relatively high United States prices are due partly to the very short crop of wheat, a crop which is less than the probable consumption by about 100,000,000 bushels, but this influence has been reinforced by prospective acreage reduction and by the governmental aid given to exporting in the Pacific Northwest. During July, the expectation of further depreciation of the dollar was also an important contributing factor.

AMERICAN PROSPECTS

Prospects are that the United States will again have a surplus of wheat for export in the 1934-35 crop year. As a result of this season's short crop and governmental aid in disposing of excessive surpluses from the Pacific coast region, our carry-over will presumably have been reduced from a level of 386,000,000 bushels as of July 1, 1933, to about 240,000,000 bushels as of July 1, 1934. Such a quantity would be more than 100,000,000 bushels in excess of the average carry-over prior to 1929. Furthermore, if abandonment and yields should be average, the new crop may be expected to exceed domestic utilization even if there is an acreage reduction of 15 percent.

The United States area of wheat sown, not including the quantity reseeded or sown for hay, averaged 64,018,000 acres for the 3 years, 1930-32, and is estimated at 63,134,000 acres for the 1933 crop. If there is a uniformly distributed 15 percent reduction of acreage from the 3-year average and if we should have average abandonment and yields in 1934, the total crop for that year would amount to about 681,000,000 bushels. Such a crop would be about 80,000,000 bushels in excess of probable domestic utilization if feeding is small.

Consequently, it is to be expected that we shall export a considerable quantity of wheat during the 1934-35 crop year. Unless some method of subsidizing exports should be used in the 1934-35 season, this would indicate that Chicago prices will have to be considerably below Liverpool during most, if not all, of that season, compared with an average of 20 cents above Liverpool during the period July-October of this season. There is, of course, a remote possibility that a short crop again next year will prevent an export surplus, or a further possibility that the pressure of the surplus will be relieved by other unusual circumstances.

Just what the composition of the United States carry-over of wheat will be as of July 1, 1934, is highly uncertain at this early date. It appears probable, however, that what may be termed the surplus carry-over—that is, the carry-over in excess of the average for the years 1920 to 1928—will be largely of hard winter wheat. This will presumably amount to somewhat less than 100,000,000 bushels, and there seems likely to be a surplus carry-over of white wheat of about 20,000,000 bushels. Present indications are that there will be very little surplus carry-over of the other classes of wheat.

It is not at all probable that yields will be average throughout the wheat area in 1934, but as an indication of what may be expected to be the result over a period of years, in case there is a 15 percent acreage reduction in the wheat area, it is significant to note how much wheat of the various classes would be produced. If there should be a 15 percent acreage reduction evenly distributed over the country, average abandonment and average yields would result in the following productions of the various classes of wheat: Hard red winter, 287,000,000 bushels; soft red winter, 130,000,000; hard red spring, 151,000,000; durum, 45,000,000; white, 68,000,000; and total of 681,000,000 bushels.

The probable utilization of these classes of wheat is difficult to arrive at because of the ease with which a considerable quantity of one class of wheat

may be substituted for another. It seems probable, however, that if supplies are sufficient to warrant, about 150,000,000 bushels of hard red spring wheat are likely to be used yearly and 175,000,000 bushels of soft red winter. In such case there would presumably be a consumption of about 200,000,000 bushels of hard red winter. If the supplies of hard red spring and soft red winter are not sufficient to warrant the amount of utilization indicated above, hard red winter would be used in correspondingly greater amount. About 45,000,000 bushels of white wheat and 30,000,000 bushels of durum wheat are commonly utilized. From this it may be seen that with a 15 percent acreage reduction, the United States would normally have a small surplus for export of hard red winter and white wheats. It should be borne in mind that the above figures of utilization represent what may be expected in years when feeding is at a minimum, for they total only 600,000,000 bushels. On the average, a somewhat larger quantity of wheat would be used and in some years, when feeding is heavy, utilization may greatly exceed this quantity. It is not to be expected, however, that large quantities of wheat will be fed except in years when there is a shortage of feed grains or when the price of wheat is extremely low.

FLAX

SUPPLIES

Domestic flax supplies for the 1933-34 season are much below prospective requirements as a result of record low yields and a reduced acreage. Demand for flaxseed and flaxseed products during the 1934-35 season is expected to be slightly improved over the low level of 1933-34. An acreage 50 percent larger than the 1,925,000 acres seeded in 1933, with an average yield per acre, may be expected to produce about as much seed as can be disposed of without losing the benefits provided by a 65-cent per bushel tariff.

The October 1 estimate of the United States crop was 7,371,000 bushels compared with 11,787,000 bushels in 1932 and 20,011,000 bushels, the average outturn of the period, 1926-30. Production in Canada is estimated at 756,000 bushels as compared with 2,446,000 bushels in 1932. The United States crop is the smallest since 1919, but the Canadian crop is the smallest on record for the years for which official data are available. Although the smaller acreage seeded in both the United States and Canada was a factor in reducing the size of the crop, low yields resulting from dry weather and grasshoppers were also important influences. The acreage was as large or larger than in 1932 in Minnesota, Iowa, and Missouri, but was sharply reduced in other States.

The 1933 world flaxseed acreage was not greatly different from that of the 1932 acreage, but a smaller 1933 production is indicated. The total acreage of 14 countries reporting to October 15 was 19,760,000 acres compared with 19,499,000 acres in the same countries in 1932. The estimated world acreage in 1932 was 20,800,000 acres. Yields in countries for which information is available are generally below last year and indicate a 1933-34 crop smaller than the 125,500,000-bushel crop harvested in 1932-33. Russia reduced its flax area from 7,781,000 acres in 1932 to 7,082,000 acres in 1933. Dry weather and the smallest sown acreage since 1925 indicate an outturn in Argentina close to the 52,304,000 bushels of last season. The Indian crop harvested last March and April of about 16,120,000 bushels was slightly smaller than that of the previous season. Marked decreases have occurred in many of the smaller producing countries.

The United States commercial supply of flaxseed, available for crushing October 1, 1933, was 8,000,000 bushels. This estimate is based on factory, warehouse, and market stocks, October 1, plus the 1933 crop as indicated by the October 1 estimate, but minus an estimated seed requirement of 1,400,000 bushels for the new crop and the 1933-34 new-crop marketings prior to October 1. Data for the same positions a year ago indicated a supply of 10,600,000 bushels, and 2 years ago of 10,900,000 bushels.

Since the 1933-34 supply is smaller than prospective requirements for the season it will be necessary to continue importing seed for crushing from foreign countries. The extent of imports during the last half of the 1933-34 season will be influenced by the acreage seeded and the condition of the 1934 crop. Assuming crushings during the 1933-34 season, beginning October 1, somewhat larger than in the 1932-33 season, and assuming no change in total stocks at the close of the season compared with those at the first of the season, about 13,000,000 bushels may be required to supplement domestic supplies. Crushings during

the 1932-33 season (Oct. 1, 1932-Sept. 30, 1933) totaled 19,700,000 bushels, compared with 19,800,000 bushels in 1931-32 season and a 5-season (1926-27 to 1930-31) average of 34,800,000 bushels.

DEMAND

Domestic demand for flaxseed and flaxseed products was low during the first half of the 1932-33 season, but improved somewhat in the last half. Depreciation of United States money in terms of foreign currencies, some increase in building activity, the general upturn in commodity and speculative markets and the short domestic crop strengthened the flaxseed situation in the summer and early fall months of 1933. As a result, the monthly average price of No. 1 flaxseed at Minneapolis, which had fluctuated between \$1.06 and \$1.13 a bushel from September 1932 into May 1933 rose sharply to \$1.88 a bushel in August and September of the present year. Demand for oil and meal improved and prices of these products made greater gains than the price of flax.

Construction contracts awarded have remained generally under the number a year ago although the improvement that occurred in the summer months was better than seasonal. Some improvement in building and business activity from the present level, which may enlarge the outlet for linseed oil, is anticipated. Any increase in pay rolls as the result of a stronger business situation will provide additional funds for repairs and alterations. Short crops of feed grains together with a supply of cottonseed no larger than that of a year ago and the small domestic supplies of flax will tend to maintain prices of linseed meal above those of competing feeds. Farm income for 1933-34, which may be considered as a measure of farmers' ability to buy feedstuffs, is estimated to be larger than a year ago by 24 percent. Returns from dairy production, which are especially important in determining the farm demand for linseed meal, were reduced in the summer and fall of 1933, but some slight improvement is expected in 1934.

The acreage sown to flaxseed in the United States has declined sharply during the last 3 years and the 1933 acreage of 1,925,000 acres was the smallest since 1922. If the present price is maintained and if the weather at seeding time is favorable, however, a substantial increase in acreage may be expected in 1934. The seed situation may have a deterrent effect on acreage expansion in areas in which there is a shortage of locally grown seed and in which farm incomes in 1933 were reduced to extremely low levels as the result of drought. If the 1934 production of flaxseed should equal or exceed the domestic requirements, the price advantage afforded by the tariff would be lost and any surplus would enter into direct competition with foreign-produced seed.

COTTON

Present indications are that, although in regard to American cotton the 1933 crop will be considerably below world consumption in 1933-34 and the world carry-over at the end of this season will be somewhat further reduced, the total supply will still be very large, while of cottons of all kinds the supply in the 1933-34 season will be slightly larger than in either of the 2 previous years. Without the cotton-adjustment program, however, the domestic crop would probably have been the second largest in history and far in excess of world consumption of American cotton this year. The increase in the supply of foreign cotton is accounted for both by an increase in production and by a larger carry-over. Nevertheless, the increased production which is occurring in many of the foreign countries this year represents in most cases a return to more normal production after 1 or 2 years of reduced crops.

The 40,800,000 acres planted to cotton in the United States in 1933 represented an increase of 11.6 percent over that of the previous year, but the removal of about 10,400,000 acres by the Agricultural Adjustment Administration leaves an indicated area for harvest 16 percent less than that of 1932, and the smallest since 1921. Without the 1934 adjustment program, the improved returns from cotton, continued abundant supplies of labor, and other factors, would probably lead to further increases in acreage planted to cotton in 1934. The adjustment program calls for an area in 1934 of only 25,000,000 acres, which, with yields equal to the average for the last 10 years, would give a crop of around 8,800,000 bales. On the basis of 25,000,000 acres, yields would have to be 23 pounds per acre larger than any year on record and 79 pounds above the average of the last 10 years for the 1934 crop to equal the October estimate of 12,900,000 bales for the 1933 crop.

World consumption of all cotton in 1932-33 increased about 2,000,000 bales over that of the previous season and was the highest for 3 years. The increase in the consumption of American was almost as great as the total increase for all growths, the increased consumption of sundries being largely offset by a marked decline in Indian and a slight decline in Egyptian. World consumption of American cotton in 1932-33 exceeded domestic production by 1,200,000 bales, was the largest consumption since 1928-29, and was 30 percent greater than the low level of consumption in 1930-31. Cotton consumption in the United States during last season was the largest for 4 years. If employment and pay rolls in other industries should improve still further during the coming months and if retail prices of cotton goods are not increased over the prevailing higher levels, domestic cotton consumption in 1933-34 might again increase.

In Europe, cotton consumption during August, September, and October was considerably above that of a year earlier which, with the improving conditions of general business, indicates that the 1933-34 consumption in Europe may equal or possibly somewhat exceed that of 1932-33. However, European mill consumption in 1932-33 was the largest for 3 years and in some sections of the Continent stocks of cotton goods have increased somewhat, the output during the summer months somewhat exceeding movement into consumption with a corresponding rise in stocks of textile products.

In China, the indications in October are that total cotton consumption in 1933-34 may be somewhat smaller than in the previous season, and in addition considerably smaller proportions of American cotton are being used. In Japan, however, cotton interests have agreed as a protest against the higher Indian tariff on non-British goods not to buy Indian cotton. This policy, if continued, will substantially increase the proportion of American cotton used.

In February 1933 cotton prices in domestic markets averaged less than 6 cents per pound, but with the improvement in business, and expectation of inflation, cotton prices advanced to above 9 cents before the end of May. In June and July the marked improvement in the textile industry as well as in general business resulted in an additional increase of 2½ cents per pound and by mid-July prices reached 11½ cents, the highest level recorded for almost 3 years. A considerable part of this marked advance was lost by mid-August, with prices slightly below 8½ cents, but in late October prices were around 9½ cents, which was more than 3 cents above those of a year earlier.

SUPPLY

ALL COTTON

The prospects in late October are that the world supply of all cotton in 1933-34 will be even larger than in either of the two previous seasons when the total supplies were equivalent to about 41,000,000 bales of approximately 478 pounds. Although the supply of American in 1933-34 will probably be 1,500,000 bales less than that of 1932-33, the indications are that this decrease will be more than offset by the increase in the 1933-34 crop in foreign countries and the somewhat larger world carry-over of foreign cotton.

AMERICAN COTTON

Present indications are that the world supply of American cotton for the season 1933-34 will be about 24,500,000 bales. This supply is about 1,500,000 bales less than the extremely large supplies of about 26,000,000 bales for each of the two previous seasons, but is still about 6,000,000 bales larger than the 10-year average supply of 18,500,000 bales for the period 1921-22 to 1930-31. Without the adjustment program, the 1933-34 supply would probably have been around 28,800,000 bales, or about 2,800,000 bales larger than the record supplies of the two previous seasons.

The world supply of American cotton for the season 1933-34 is made up of a carry-over on August 1 estimated at 11,600,000 bales and the 1933 crop, which on October 1 was estimated at 12,885,000 bales. This carry-over of 11,600,000 bales is nearly 1,400,000 bales less than the peak carry-over of about 13,000,000 bales in 1932, but is still much larger than that for any year prior to 1932. It is still more than twice as large as the average for the 10-year period, 1922-31, and continues to exert a depressing influence on cotton prices. However, present indications are that the world carry-over of American in 1934 will be further reduced.

The 1933 domestic crop, estimated at almost 12,900,000 bales, is only about 100,000 bales less than the 1932 crop, but is 4,200,000 bales less than the 17,100,000-bale crop in 1931, which was the second largest crop on record. Except for the reduction in production, estimated at about 4,300,000 bales, brought about by the adjustment program, the 1933 crop would probably have been the second largest crop thus far produced, exceeding that of 1931.

The indicated area for harvest in 1933 is about 30,000,000 acres, 10,400,000 acres having been removed from production under the cotton-adjustment program, and there being abandonment estimated at about 400,000 acres additional. The 1933 acreage for harvest is approximately 5,900,000 acres, or 16 percent less than that of 1932 and about 25 percent less than that of the 5-year period, 1928-32. Weather conditions during the growing season were very favorable and bollweevil damage was relatively light, resulting in unusually large yields. The October estimated yield of 205.3 pounds per acre for the 1933 crop is about 18 percent above that for 1932, 23 percent above the 10-year average, and the largest since 1914, with the exception of 1931.

The area planted to cotton in the United States in 1933 was estimated at 40,800,000 acres or an increase of 11.6 percent over that of the previous year. Although this year's planted acreage was 4,300,000 acres larger than in 1932 it was slightly below the average of the last 5 years. Prior to 1933 the area planted to cotton in the United States had been reduced for three successive years and in 1932 was 18 percent below the 1929 acreage. The increase in the acreage planted in 1933 may be largely accounted for by the unsatisfactory returns from other crops, the large supply of available labor, and the fact that rather large supplies of food and feed products were on hand, along with the increase in cotton prices which occurred around planting time.

Present prospects are that the supply of American cotton in 1934-35 will be materially less than that of 1933-34. If world consumption this season equals or exceeds that of 1932-33, as is indicated at present, the world carry-over on August 1, 1934, would be reduced to less than 10,500,000 bales. Furthermore, the program announced by the Agricultural Adjustment Administration calls for a restriction in the 1934 cotton crop to 25,000,000 acres, which, if yields should be equal to the average of the last 10 years, would give a crop of around 8,800,000 bales. This would give a supply for the 1934-35 season of less than 20,000,000 bales compared with the 1933-34 indicated supply of 24,500,000 bales, a 26,000,000-bale supply for the 1931-32 and the 1932-33 seasons, and a 10-year average of approximately 18,500,000 bales. With the 1934 crop restricted to 25,000,000 acres, the 1934 crop would probably still be materially less than that of 1933, even if the more productive soils are utilized, the crop is more intensively cultivated, and larger quantities of fertilizers are applied, resulting in yields per acre considerably above the 1922-31 average. For the production from 25,000,000 acres to equal the October estimate of the 1933 crop, average yield would have to be 79 pounds or 47 percent above the 167 pounds average of the last 10 years, 41 pounds per acre above the high yields indicated for 1933, and 23 pounds above the extremely high yields of 1898-99. Without acreage-control measures the improved returns from cotton, an abundant labor supply, and somewhat improved credit conditions might easily stimulate the planting of an acreage in 1934 in excess of the 40,800,000 acres planted in 1933.

FOREIGN COTTON

October estimates of total foreign production in 1933-34 are only tentative but they indicate an increase equivalent to about 1,500,000 bales of 478 pounds, or about 14 percent over the 1932-33 production. The prospective crop is larger also than the average of the previous 5 years by 1,000,000 bales or 8 percent. A material part of the increase in the prospective 1933-34 foreign production represents a return to more normal production after 1 or 2 years of small crops. This is particularly true in Egypt, India, Brazil, and Mexico. The world carry-over of foreign cotton on August 1, 1933, as indicated by stocks reported at specified locations, was about 450,000 bales larger than a year earlier, although it was smaller than for any other year since 1927. The indicated supply of foreign-grown cotton in 1933-34, therefore, is about 1,950,000 bales larger than in 1932-33 and 1,000,000 bales larger than the preceding 5-year average.

The Indian crop is harvested considerably later than the American crop and the first official production estimate will not be released until December.

Plantings up to October 1 were estimated at 7 percent above those of a year earlier. In October the Bombay cotton trade estimated that the 1933-34 Indian crop would be about 14 percent above that of 1932-33. The 1932-33 crop in India was estimated at the equivalent of 3,800,000 bales of 478 pounds, which was about 400,000 bales larger than the previous crop. World consumption of Indian cotton again declined in 1932-33, and the world carry-over on August 1, 1933, showed an increase over the previous year of about 700,000 bales. Should the 1933-34 crop be as large as is now indicated, the supply for this season will be about 1,100,000 bales larger than the small supply of the previous season.

The 1933-34 Egyptian crop was estimated in October at slightly more than the equivalent of 1,600,000 bales of 478 pounds. This is 600,000 bales or about 63 percent larger than the 1932-33 crop and considerably larger than the 1931-32 crop, but somewhat less than the crops of 1930-31 and 1929-30. Both the 1931-32 and 1932-33 crops were unusually small, however, as a result of reduced acreage brought about by low cotton prices and by acreage-restriction measures. The carry-over of Egyptian cotton on August 1, 1933, was about 400,000 bales smaller than a year earlier and was the smallest since 1929. The total supply of Egyptian cotton indicated for the season 1933-34 is about 270,000 bales larger than for 1932-33, but is smaller than for any other season since 1928-29.

The revision of the Egyptian acreage-restriction decree, together with higher prices for cotton and unsatisfactory returns for other crops, largely account for the 65-percent increase in acreage over that for the preceding year. However, the Egyptian cotton acreage in 1933-34 was 13 percent less than in 1930-31. From a long-time viewpoint an important phase of Egyptian cotton production is the gradually increasing proportions of the shorter staple and higher yielding varieties. This change will not only tend to increase production, but will result in a larger proportion of the Egyptian crop that will compete directly with long-staple upland cotton produced in the United States.

The October indications were that the 1933-34 Chinese cotton crop would be equivalent to approximately 2,600,000 bales of 478 pounds, and will be the largest in years. The indicated production is 15 percent larger than the 1932-33 crop and 45 percent larger than in 1931-32. The carry-over of Chinese cotton at mills and at port warehouses was larger in 1933 than a year earlier, therefore, the supply promises to be unusually large. During 1932-33 mill consumption of Chinese cotton in China was the largest in the history of the industry and only a small quantity was exported. So far this season, however, the cotton mills in China have been operating at somewhat lower rates than during the previous season.

The first official estimate of the crop in northern Brazil, which is ordinarily about 70 percent of the total Brazilian crop, indicated an increase of about 250,000 bales of 478 pounds over the short crop of the previous year, or a crop slightly above the 5-year average. The Mexican crop is estimated at more than 100,000 bales larger than the extremely small crop of 1932-33 and a little above the average of the last 5 years. The Russian acreage is reported to be about 5 percent less than in 1932-33, and difficulties in connection with irrigation and cultivation in many sections point to the probability of lower yields per acre. The 1932-33 production in Brazil amounted to 408,000 bales and in Mexico, 95,000 bales; the average for the preceding 5 years amounted to 530,000 bales in Brazil and to about 220,000 bales in Mexico. Little is known as yet regarding the carry-over of these growths or the crop prospects in other foreign cotton-producing countries.

If prices of cotton in foreign countries increase, this would probably tend to increase cotton acreage abroad. However, a rise in the price of competing crops in those countries and the fact that many foreign cotton producers are not as responsive to price changes as are producers in the United States would be offsetting factors which may tend to hold down the increase during the next year or two.

CONSUMPTION

WORLD

The total world mill consumption of all growths in the 1932-33 season was reported at 24,332,000 running bales. This was an increase of 2,013,000 bales or 9 percent over that of 1931-32; it was the highest since 1929-30 and was slightly above the average for the last 10 years. The increase in consumption of

American cotton, which amounted to 1,851,000 bales, was almost equivalent to the increase in the total consumption of all growths. Although consumption of sundries cotton increased 794,000 bales over the previous season, this gain was largely offset by the decline of 588,000 bales in the consumption of Indian and 44,000 bales in Egyptian.

World consumption of American cotton continued to increase and was placed at 14,167,000 running bales in 1932-33, which was an increase of 3,259,000 bales or 30 percent above the low level reached in 1930-31, and was the largest since 1928-29, when world consumption was reported at 15,076,000 bales.

About 70 percent of the increase in the total consumption of American in 1932-33 over the previous year may be accounted for by the increase which occurred in the United States. Europe also used considerably more American cotton in 1932-33 than in the previous season because of a larger total consumption and because of the use of larger proportions of American cotton. There was an increase in Japan's consumption of American cotton about equal to the decline that occurred in China and India, resulting in little net change in the quantity of American cotton consumed in the Orient in 1932-33 as compared with the previous season. During the 1932-33 season American cotton represented about 62 percent of the total world consumption. In 1930-31 the proportion of American to the total was 52 percent, and the average for the last 10 years was 59 percent.

World mill consumption of Indian cotton in 1932-33 amounted to 4,200,000 running bales of approximately 400 pounds compared with almost 4,800,000 bales in 1931-32 and an average during the last 10 years of 5,200,000 bales. The 1932-33 consumption of Indian cotton was the smallest since records became available in 1920-21. The greatest decline in the 1932-33 consumption of Indian occurred in China, where less than 171,000 bales were consumed compared with a 10-year average of 408,000 bales. Many European countries also consumed less Indian in 1932-33 than in the previous season, and in Japan consumption decreased slightly.

Total consumption of Egyptian cotton in 1932-33 amounted to 936,000 running bales of approximately 750 pounds, which was 44,000 bales less than the previous season and only slightly below the average of the last 10 years. The decrease that has occurred in the United States consumption of Egyptian during the last 3 years has been largely offset by increases in Japan, China, and India. The 5,029,000 bales of sundries cotton (all cotton other than American, Indian, and Egyptian) consumed in 1932-33 was 19 percent larger than in the previous season and only 3 percent below the peak consumption of 1929-30. The heavy consumption of Chinese cotton in China almost entirely accounted for the total increase in sundries growths.

Reports indicate that world consumption of American cotton during August and September 1933 was at levels considerably above those of a year earlier. This and the improvements in general business conditions in the United States and in foreign countries are favorable to an increase in cotton consumption in 1933-34 as compared with 1932-33. But American cotton will perhaps meet greater competition from foreign cotton in 1933-34 than during the previous season as a result of larger supplies of foreign cotton and smaller supplies of American.

UNITED STATES

Mill consumption of cotton in the United States in 1932-33 amounted to 6,136,000 running bales, which was 1,270,000 bales or about 26 percent greater than in 1931-32 and was greater than for any other season since 1928-29. Although the rate of consumption during the first half of the 1932-33 season was somewhat greater than a year earlier and was considerably greater than during the last half of the preceding season, the marked increases took place after February 1933. Domestic mill consumption increased at an unusually rapid rate from April through June, and in June the rate of consumption was 5 percent greater than the high levels reached in 1926-27, and was also greater than that for any other month for which records are available. Since June and July, consumption in the United States has decreased materially but in September was still somewhat above that of a year earlier and was considerably above September 1930 and 1931.

The phenomenal increases in domestic mill consumption of cotton from April to July 1933 were associated with marked advances in prices of raw materials along with the development of a general inflationary psychology and deprecia-

tion of the dollar in terms of foreign exchange, material improvements in business sentiment and in industrial activity in the United States and in foreign countries, and prospects for increased manufacturing costs. In conjunction with these developments were phenomenal increases in demand for textile products to build up inventories or to replenish depleted stocks, in order to take full advantage of the depreciation in the value of the dollar and of rising prices. This speculative buying and the building up of inventories appear to have occurred particularly in channels of distribution. As a result, sales of textile products increased, and by June an almost unprecedented volume of unfilled orders had accumulated. These developments plus the fact that many purchasers were asking for quick deliveries no doubt largely explain why mill activity was increased in June and July to the highest levels on record.

Material decreases in textile sales and in unfilled orders of cotton mills since May and June were followed by marked declines in domestic mill consumption since June and July. In June and July, domestic mill consumption was at an annual rate of 7,800,000 bales, which was considerably higher than consumer purchasing power could sustain. The largest domestic consumption previously recorded was only 7,190,000 bales which occurred in 1926-27 when pay rolls, employment, farm income, and general business activity were at relatively high levels.

Whether or not domestic consumption in 1933-34 is larger than in 1932-33 will depend largely upon further improvements in general business conditions, along with larger pay rolls and increased farmers' income, so that consumers will be able to absorb increased quantities of cotton goods at the prevailing higher prices. Retail prices of cotton textiles by October had apparently increased about 45 percent over the low levels of March and were about one third higher than the prices prevailing in 1932-33. They were the highest since about the middle of 1931 and were apparently still rising slightly.

EUROPE

Total consumption of all cotton in Europe as a whole showed a slight increase during 1932-33, the 8,900,000 running bales consumed comparing with 8,700,000 bales in 1931-32, 8,800,000 bales in 1930-31, and 10,350,000 bales in 1929-30. In 1931-32 European consumption of American cotton showed an increase of about 450,000 bales over the previous season and in 1932-33 there was an additional increase of about 550,000 bales, of which 490,000 was on the Continent. Europe's consumption of Indian cotton during last season again declined, making the third successive season showing a decline, and was the smallest consumption for many years. Consumption of Egyptian and sundries growths during 1932-33 both declined slightly.

Great Britain's total cotton consumption in 1932-33 was slightly less than in the previous season, but consumption of American increased slightly, the decline in the consumption of Indian and sundries growths accounting for the decrease in the total.

The steady decline in continental mill consumption of raw cotton since the record season of 1927-28 finally came to an end in 1932-33 when consumption rose to 7 percent above the figures for the previous season. German mills were more active than in any season since 1929-30 and the proportion of American cotton consumed increased to about 76 percent as compared with 68 percent in 1930-31, while at the same time the proportion of Indian and sundries growths decreased. Consumption of American cotton in France in 1932-33 was the largest since 1928-29. The Italian mills were also more active on the average during 1932-33 than in any season since 1929-30, the quantity of American cotton used being the largest since 1928-29, although a further decline occurred in the quantity of Indian cotton consumed.

With the rate of cotton consumption during the first 3 months of this season considerably above a year earlier and with general conditions in Europe improved, the present prospects are that the higher rate of raw-cotton consumption which prevailed in Europe in 1932-33 will be maintained during the current season 1933-34, particularly on the Continent. There is even a possibility of some further increase in consumption in the second half of the calendar year 1934, though these expectations depend upon the realization of further

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World consumption of American cotton ^{to reduce consumption in} continued to increase. ^{thus far in 1933 has lagged} In 1933, it amounted to 14,167,000 running bales in 1932-33, which ^{is of the Continent, notably in} was 10 or 30 percent above the low level reached ^{in the consumption of} in 1928-29, when world consumption of cotton goods. This increase is

About 70 percent of the increase ^{in manufactured goods in western} occurred in 1932-33 over the previous year ^{and the Continent, as a whole, is} in the United States. ^{it is clear that a fair share of the} In 1932-33, the consumption of American cotton in 1932-33 than in the ^{the Continent, especially that during the} sumption and because of the ^{present covering of current needs of the} There was an increase in ^{manufacture for replenishing stocks. Some} the quantity of American cotton ^{may be back or slackening in cotton-mill activity} in the quantity of American cotton ^{in summer, therefore, doubtless exists in places} compared with the previous year ^{where further improvement in the general business} represented about 60 percent of the total consumption of American cotton in the last 10 years was

THE ORIENT

World mill consumption of American cotton in Japan continued very high during 1932-33, the running bales of American cotton consumed being only 100,000 bales less than in 1928-29. This high level of consumption was ^{in 1928-29. This high level of consumption was} The 1932-33 season was ^{reached these levels despite the continuation of the de-} the highest in the world, and a higher tariff on non-British goods in India came about ^{in the exchange rate of the Japanese currency no doubt explains} the increase. ^{the extent to which the recent decline in exports of cloth from} of India ^{to the change in the Indian tariff is not apparent but that the} compared with the previous year ^{is shown by their agreement} also ^{to discontinue buying Indian cotton. The higher tariff in India and the} Japan ^{will probably have little effect on the total quantity of American cotton con-} T ^{sumed in foreign countries. Any increase in consumption of American cotton} T ^{in Japan, as a result of Japan's using American instead of Indian, and in Great} T ^{Britain because of possible increases in exports of piece goods to India, will} T ^{probably be offset to a large extent by increased competition from Indian} T ^{cotton in other countries.}

It hardly seems probable that mill activity in Japan during 1933-34 will continue at the levels of 1932-33, but curtailed use of Indian cotton would result in still larger proportions of American cotton being used in 1933-34 than in 1932-33. If this should happen, Japan's consumption of American cotton in the present season might equal or exceed that of 1932-33 when almost 1,800,000 running bales were consumed. For the 5 years ended 1930-31 the average consumption of American cotton in Japan was about 1,000,000 bales, even though total consumption averaged almost as high as in 1932-33. During the last season American cotton represented about 66 percent of the total cotton consumed in Japan, whereas during the 10 years ended 1931-32 American cotton averaged 40 percent of the total.

Mill activity in China has declined considerably during recent months and the proportion of American cotton being used has also declined. Activity in 1932-33 as a whole, however, was higher than for any other year. With a considerably larger crop of Chinese cotton practically assured, with larger stocks of native-grown cotton on hand at the beginning of the season and with prospects for smaller total consumption, it seems fairly certain that notwithstanding the loan to China by the Reconstruction Finance Corporation for the purchase of American cotton, the consumption of American in China during 1933-34 will be less than in either of the two previous seasons.

In 1932-33 the Chinese Millowners' Association reported the total consumption of all cotton at almost 2,600,000 bales of approximately 500 pounds, compared with a previous high consumption of a little over 2,300,000 bales. The quantity of American cotton consumed was reported at about 750,000 bales in 1932-33, compared with almost 900,000 bales in 1931-32 and a 5-year average, to 1930-31 of approximately 300,000 bales.

With prospects for a somewhat larger Indian crop this year and with mill stocks of Indian cotton in India at the beginning of the season the largest since 1921, it is expected that consumption of American cotton in India during 1933-34 will be the smallest since 1930-31. In 1932-33, mills in India used 700 bales of American cotton, in 1931-32 about 190,000 bales, and in 1930-31, 50,000 bales.

PRICES

Cotton prices trended sharply downward from June 1928 to June 1932. The average price in the 10 designated markets for Middling $\frac{7}{8}$ -inch cotton averaged 10.03 cents per pound in June 1928 and only about 5 cents in June 1932, the lowest prices were the lowest since 1898. From the low level of June 1932, cotton prices advanced sharply and in late August of that year reached a peak of 8.8 cents. Prices then again declined, and in December, January, and February averaged around 6 cents.

During the banking holidays in March 1933, with the anticipation of inflation and the expectation of improvement in business conditions, cotton prices advanced more than 1 cent per pound. Prices reacted somewhat in late March, but advanced markedly during April, May, June, and July, reaching a peak of 11.51 cents per pound on July 18. Factors contributing to the price advance included the depreciation in the exchange value of the dollar, the adjustment program, increased mill activity both in the United States and abroad, and the marked improvement in business sentiment.

During the latter part of July cotton prices declined more than $1\frac{1}{2}$ cents per pound, then recovered about one half cent of the loss, but in August they again began to decline perhaps partly because of the realization that cotton yields per acre in the United States were again going to be unusually large. On September 9 the 10 spot markets averaged only 8.34 cents, but advanced to the 10-cent level by September 19, then declined three fourths cent the following 2 days. From that date to October 25 the average price in the 10 markets fluctuated between $8\frac{1}{2}$ and $9\frac{3}{4}$ cents per pound. In October 1932 prices in the 10 markets averaged 6.37 cents.

Advances in cotton prices from April to July 1933 in terms of gold were considerably less than in terms of currency. The highest weekly average price in terms of gold was 8.06 cents per pound for the week ended July 1, while the highest weekly average in terms of currency was 11.04 cents per pound for the week ended July 15. Since July, cotton prices in terms of gold have also declined and for the week ended October 14 they averaged 6.08 cents which is slightly lower than the price for the week ended April 15—the last week before gold payments were suspended—and only slightly higher than during February.

In other words, customers in foreign countries where currencies have not depreciated recently were able in October to buy American cotton at prices not appreciably higher to them than the low prices that prevailed in February and at somewhat lower prices than they paid in October 1932. In countries in which depreciation has occurred but not to the extent of the dollar's depreciation, prices are proportionately advantageous. The relatively low price of American cotton in foreign countries along with improvement in business conditions largely accounts for the high rate of foreign consumption of American cotton during August and September 1933.

Prices of American cotton at Liverpool during September and October were higher relative to prices of Indian cotton, its chief competitor, than for more than 2 years and were about the same relatively as on the average during the 10 years, 1922-23 to 1931-32.

STAPLE SITUATION

Premiums in cents per pound for staples longer than seven eighths inch, after widening somewhat following the rise in cotton prices in August and September 1932, narrowed as prices declined in March 1933, then widened again following the advance during the spring, and by July and August 1933 were wider than at any other time since the early part of the season 1931-32, but with the exception of 1931-32 the average was still much narrower than any seasonal average since 1923-24. Premiums for lengths fifteen sixteenths inch to $1\frac{1}{8}$ inches, inclusive, continued to widen during August and September 1933, while premiums for staple $1\frac{1}{2}$ inches and longer declined somewhat in August and September. Discounts for $\frac{3}{8}$ -inch cotton widened somewhat during the spring of 1933 but in July and August were slightly narrower than a year earlier.

improvement in economic conditions in the world at large which will reenforce European wholesale demand for cotton manufacturers—and hence raw cotton—by enlarged consumer buying.

On the other hand, there are certain factors which, without further improvement in general conditions in Europe, may tend to reduce consumption in 1933-34. Consumer demand for cotton textiles thus far in 1933 has lagged behind manufacturing operations in some sections of the Continent, notably in Germany, with resultant increases in stocks of cotton goods. This increase is not alarming because stocks of finished and semimanufactured goods in western and southern Europe have remained moderate, and the Continent, as a whole, is probably not overstocked. Nevertheless, it is clear that a fair share of the 1932-33 consumption of raw cotton by the Continent, especially that during the last half of the season, did not represent covering of current needs of the ultimate consumer but rather manufacture for replenishing stocks. Some possibility of at least a temporary set-back or slackening in cotton-mill activity from the increased rate of last summer, therefore, doubtless exists in places and might become an actuality if further improvement in the general business situation does not occur.

THE ORIENT

Cotton consumption in Japan continued very high during 1932-33, the 2,900,000 running bales of all cotton consumed being only 100,000 bales less than that of the record year 1928-29. This high level of consumption was made possible by the new high level of exports of cotton cloth. The great depreciation in the exchange rate of the Japanese currency no doubt explains in part why exports reached these levels despite the continuation of the depression throughout the world, and a higher tariff on non-British goods in India which was Japan's largest foreign market during this period.

A still higher tariff rate on non-British goods entering India became effective in June 1933. The extent to which the recent decline in exports of cloth from Japan was due to the change in the Indian tariff is not apparent but that the Japanese spinners consider it of much importance, is shown by their agreement to discontinue buying Indian cotton. The higher tariff in India and the agreement on the part of Japanese cotton interests not to buy Indian cotton will probably have little effect on the total quantity of American cotton consumed in foreign countries. Any increase in consumption of American cotton in Japan, as a result of Japan's using American instead of Indian, and in Great Britain because of possible increases in exports of piece goods to India, will probably be offset to a large extent by increased competition from Indian cotton in other countries.

It hardly seems probable that mill activity in Japan during 1933-34 will continue at the levels of 1932-33, but curtailed use of Indian cotton would result in still larger proportions of American cotton being used in 1933-34 than in 1932-33. If this should happen, Japan's consumption of American cotton in the present season might equal or exceed that of 1932-33 when almost 1,800,000 running bales were consumed. For the 5 years ended 1930-31 the average consumption of American cotton in Japan was about 1,000,000 bales, even though total consumption averaged almost as high as in 1932-33. During the last season American cotton represented about 66 percent of the total cotton consumed in Japan, whereas during the 10 years ended 1931-32 American cotton averaged 40 percent of the total.

Mill activity in China has declined considerably during recent months and the proportion of American cotton being used has also declined. Activity in 1932-33 as a whole, however, was higher than for any other year. With a considerably larger crop of Chinese cotton practically assured, with larger stocks of native-grown cotton on hand at the beginning of the season and with prospects for smaller total consumption, it seems fairly certain that notwithstanding the loan to China by the Reconstruction Finance Corporation for the purchase of American cotton, the consumption of American in China during 1933-34 will be less than in either of the two previous seasons.

In 1932-33 the Chinese Millowners' Association reported the total consumption of all cotton at almost 2,600,000 bales of approximately 500 pounds, compared with a previous high consumption of a little over 2,300,000 bales. The quantity of American cotton consumed was reported at about 750,000 bales in 1932-33, compared with almost 900,000 bales in 1931-32 and a 5-year average, 1926-27 to 1930-31 of approximately 300,000 bales.

With prospects for a somewhat larger Indian crop this year and with mill stocks of Indian cotton in India at the beginning of the season the largest since 1921, it is expected that consumption of American cotton in India during 1933-34 will be the smallest since 1930-31. In 1932-33, mills in India used 135,000 bales of American cotton, in 1931-32 about 190,000 bales, and in 1930-31, only 50,000 bales.

PRICES

Cotton prices trended sharply downward from June 1928 to June 1932. The average price in the 10 designated markets for Middling $\frac{3}{8}$ -inch cotton averaged about 20 $\frac{3}{4}$ cents per pound in June 1928 and only about 5 cents in June 1932, when prices were the lowest since 1898. From the low level of June 1932, cotton prices advanced sharply and in late August of that year reached a peak of 8.8 cents. Prices then again declined, and in December, January, and February averaged around 6 cents.

During the banking holidays in March 1933, with the anticipation of inflation and the expectation of improvement in business conditions, cotton prices advanced more than 1 cent per pound. Prices reacted somewhat in late March, but advanced markedly during April, May, June, and July, reaching a peak of 11.51 cents per pound on July 18. Factors contributing to the price advance included the depreciation in the exchange value of the dollar, the adjustment program, increased mill activity both in the United States and abroad, and the marked improvement in business sentiment.

During the latter part of July cotton prices declined more than 1 $\frac{1}{2}$ cents per pound, then recovered about one half cent of the loss, but in August they again began to decline perhaps partly because of the realization that cotton yields per acre in the United States were again going to be unusually large. On September 9 the 10 spot markets averaged only 8.34 cents, but advanced to the 10-cent level by September 19, then declined three fourths cent the following 2 days. From that date to October 25 the average price in the 10 markets fluctuated between 8 $\frac{1}{2}$ and 9 $\frac{3}{4}$ cents per pound. In October 1932 prices in the 10 markets averaged 6.37 cents.

Advances in cotton prices from April to July 1933 in terms of gold were considerably less than in terms of currency. The highest weekly average price in terms of gold was 8.06 cents per pound for the week ended July 1, while the highest weekly average in terms of currency was 11.04 cents per pound for the week ended July 15. Since July, cotton prices in terms of gold have also declined and for the week ended October 14 they averaged 6.08 cents which is slightly lower than the price for the week ended April 15—the last week before gold payments were suspended—and only slightly higher than during February.

In other words, customers in foreign countries where currencies have not depreciated recently were able in October to buy American cotton at prices not appreciably higher to them than the low prices that prevailed in February and at somewhat lower prices than they paid in October 1932. In countries in which depreciation has occurred but not to the extent of the dollar's depreciation, prices are proportionately advantageous. The relatively low price of American cotton in foreign countries along with improvement in business conditions largely accounts for the high rate of foreign consumption of American cotton during August and September 1933.

Prices of American cotton at Liverpool during September and October were higher relative to prices of Indian cotton, its chief competitor, than for more than 2 years and were about the same relatively as on the average during the 10 years, 1922-23 to 1931-32.

STAPLE SITUATION

Premiums in cents per pound for staples longer than seven eighths inch, after widening somewhat following the rise in cotton prices in August and September 1932, narrowed as prices declined in March 1933, then widened again following the advance during the spring, and by July and August 1933 were wider than at any other time since the early part of the season 1931-32, but with the exception of 1931-32 the average was still much narrower than any seasonal average since 1923-24. Premiums for lengths fifteen sixteenths inch to 1 $\frac{1}{8}$ inches, inclusive, continued to widen during August and September 1933, while premiums for staple 1 $\frac{1}{8}$ inches and longer declined somewhat in August and September. Discounts for $\frac{3}{8}$ -inch cotton widened somewhat during the spring of 1933 but in July and August were slightly narrower than a year earlier.

When expressed as percentages of the Middling $\frac{3}{8}$ -inch price, premiums for the longer staples narrowed somewhat with the increase in prices during the spring of 1933, but by August and September were in general on approximately the same levels as a year earlier; while discounts for $\frac{1}{8}$ -inch cotton in July and August 1933, were considerably narrower than a year earlier.

The indicated domestic supply of American cotton (carry-over in the United States plus the 1933 crop) with staples seven eighths inch and shorter for the season 1933-34 is approximately 1,500,000 bales less than for a year earlier, about 3,000,000 bales less than in 1931-32, and considerably less than for any other season since records became available in 1928-29. (The distribution of the 1933 crop by staple lengths was arrived at by applying the percentage distribution by staple lengths for samples classed from the crop to October 19 to the estimated crop as of October 1. The distribution by staple lengths for cotton ginned prior to October has been fairly typical of that for the total crop each year during the last five seasons.) This indicated decrease is due to a smaller carry-over and to the indications of a smaller proportion of the shorter staples in the 1933 crop. The influence of this decrease in supply of these shorter staple lengths in the United States on prices is counterbalanced, to some extent at least, by a marked increase in supply of Indian cotton, most of which is seven eighths inch and shorter in staple. The increase in supply of Indian cotton in 1933-34 over that for the previous season is estimated in October at the equivalent of more than 1,000,000 bales of 478 pounds net weight. The relative price of Indian Fine Brouch cotton to that of American Middling has decreased from almost 100 percent in January 1932 to around 80 percent in October 1933. The average during the 10-year period ended with 1929-30 was 86.1 percent.

The domestic supply of the medium staples (fifteen sixteenths inch to $1\frac{1}{2}$ inches, inclusive) in 1933-34 will apparently be about equal to that of the previous year. The decrease in carry-over, amounting to about 473,000 bales, appears to be offset by an increase in the proportion of the medium staple lengths in the crop of 1933.

The domestic supply of American upland cotton with staples $1\frac{1}{8}$ inches and longer for the season 1933-34 will apparently be somewhat larger than that for the 1932-33 season and considerably larger than for any other season since records became available in 1928-29. The slight decrease in carry-over on August 1, 1933, as compared with that of the previous year, was brought about by a decrease in the ginnings of these lengths from 844,000 bales in 1931 to 715,000 bales in 1932, and by an increase in disappearance (domestic consumption plus exports) from 467,000 bales in 1931-32 to 736,000 bales in 1932-33.

The carry-over of American-Egyptian cotton decreased from unusually high levels. It amounted to more than 16,500 bales in 1931 and in 1932, and to about 9,800 bales in 1933. This decrease was brought about by a decrease in production from about 30,000 bales in 1929 to 8,300 bales in 1932, along with an increase in consumption from 12,400 bales in 1931-32 to 17,600 bales in 1932-33. The monthly rate of consumption increased from 457 bales in June 1932 to 2,061 bales in November 1932, and then declined to 868 bales in September 1933, which was the lowest September consumption since 1930. The 1933 crop was estimated in October at 15,000 bales.

The increase in the world supply of Egyptian cotton, practically all of which is of the longer staples, for the season 1933-34 is estimated at the equivalent of 270,000 bales of 478 pounds net weight, or about 12 percent over the previous season. The spread between the prices of American Middling upland $1\frac{1}{8}$ -inch cotton and of Egyptian Uppers Fully Good Fair during the last of September and October 1933 was somewhat narrower than at any other time since September 1932.

COTTONSEED

From 1927-28 to 1931-32 there was rather marked and almost continuous decline in cottonseed prices. In 1927-28 the weighted average United States farm price of cottonseed was \$35.94 per ton, which was 163 percent of pre-war average, 1900-10 to 1913-14, whereas in 1931-32 the farm price averaged \$9.52, which was only 43 percent of pre-war. In the summer of 1932, improvement in business sentiment and business activity, the speculative buying in anticipation of higher prices, and the indications that the new cotton crop was going to be much smaller than had been expected, prices of cotton and cottonseed advanced rather sharply. By the end of the calendar year, however,

prices were back almost to the same levels as during the previous July. In the spring of 1933 a strong speculative demand, a marked improvement in business conditions, and the depreciation in the value of the dollar resulted in another marked advance in cottonseed prices. In July the United States farm price of cottonseed was \$16.59 per ton, an advance of \$7.68 or 86 percent over February, and was 75 percent of the pre-war average. As a result of the marked advances during the first and last part of the season the weighted average farm price for the 1932-33 season was \$10.40 per ton compared with \$9.52 in 1931-32, or an advance of 9 percent. In August and September this season there was a rather marked decline in cottonseed prices, with the farm price averaging only \$12.11 in September.

Cottonseed prices tend to move somewhat in line with the price of cotton lint because of the close association between the supplies of each. But, because of differences in the demand for the two products and variations in the supply of competing products the prices of the two may at times even move in opposite directions. The price paid for cottonseed is determined primarily on the price received for crude cottonseed oil and to a smaller extent upon the price received from the cake or meal, hulls, and linters. During the 7 years ended 1930-31 the value of the crude oil has averaged about 53 percent of the total value of all crude products of cottonseed. The value of cake and meal ranked next, averaging about 33 percent of the total, linters averaged 9 percent, and hulls 5 percent. The prices received for cottonseed oil and the other products of cottonseed are materially influenced by the supply of competing commodities. The chief competitor of cottonseed oil is hog lard, but such vegetable oils as olive, peanut, coconut, palm kernel, sunflower, sesame, corn, and soybean also compete with cottonseed oil.

In 1931-32 the second largest domestic cotton crop in history resulted in large supplies of cottonseed and large quantities of cottonseed accumulated at crushing mills; stocks of cottonseed oil increased and before the end of the season were the largest for the corresponding period for 6 years. In addition, stocks of lard and vegetable oils accumulated and were about 40 percent larger around the end of 1931-32 than they were a year earlier. These large supplies of cottonseed oil, lard, and edible vegetable oils and the decline in consumer incomes and demand resulted in a marked decline in cottonseed oil and cottonseed prices. In May 1932 the average price of prime summer yellow cottonseed oil at New York was only 3.18 cents per pound, which was only 46 percent of the pre-war average, 43 percent of the 1930-31 average, and only 35 percent of the average for the 5 years ended 1930-31. The average for May was the lowest since January 1904, and with that exception since 1898. Prices of lard also declined greatly and in 1932 the average was the lowest for at least 30 years.

In the summer of 1932 with the improvement in business and the expectation of a very short domestic cotton crop, prices of cottonseed, cottonseed oil, and competing commodities advanced materially, but by the middle of the 1932-33 season were back to levels not greatly above the low level of the previous May. In April 1933, however, a strong speculative demand developed for lard, lard substitutes, cottonseed oil, and cottonseed. As a result, prices of cottonseed oil and cottonseed advanced sharply and in July were the highest for 2 years. Since then they have declined materially and in October were back at levels about equal to the average of 1932-33.

The trend of cottonseed oil and cottonseed prices during the coming months will depend upon the trend in consumer incomes and demand, as well as upon the supply of cottonseed, cottonseed products, and competing commodities. Stocks of cottonseed at mills at the beginning of the 1933-34 season were 26 percent smaller than a year earlier, but were about five times as large as the average of the previous 5 years. Stocks of crude and refined cottonseed oil in the United States on July 31 this year amounted to 725,000,000 pounds reduced to a refined basis compared with 656,000,000 pounds a year earlier and an average during the 5 years ended 1932 of 383,500,000 pounds. The October estimate of the 1933 domestic cotton crop was only 1 percent less than the 1932 crop, indicating little change in the domestic production of cottonseed. The indications are, however, that cotton production in foreign countries in 1933-34 will be materially above 1932-33, which will probably affect our exports of cottonseed products. A 25,000,000-acre domestic cotton crop in 1934 on the other hand would doubtless reduce the supply of cottonseed for the 1934-35 season.

Storage stocks of lard on September 1 this year totaled 224,000,000 pounds, which were 123,000,000 pounds or 122 percent larger than a year earlier, and were the largest in history. These large stocks, which a few months earlier were below average, were the result of the record summer slaughter supplies of hogs and of sharply restricted exports. The emergency pig-buying program of the Department of Agriculture which went into effect in August is expected to result in hog slaughter during the first half of 1934 about 15 percent less than in the like period of 1933, although all of this reduction may not be reflected in lard production.

Stocks of eight of the principal edible vegetable oils, excluding cottonseed oil, on June 30, 1933, amounted to 212,000,000 pounds, on a crude basis compared with 263,000,000 pounds a year earlier, 319,000,000 pounds at the end of June 1931, and were the smallest since 1928.

FEED CROPS AND LIVESTOCK

The total supply of feed grains for the 1933-34 season is smaller than that for any other year since 1901, but with the exception of 1930, when supplies were just slightly smaller than in the present drought year. Since 1930 there has been some increase in the numbers of livestock on farms so that the quantity of feed available per animal is about 6 percent less than in 1930. Hay supplies for the coming season are below average, but are above those of 1930 and 1931. Farm prices of feed grains in October were considerably above those of the same time a year ago, and hay prices were about 15 percent higher, while livestock prices were only slightly above those of the same time last year. Thus feed prices are now relatively high in comparison with livestock prices. Should the present unfavorable feeding situation long continue it will tend to discourage the production of livestock for market in 1934. Prices of dairy products in October were slightly higher than in October last year, but conditions for feeding were much less favorable because of the higher prices of feed grains. The numbers of livestock on feed this fall are considerably below average and dairymen are feeding less grain to milch cows than a year ago.

The outlook for both feed-grain and livestock production in 1934 will depend to a large extent upon the activities of the Agricultural Adjustment Administration to control production. Present indications are that a program will soon be started to reduce both corn and hog production in 1934 in the principal producing areas. This will be in addition to the reduction of cotton, wheat, and tobacco production. No doubt there will be considerable reduction in the acreage of the crops included in these programs, but there will probably be some shifts in production of feed grains and livestock. In the Southern States and certain parts of the Wheat Belt there will be a tendency to increase food and feed crops for home use. The curtailment of corn and hog production will tend to increase the hay and pasture acreage in the Corn Belt States, thus stimulating summer dairying and beef production, especially the production of feeder cattle on the farms where feeding of beef cattle is important.

Because of the shortage of feed grains this year, the price ratios between feed grains and livestock and feed grains and livestock products are no longer so high as to stimulate further increases in livestock numbers and in some instances will probably result in decreases, in addition to decreases brought about by the production-control plan. It is probable that the acreage devoted to feed crops and the numbers of livestock produced will be smaller in 1934 than in 1933. However, should the yields of feed grains be more nearly normal in 1934, feed supplies will be larger than in 1933, when yields were unusually low, and feeding of livestock for market will be greater in the 1934-35 feeding season.

THE FEED-SUPPLY SITUATION

The widespread drought during June and July this year greatly reduced the production of all feed crops. The production of oats in 1933 was less than 60 percent of the 1926-30 average production and was the smallest crop since 1894. Barley production was also about 60 percent of the 5-year average and corn production about 90 percent of average. The grain-sorghum crop, however, was greatly benefited by rains during August, and production for 1933 is estimated at about 15 percent above average. Because of large crops of feed grains in 1932, the carry-over of grains into the 1933 feeding season

was larger than usual, which will supplement the small production of feed grains this year. An offsetting factor, however, will be the shortage of wheat production this year. In 1930 and 1931, when feed-grain supplies were short, large quantities of wheat were fed. With the general shortage of wheat and relatively higher prices compared with feed grains, it is probable that the quantity of wheat fed this season will not be more than 20 or 25 percent as large as in 1930-31 or 1931-32, when 159,000,000 and 167,000,000 bushels, respectively, were fed to livestock. The improvements in pasture conditions over a large part of the heavy-feeding areas during the fall months has also been a factor in supplementing the short crop of feed grains.

The total tonnage of feed grains on farms (corn, oats, barley, and grain sorghums) including carry-over available at the beginning of the 1933-34 feeding season, was approximately 93,600,000 tons compared with 119,600,000 tons last year, 92,700,000 tons in the 1930-31 feeding season, and a 5-year (1926-30) average of 104,900,000 tons. Total hay supplies for the 1933-34 feeding season are about 87,000,000 tons compared with 90,000,000 tons in 1932, 81,000,000 tons in the short crop year 1931, and a 5-year (1926-30) average of 94,000,000 tons. In addition to the shortage of feed grains and hay this year, range conditions in the Mountain States on October 1 were about the lowest ever reported for the month during the last 11 years.

The supplies of by-products feeds for the fall and winter of 1933-34 are not likely to be greatly different from that of last season, though well below average. Supplies of wheat mill feeds will depend largely upon the millings of flour. Production of wheat mill feeds during August and September was about 100,000 tons smaller than during the same months last year. The total supplies of protein feeds from the usual sources will probably be slightly smaller during the coming year, because of the short crop of flaxseed. This may be offset by the reintroduction of brewers' grains which are high in protein and which will be further supplemented by increased production of distillers' grains. During the years 1915 to 1918 the production of these feeds exceeded 350,000 tons, but since the beginning of the prohibition period the production has been negligible. Wet-process grindings of corn from which gluten feed and meal are obtained have been relatively heavy in recent months, and it appears that production will continue at least average during the next few months. Alfalfa-meal production this season to date has been about 25 percent larger than during the corresponding period last season. Supplies of alfalfa hay are plentiful in the important meal-producing areas, and the output of meal will depend largely upon the relation between alfalfa-hay prices and bran prices.

LIVESTOCK NUMBERS AND FEEDING PROSPECTS

The number of grain-consuming livestock units to be fed on farms during the 1933-34 feeding season will not be greatly different from those on farms last season. Cattle numbers have increased and are now about 2,500,000 head larger than a year ago, but this has been offset by a slight reduction in the number of sheep and lambs on farms, a further decrease in the number of horses and mules, and a reduction in the number of hogs due to the slaughter of about 6,200,000 pigs under the emergency Federal hog-production control plan. The number of hay-consuming livestock units on farms is slightly larger than a year ago, as the increase in cattle has more than offset the reduction in the number of sheep, horses, and mules.

When the numbers of animals on farms are combined according to their normal feed consumption per unit, and are compared with the supplies of feed on farms, the quantity of feed available per animal unit for the 1933-34 season is seen to be the smallest for any time during the last 30 years. It is 6 percent smaller than in 1930-31 and 12.5 percent smaller than in 1931-32. This shortage will restrict the intensive feeding of livestock for market this winter. This is indicated by the smaller number of cattle and lambs purchased for feeding so far this season. The shipment of stocker and feeder cattle into feed lots from July 1 to October 1 was about 30 percent less than in the same months last year. Although this marked decline in comparison with a year ago is not expected to continue, the amount of cattle feeding done this year is expected to be considerably smaller than in the 1932-33 feeding season. The movement of lambs to feed lots this year has also been much below average and the number

of hogs to be fed has been reduced. The number of dairy cows on farms is now about 2 or 3 percent larger than a year ago, but the quantity of feed being fed per cow is somewhat less. The higher prices of feed in comparison with prices of dairy products are restricting the quantity of grain and other concentrates fed per head.

In the Western States range conditions are unusually poor and livestock is going into the winter in poor condition. Feed supplies in this area are only about average this year, and if heavy losses are to be avoided this winter large quantities of feed will have to be shipped into the area, or considerable numbers of livestock will have to be marketed. The large crop of grain sorghums in Texas, Oklahoma, Kansas, and Colorado will largely offset the short crop of other feed grains in this area. In most other areas feed supplies seem ample to carry livestock though the winter in view of the smaller amount of feeding that will probably be done.

COMMERCIAL AND EXPORT DEMAND FOR FEED GRAINS

The utilization of feed grains in industry during the 1933-34 season will probably be considerably larger than in recent years because of the relegalization of beer and the prospective repeal of the eighteenth amendment. Commercial utilization of corn from the 1934 crop will be stimulated by increased brewing and distilling and by some improvement in other industries. The decrease in the wet-process corn grindings from their 1928 record high level of 87,000,000 bushels to 62,000,000 bushels in 1932 reflects not only the decline in business activity but also the relatively large imports of foreign starches. Cornmeal production was also on a downward trend during this period. In the summer of 1933 the production of corn products increased sharply, so that wet-process grindings may reach a total of 72,000,000 bushels in 1933.

The number of operating breweries increased from 164 in 1932 to about 400 in 1933. The use of corn products in the manufacture of fermented liquors prior to the prohibition period was around 600,000,000 pounds annually, or the equivalent of about 15,000,000 bushels of corn. The production of corn products for use by breweries in both wet- and dry-process industries is expected to continue unusually heavy for some months while supplies of beer and alcoholic liquors are being accumulated for aging. In recent years the use of corn by the distilling industry has been negligible, but in the preprohibition period between 20,000,000 and 25,000,000 bushels of corn were used annually in the production of alcohol and other distilled spirits. From the standpoint of feed supplies, the increased use of corn by breweries, distilleries, and corn processors will be offset to some extent by increased production of corn byproduct feeds. However, such products as gluten feed, distillers' and brewers' grains, and hominy feed should supplement rather than compete with corn as a feed since the protein content in the byproducts is much greater than in corn.

Exports of corn during the 1933-34 season will be negligible, because of the relatively high prices in this country. The quantity of corn imported will depend largely upon the relative price of American and Argentine corn. Prices of corn at Buenos Aires for nearby delivery are now about 10 cents below the prices of corn at Chicago.

The industrial use of other feed grains, particularly barley, will also be increased materially by the expansion of brewing and distilling industries. In preprohibition days the consumption of barley by the distilling and brewing industries ranged from 55,000,000 to 60,000,000 bushels annually, whereas in recent years only about 10,000,000 bushels have been used.

The commercial utilization of oats is never an important factor in the total consumption of oats and is not likely to be greatly stimulated by the brewing or distilling industries. Some increase in the demand for oats for seed next spring is probable, however, because of the almost complete crop failure in many areas in which oats is one of the major crops.

PRICES OF FEED GRAINS

Prices of feed grains reached unusually low levels during the 1932-33 feeding season and in many areas prices were so low that they hardly paid the cost of marketing. From March to July, prices of feed grains advanced very rapidly and in many areas the advances from the low point reached last winter amounted to 300 to 400 percent. The sharp rise in prices was accompanied by unusually heavy marketings of grains and, with only a limited outlet, the

supplies of grains in the central markets reached record levels. This piling up of supplies eventually resulted in a sharp decline in prices and by October 15 the farm price of corn was only 70 percent, oats 71 percent, and barley 86 percent of the peak of prices reached last July. Prices are still very much above the low prices of last winter, but they are not unusually high in view of the marked reduction in the supply of feed grains this year. With a material increase in the commercial utilization of feed grains in prospect, higher prices for most feed grains seem probable as the large supplies in central markets are reduced and as the feeding season gets under way.

SOYBEAN PRODUCTION AND OUTLOOK

The production of soybeans has increased rapidly during recent years. In some areas the crop has become important both as feed and as a cash crop. Soybeans are fed as beans or hay to livestock, are grazed off, or are sold for crushing.

The acreage of soybeans in 1933 was 2 percent larger than in 1932, but with poor conditions, the crop production will probably be about 16 percent less than in 1932. Ordinarily about one fourth of the soybean crop is cut and threshed for grain, one sixth is grazed off, and about three fifths are cut for hay. Of the portion that is threshed for grain, about 90 percent is produced in Illinois, Indiana, Iowa, North Carolina, Missouri, and Ohio. The prices of soybeans and soybean oil practically doubled during the summer of 1933 and present prospects are that the acreage of soybeans threshed for grain was about 12 percent greater than in 1932.

During 1932 and the first quarter of 1933 prices for soybean products declined along with those for other vegetable oils and protein concentrates. Prices of soybeans in the United States in 1931 and 1932 were so low that soybeans were exported for the first time. Exports amounted to 2,000,000 bushels in 1931 and 2,500,000 bushels in 1932. The recent advance in prices, however, has placed the present crop on a domestic basis. In spite of the decline in demand for oils during the last few years, the quantity of soybeans crushed increased sharply until 1932 and during the year ended September 1932 totaled 141,749 tons. Crushings during the first three quarters of the 1932-33 crop year and mill stocks of beans on hand for the fourth quarter of the year indicate that total crushings from the 1932 crop will be about one third less than those from the 1931 crop.

The advance in the prices of soybean oil and meal during summer months reflected the increased activity of manufacturing industries that use these products, and the shortage of feed grain. The decline in feed-grain prices since July has been accompanied by a decline in the prices of soybean meal and consequently in prices of soybeans. The price of soybean products during the coming months will depend largely upon improvement in business activity in those industries that use soybean oil and upon the trend of prices of protein feeds other than soybean meal.

FEED GRAINS AND LIVESTOCK SITUATION BY REGIONS

In the North Atlantic States, the 1933 acreage of feed grains (corn, oats, and barley) was about the same as in recent years and production was only slightly less than the average of the last 5 years. Production in 1933 exceeded that in the drought year of 1930 but was considerably less than in 1931. Feed requirements during the next few months are expected to be about the same as during the corresponding period of recent years, depending largely upon the quality of grain fed to milk cows.

In the South Atlantic States, the acreage of feed grains (corn, oats, and barley) declined from the relatively high level of the last 2 years but was still somewhat above average. Production was also above average and above that of last year. Feed-grain production in the South Central States in 1933 was slightly below average but about one third greater than in the drought year 1930.

The numbers of livestock in the Southern States are somewhat greater than the average of recent years, so that the quantity of feed available per animal is less than usual. Feed-grain acreage for home use next year may be expected to increase with the prospective low cotton acreage under the cotton-acreage reduction program of the Agricultural Adjustment Administration.

Owing largely to unfavorable planting conditions, the acreage of feed grains in the East North Central States declined in 1933 and production was the lowest in many years. Livestock numbers are somewhat above average in this area, so that less-than-usual quantities of grain will be available for marketing.

In the West North Central States, also, 1933 production of feed grain was the lowest for many years. Although feed requirements in this area are expected to be below the average of recent years, the quantity of surplus feed available for sale still will be smaller than in any other recent year.

The East and West North Central States will be the principal area affected by the corn-and-hog production-control program. Both the corn acreage and the number of hogs produced in this area will probably be somewhat smaller in 1934 than in 1933, but the acreage devoted to hay and pasture will probably be increased.

The 1933 acreage of feed grains and hay in the Western States was maintained at a relatively high level but production was only about average. Feed requirements during the present season are expected to be greater than usual because of the poor range conditions and the increased numbers of cattle.

HAY AND PASTURE

SUPPLIES

The hay crop this year, plus the carry-over on farms May 1, is greater than the annual disappearance of hay during the last 4 years and seems to be sufficient to meet requirements of the slightly increasing numbers of hay-consuming livestock. In the Great Plains and Corn Belt areas, which produce most of the surplus hay for market, the hay crop was short because of drought. But in most of the Cotton Belt, which until recent years purchased a large proportion of its hay requirements from distant points, the supplies are ample for local needs. Present indications are that hay will not advance in price this season relatively to prices of other crops.

The 1933 hay crop was the fourth successive short crop for the country as a whole. The production, 67,337,000 tons of tame hay and 9,122,000 tons of wild hay, a total of 76,459,000 tons (Oct. 1 estimate) is 5,522,000 tons, or 6.7 percent below the 1932 crop and 7,707,000 tons, or 9.2 percent below the 1926-30 average. Including farm stocks of hay on May 1, the total supply of hay for 1933-34 is 87,088,000 tons, or 96.4 percent of the 90,294,000 tons available in 1932-33 and 92.5 percent of the average crop of 94,164,000 tons available for the 5-year period 1926-30. The average farm disappearance of hay indicated by production and stocks on hand at the beginning and end of the season (May 1) for the same 5 years was 84,467,000 tons, and during the last 3 years has been below 80,000,000 tons.

The low production of hay for the last 4 years was largely due to small crops of timothy and clover. The production of timothy and clover hay was 27,593,000 tons in the dry year of 1930 but in 1933 was only 24,738,000 tons, which represents a decrease in production of 10.3 percent below the 1930 crop. During the 5 years ended 1930 the average annual production of timothy and clover was 34,434,000 tons. The recent succession of dry years in the timothy and clover belt has made it impossible to reestablish a sufficient acreage to maintain the average production.

Alfalfa hay production of 24,952,000 tons for the country as a whole is about 1,000,000 tons, or 3.9 percent less than in 1932, but 1,133,000 tons, or 4.8 percent greater than the 5-year average (1926-30).

The total production of wild hay is 9,122,000 tons, or 25 percent below the 12,187,000 tons harvested last year and 21 percent below the 1926-30 average of 11,489,000 tons. The area of low production is largely confined to the surplus prairie-hay-producing sections of Minnesota, South Dakota, North Dakota, Nebraska, Kansas, and Oklahoma.

In certain areas, especially in Minnesota, South Dakota, North Dakota, Kansas, Oklahoma, Illinois, Ohio, and Indiana the hay crop was considerably below the average owing to lack of rainfall, and is insufficient for local requirements. In the main, however, the hay supplies in those States are sufficient to cover the usual disappearance. Supplies of hay and other feeds in the Cotton Belt States, which until recent years purchased large quantities of hay in the open market, are ample and in many cases they exceed requirements.

Ample supplies of hay and other feed to meet local requirements in most of the normally deficit hay-producing areas and low purchasing power of farmers are greatly restricting the commercial movement of hay. The movement from July to September (1933), as indicated by receipts at terminal markets, was lighter than for the corresponding period of any year since the World War. Receipts of hay at most of the larger terminal points have been chiefly restricted to hay necessary for local requirements. The small volume of shipping has been largely taken care of by the movement of hay direct from producer to consumer, a large portion of which is being transported by truck.

PRICES

Prices for the 1933 hay crop, during July, August, and September, have averaged approximately 12 percent higher than for the same period of 1932. Feed prices for the same period averaged approximately 54 percent higher. The advance in feed prices was due to a sharp advance in prices for grain and a short supply of feed grains. The low prices for hay when compared with grain prices were due to good late summer and early fall pastures in regions that ordinarily purchase dairy feed and to the low prices of dairy products in relation to feed prices.

ACREAGE

Under the Agricultural Adjustment Act regulations controlling the use of contracted acreage for such cash crops as cotton, wheat, corn, and tobacco, permit the seeding of land taken out of cultivation to hay and pasture for home consumption. Where land is under a regular rotation that provides for seeding the land to hay and pasture crops using wheat as a nurse crop, the hay and pasture acreage probably will not be affected by the reduction in wheat acreage as the seedings of hay and pasture crops would be made without the use of wheat as a nurse crop. Where corn follows the meadow crop in the rotation the contracted acreage for corn would probably be left in hay or pasture instead of being plowed for corn, thus increasing the total land in hay and pasture. When the contracted acreage is not in such rotation there may be additional seedings for hay and pasture. In the last two instances there would be a definite increase in the land available for hay and pasture. The extent to which the Agricultural Adjustment Act will affect the hay-and-pasture program cannot be fully ascertained at this time, but indications are that it will result in increased acreage of both crops, particularly pasture.

The acreage of pasture throughout the States east of the ninety-seventh meridian and in the irrigated valleys west of that meridian, could be increased. Experiments indicate that many dairy farmers especially would find it advantageous to change their system of farming to one in which they would keep much more of their land in permanent meadow, especially legumes, or would pasture and feed no grain, or a limited grain ration rather than a full grain ration. Land in pasture will not average one half as much total feed per acre as when seeded to cultivated crops and the use of pasture is limited to the growing season. In many cases, however, the lower production results in greater returns per acre because of the decrease in amount of labor involved in utilizing the crop. In view of the proposed reduction in the acreage of cultivated crops much of the land taken out of such crops should be seeded to pasture grasses to prevent soil erosion and preserve soil fertility. Experiments indicate that on the average, land in cultivated crops, such as corn or cotton, is eroded more than 100 times as much as is land in good sod.

Supplies of timothy, red-clover, and alsike-clover seed are below normal and those of alfalfa are about normal, whereas those of Kentucky bluegrass and redtop seed are much above normal. It is believed there will be sufficient seed to take care of a moderate increase in hay and pasture seeding above those of last year, which were about 15 percent below the 10-year average.

MEAT ANIMALS AND MEATS

SUPPLIES

The supply of meat animals on farms, in terms of total live weight of the three species, at the beginning of 1934 probably will be slightly larger than at the beginning of 1933. It seems likely that the increase in cattle numbers will more than offset a rather marked reduction in the number of hogs on farms

and a slight decrease in the number of sheep and lambs. Consumer demand for meats, which has strengthened slightly in recent months, is expected to show further improvement during 1934.

The trend in meat-animal numbers on farms during the last 5 years has been upward. From January 1, 1928, to January 1, 1933, the supply of meat animals on farms, in terms of total live weight, increased about 10 percent. Cattle numbers have increased steadily since 1928, and the number on farms January 1, 1933, was nearly 15 percent larger than on that date in 1928. Hog numbers declined from 1928 to 1931, and then increased to 1933. A further increase in hog numbers would be recorded at the beginning of 1934 were it not for the recent slaughter of more than 6,000,000 pigs from the 1933 crop in connection with the operation of the Federal emergency hog-production control plan. Sheep numbers increased steadily from 1923 to 1932, the increase amounting to about 17,000,000 head or about 45 percent. Since 1932, however, sheep numbers have decreased slightly.

The commercial supply of meats and lard during the first 9 months of 1933, as measured by the total dressed weight of animals slaughtered under Federal inspection, was about 8 percent larger than that during the same period last year and about 5.4 percent larger than the average for the preceding 5 years. During the first 3 months of 1933, meat production was relatively small, but since April slaughter supplies of all livestock have been large. Production of meats and lard under Federal inspection from May to September 1933 was the largest for those months on record and was 19 percent larger than from May to September last year. This large increase in meat production since April has been due to the marked increase in both hog and cattle slaughter. Slaughter of sheep and lambs from May to September was slightly smaller than that in the corresponding months of last year and of 1931, but it was larger than that of all other years. Production of beef and veal under Federal inspection during these months was the largest since 1927, and the production of pork, including lard, was the largest on record.

The average live weight of all livestock slaughtered under Federal inspection during the first 9 months of 1933 was somewhat larger than last year but slightly less than the 5-year (1928-32) average. Compared with the January to September period in 1932 the increase in the average weight for the year thus far was 1.5 percent for cattle, 0.5 percent for calves, 1 percent for hogs, and 2 percent for sheep and lambs.

The per-capita supply of meats and lard (measured in terms of dressed weight) obtained from Federally inspected slaughter during the first 9 months of 1933 was 82.6 pounds, compared with 77 pounds in the same period of 1932, and 78.1 pounds in 1931.

Whether the total inspected meat production in 1934 will exceed that of 1933 will depend largely upon whether the decrease in hog slaughter, as a result of the operations of the Federal hog-production control plan, will more than offset the almost certain increase in the slaughter of cattle and calves.

DEMAND

Consumer demand for meats and lard declined greatly from early 1930 until the spring of the present year as a result of the drastic reductions in consumer incomes. Since the early summer of this year the demand situation has strengthened somewhat. For the year to date, however, the demand for meats and lard, measured in terms of quantities taken and prices paid by consumers, has averaged lower than in the corresponding period in 1932. Per-capita consumption of all meats and lard produced under Federal inspection from January to August 1933, totaling 67.1 pounds, was 3.5 percent larger than in the same months of 1932. The weighted average retail price of these products at New York during the 1933 period was about 11 percent less than in the 1932 period. Index numbers of retail food prices compiled by the United States Bureau of Labor Statistics show that retail meat prices for the entire country declined in about the same proportion as those at New York.

Computations, using New York prices, indicate that the total consumer expenditures for federally inspected meats and lard during the first 8 months of 1933 were about 14 percent less than in the same period of 1932 and about 29 percent less than in 1931.

Changes in demand from the first 8 months of 1932 to the same period in 1933 apparently were about the same for the different kinds of meat. Per-capita consumption of federally inspected beef and veal from January to

August 1933 was about 9 percent larger than in those months last year. Per-capita consumption of federally inspected hog products, on the other hand, was only slightly larger, and that of lamb and mutton was slightly smaller than a year earlier. The declines in the retail prices of the different meats at New York from 1932 to 1933 were as follows: Beef, 13 percent; hog products, 10 percent; and lamb, 7 percent.

Improvements in the industrial and financial situation and increases in employment and pay rolls since March have tended to strengthen the demand for meats during recent months. Although composite retail prices of all meats are still below those of a year earlier, they have advanced somewhat since early May. Although this rise may have been partly seasonal in character, it has been accompanied by relatively large slaughter supplies of all livestock. Consumer expenditures for meats in August and September apparently were about as large as in those months last year. Other factors, aside from the slight improvement in consumer demand for meats, which tended to support livestock prices during the late spring and early summer were the strong storage demand for hog products and the sharp rise in the prices of byproducts, such as hides and pelts. The storage demand was especially important in connection with hog prices, and the advance in byproduct prices has been of particular significance with respect to the prices of cattle, sheep, and lambs. Owing largely to the increase in the storage demand for pork and lard and to the higher value of byproducts, the amount paid for livestock slaughtered thus far in 1933 has shown only a slight decrease from 1932 in contrast with the marked reduction in consumer expenditures for meats. The amount paid for all livestock slaughtered under Federal inspection during the period from January to August 1933 totaled \$592,000,000 compared with \$595,000,000 in those months last year.

Consumer demand for meats during 1934 will depend largely upon the developments in the business and industrial situation, which will in turn determine the level of urban consumer incomes during the year. In view of the tendency for changes in expenditures for meats to occur somewhat later than the changes in consumer incomes, the maintenance of the present levels of employment and pay rolls in 1934 probably would result in some improvement in the demand for meats during 1934 over that in 1933. Substantial improvement in the domestic demand for meats and lard during next year, however, will depend upon further increases in consumer buying power.

HOGS

Commercial slaughter of hogs during the 1933-34 marketing year (Oct. 1, 1933-Sept. 30, 1934) will be considerably smaller than that of the preceding marketing year, and will be much smaller than was indicated early in the summer when the spring pig crop report was issued. Total liveweight of hogs to be slaughtered is estimated at 12 percent smaller than in the preceding year. This reduction from earlier indications was brought about by the slaughter of some 6,000,000 pigs in August and September under the Federal emergency hog-production control plan and by the short production of corn and other feed crops which caused a reduction in fall farrowings from what was estimated in June. The expected decrease in hog slaughter will occur largely during the winter-marketing period (Oct. 1, 1933, to May 1, 1934).

Domestic demand for hog products, although still at a very low level, has improved slightly in recent months. Continued improvement will depend upon a further increase in consumer incomes. Little immediate expansion in the foreign outlet for American hog products is in prospect. Higher import duties on lard in Germany and the continuation of the British quota system for cured pork imports probably will restrict United States exports of hog products during 1933-34 to the low level of the last 2 years.

In view of the sharp curtailment in slaughter supplies of hogs for the 7 months, October 1, 1933, to May 1, 1934, a rather substantial advance in wholesale and retail prices of hog products seems certain. This advance will be reflected in higher costs (market price plus processing tax) of hogs to packers. When this advance will take place, and its extent, will depend considerably on how the marketings of the remainder of the spring pig crop will be distributed.

DOMESTIC SUPPLIES

The 1933 spring pig crop for the United States was estimated at 51,030,000 head. This represents an increase of about 1,443,000 head, or 3 percent, over the 1932 spring pig crop. In the Corn Belt States where about 90 percent of

the commercial supply of hogs is produced, the estimated pig crop for the spring of 1933 totaled 40,949,000 head, which was 4 percent larger than the 1932 spring pig crop in those States. The largest increase in the 1933 spring pig crop was in the eastern Corn Belt States where the crop was estimated at 8 percent larger than that of 1932. The increase in the western Corn Belt was 3 percent. In other regions of the United States except in the Western States little change was reported in the number of pigs saved in the spring of 1933 compared with the spring of 1932. In the Western States there was a decrease of 11 percent.

The June pig report indicated that if farmers should carry out their intentions, as expressed at that time, there would be a large increase in the number of sows to farrow in the fall season of 1933. This increase amounted to 8 percent for the United States and 13 percent for the Corn Belt. Developments since June 1, however, indicate a material change in fall-farrowing plans from those indicated at that time. Drought over widespread areas in the Corn Belt, which prevailed during most of the crop-growing season, has resulted in a marked reduction in the 1933 corn crop from that of 1932. The unfavorable relationship between hog prices and corn prices during June, July, and August, together with other developments, is likely to result in little if any increase over 1932 in the 1933 fall farrowings, with a decrease not improbable.

In late August of this year, the Department of Agriculture, under the terms of the Agricultural Adjustment Act, put into effect the emergency program designed to reduce market supplies of hogs during the 1933-34 marketing year. Under this program about 6,141,000 pigs, weighing less than 100 pounds, and about 221,000 sows, weighing in excess of 240 pounds and bred to farrow this fall, were purchased for slaughter on Government account. Only a minor proportion of this slaughter was used for the production of edible products and such products are being distributed for relief purposes and are not entering regular domestic distribution channels. Nearly one fourth of these products had been distributed by November 1.

With the combined spring and fall pig crop of 1933 at least as large and probably somewhat larger than that of 1932, it seems probable that inspected hog slaughter during the 1933-34 marketing year would have been somewhat larger than that of 1932-33 if the pig purchases for Government account had not been made. This purchase of approximately 6,000,000 pigs probably will reduce the supplies of hogs for inspected slaughter in 1933-34 about 5,000,000 head below what they otherwise would have been. It is probable that because of the short corn crop and the unfavorable hog-corn price ratio, the average weights of hogs marketed during 1933-34 would have been considerably lighter than in 1932-33 had no pig-slaughter plan been adopted. But now with a reduced number of hogs to be fed the reduction in average weights will be somewhat less than it would have been without the pig-slaughtering plan. The total live weight of hog slaughter under Federal inspection in 1933-34 is expected to be about 12 percent smaller than that of 1932-33.

The seasonal distribution of hog slaughter during the present marketing year will depend upon several factors. In the normal course of production and marketing, the pigs slaughtered under the hog-production control program would have been marketed largely from January to April 1934, hence the greatest reduction in hog slaughter during the winter-marketing period is expected to occur in these months. If, however, producers tend to hold hogs back from market in anticipation of a price advance after January 1, it seems probable that the reduction in winter marketings will be spread more evenly over the entire period from October to April than otherwise would be expected.

Recently a more permanent plan for hog-production control has been announced by the Agricultural Adjustment Administration. This plan involves the cooperation of hog producers and the Federal Government in reducing slaughter supplies of hogs in 1934-35. Farmers entering the plan of cooperation must agree to reduce the number of pigs raised during 1934 by 25 percent from some base-period production. In return for this reduced production the farmers entering the agreement will receive an adjustment payment of \$5 per head on 75 percent of their base-period allotment. If a major proportion of the hog producers enter this plan of cooperation, it will result in a substantial reduction in the number of sows and gilts kept for the 1934 spring farrow. These sows and gilts, which otherwise would have been retained for the spring farrow, will be marketed during the winter marketing period 1933-34 instead of being sold largely during the summer of 1934 as packing sows. This shift in marketings will result in a smaller decrease in winter marketings than would have occurred

as a result of the pig-slaughter plan alone, but it probably will not affect the total slaughter supplies for the marketing year materially.

The hog-production control program will be financed by a processing tax on hog slaughter. The initial tax as announced by the Secretary of Agriculture was 50 cents per 100 pounds effective November 5, 1933, to be increased at intervals until February 1, 1934, when it will be \$2 per 100 pounds, effective during the remainder of the 1933-34 marketing year and through the 1934-35 marketing year. Storage stocks of pork and lard on November 5 also were subject to the equivalent of the initial processing tax rate on hog slaughter of 50 cents per 100 pounds, live weight.

The reduction in slaughter supplies of hogs during the 1934-35 marketing year will be determined largely by the extent of cooperation in the program by hog producers. If no control program had been inaugurated, it is probable that hog slaughter in 1934-35 would have been reduced, since the short corn crop in 1933 and the unfavorable relationship which would have existed between hog prices and corn prices would have resulted in a material reduction in the 1934 pig crop. The reduction planned under the production-control program is greater than that which normally would occur as a result of the operation of other causal factors.

Federally inspected slaughter of hogs during the marketing year ended September 30, 1933, not including pigs and sows slaughtered for Government account, totaled about 47,103,000 head as compared with 46,655,000 in 1931-32. Slaughter during the marketing year just ended was the largest since 1928-29. All of the increase occurred after April 1933; slaughter from October 1932 to March 1933 showed a decrease of about 10 percent from that of the same months in 1931-32. The period from May to September is usually considered as the marketing season for the fall pig crop. Inspected slaughter during the May to September period of 1933 amounted to about 19,341,000 head, the second largest total for these months on record. Slaughter from May to September this year also represented the second largest proportion of the total marketing-year slaughter for any year on record. The average live weight of hogs slaughtered under Federal inspection for the 1932-33 marketing year of about 232 pounds was 2 percent greater than the average weight in the 1931-32 year, consequently the increase in the total live weight of hogs slaughtered was relatively greater than the increase in numbers of hogs slaughtered.

STORAGE SUPPLIES

The storage situation for hog products changed greatly during the 1932-33 marketing year. Storage holdings on November 1, 1932, the beginning of the storage season, were below average, and storage accumulations until April 1933 were relatively small. Storage accumulations from May to September, however, were the largest on record. The relatively large slaughter supplies of hogs during the summer months and the activity in the speculative hog-products market were the principal factors resulting in the very large into-storage movement of pork and lard from May to September.

Although the relatively large increase in slaughter supplies of hogs during the summer months of 1933 was accompanied by some increase in the movement of hog products into domestic consumption, a considerable part of this increase in slaughter was reflected in larger storage stocks of pork and lard. Storage stocks of pork on September 1 were the fifth largest for that date on record, and holdings of lard on September 1 were the largest for all dates on record. Some reduction in storage supplies occurred during September, but stocks of pork on October 1, totaling about 629,000,000 pounds, were the second largest on record for that date. Holdings of lard, amounting to 192,000,000 pounds, were the largest for October 1 on record.

Storage supplies of pork usually reach a maximum in the spring and decrease thereafter until the early winter when a minimum is reached. Holdings of lard are usually at maximum volume in the late summer and at a minimum in early winter. The large net accumulation of storage holdings of pork during the summer, therefore, was in marked contrast to the usual seasonal movement. The increase in storage of hog products on October 1 this year compared with October 1, 1932, was equivalent to about 1,580,000 hogs. Most of the surplus storage stocks held at the end of the summer are usually disposed of before the beginning of the new packing season November 1. During September the reduction in stocks of pork amounted to 124,000,000 pounds, and in

stocks of lard to 32,000,000 pounds. The reduction in case of lard was about average for the month, but it was greater than average in case of pork.

Although storage stocks of pork and lard on November 1 probably were larger than average for that date, the carry-over of stocks into the new storage season is likely to be much smaller than was anticipated in the early fall. Because of the imposition of the floor tax on stocks of pork and lard on November 5, it is probable that the movement of cured pork products and lard out of storage during October was relatively large and that the movement of products into storage was very small. The smaller-than-average slaughter supplies of hogs in October facilitated the movement of both fresh and cured pork into domestic-consumption channels during the month.

DOMESTIC DEMAND

(See Demand, p. 38)

FOREIGN COMPETITION AND DEMAND

The prospects for continued small exports of American hog products in foreign markets are largely the result of (1) the import quotas on cured pork now in effect in Great Britain, and (2) the very high import duties imposed by Germany on lard. Indications are that, under the quotas as drawn and as contemplated, American cured-pork exports (chiefly hams and shoulders) in 1933-34 may be smaller than the unusually small exports during the last 2 years. In the case of lard, a marked curtailment of the German market may be expected to result in relatively small exports of this product from the United States in 1933-34. Because of these governmental restrictions to trade, the reduction in European hog numbers noted to date is not an important strengthening factor in the foreign outlet for American hog products.

Total exports of hog products from the United States during the 1932-33 marketing year ended September 30, amounting to about 703,000,000 pounds, were about 3.5 percent larger than in the 1931-32 season, but they were about 5 percent smaller than in 1930-31. The level of exports during the last 3 years, however, has been much below that of other post-war years. Both pork and lard exports for the marketing year just ended were slightly larger than those of a year earlier, but as compared with the average of the last 10 years, lard exports have been more nearly maintained than pork exports.

Indications of a downward trend in hog production in the European countries exporting cured pork to Great Britain became evident late in 1931. The tendency to curtail production was especially marked in Denmark. Hog production in Germany began to decline in 1932 and continued downward into 1933. There are strong indications, however, that the low point of the production cycle has been reached in those countries normally unable to supply their own needs. Both surplus- and deficit-producing countries appear to be tending more and more toward self-sufficiency.

Great Britain has inaugurated plans for reserving a larger share of the domestic cured-pork market for domestic and Empire products, especially the former. The voluntary quotas on non-Empire cured pork adopted since November 1932 have been preliminary to more permanent import control. British hog producers have signified their approval of the Government's plan for control of production and marketing of hogs and hog products, and it is scheduled to become effective March 1, 1934. By that time, it is expected that it will be possible to estimate the forthcoming supplies of cured pork produced in Great Britain. It is the announced intention of the British Government to try to stabilize total pork supplies at about the average annual level of the 5-year period 1926-30. Since November 1932 the quota allotments to the various countries that usually supply Great Britain with pork have been on the basis of the business done in a relatively few recent months. During this period the quantity allotted the United States was relatively small. Consideration has been given, however, to a plan of revising quotas for the year beginning March 1, 1934, with a view to using a longer-time period as a basis for determining allotments to the exporting countries. The use of a longer-time base period would be relatively more favorable to the United States than the present base, since cured-pork exports from this country have trended sharply downward since 1920. Difficulties experienced recently in securing voluntary agreements to reductions in imports prior to March 1 suggest the strong probability of the adoption of mandatory quotas.

The operations of the quota scheme since November 1932 have resulted in reducing materially the supplies of foreign cured pork in British markets. In September 1933, for example, total imports of cured pork reached about 92,000,000 pounds. In September 1932, total imports amounted to about 108,000,000 pounds and these came principally from non-Empire sources. The reduction has been relatively greater in bacon than in hams, supplies of the latter from the United States having been somewhat larger in recent months than the exceptionally small imports of a year ago. A treaty in effect permits Denmark to furnish 62 percent of the total cured pork imported. For the year ended September 30, 1933, the monthly exports of ham and bacon from the United States to Great Britain averaged 5,876,000 pounds, compared with 4,850,000 pounds in 1931-32, 7,840,000 pounds in 1930-31, and 12,410,000 pounds in 1929-30.

The German policy of self-sufficiency in animal fats is the motive behind a duty rate of 1 mark per kilo (16.2 cents per pound at exchange as of October 26) on lard, effective since July 19, 1933. Protection of domestic butter from competition with foreign or domestic lard and margarine is the main object of the German policy with respect to control of fats and oils. The extensive German margarine industry is surrounded with regulations to prevent serious competition with butter. German hog producers also are expected to benefit from the new measures, but greatly increased hog production is not being encouraged. The larger volume of pork incidental to increased lard production would present a serious problem.

PRICES

After declining almost steadily since early 1930, hog prices reached the lowest level in more than 50 years in late December 1932. From January to April of this year the trend in prices was slightly upward largely as a result of reduced slaughter supplies. Primarily because of the expectation of rising prices, a strong speculative demand for hog products developed in April and hog prices advanced sharply during May. The average price of hogs at Chicago in May was \$4.51 per 100 pounds, the highest monthly average for that market since November 1931. This advance was partially maintained during June and July, despite the largest hog slaughter on record for the 3-month period, May to July. With supplies continuing relatively large, hog prices declined during August. During September hog marketings were reduced and prices advanced somewhat, but this price rise was lost in October. The Chicago average price of hogs at the end of October was about \$4.10 which was nearly \$1 higher than that of the same date in 1932.

The total live weight of hogs slaughtered under Federal inspection during the 1932-33 marketing year was about 2.8 percent larger than in the preceding year, and the average price paid by packers was \$3.69 per 100 pounds, or about 35 cents less than in the previous year. The total amount paid by packers for hogs slaughtered under Federal inspection for the marketing year 1932-33 totaled about \$402,000,000, compared with \$430,000,000 in 1931-32. This represents a decrease of 7 percent.

PRODUCTION OUTLOOK

Hog production and slaughter during the next 2 years will be greatly affected by the operation of the hog-production control plan. The ultimate aim of the plan is to increase hog prices to the fair exchange value as defined in the Agricultural Adjustment Act. The pre-war base price of hogs was \$7.22 and the fair exchange value would be this price multiplied by the index of prices paid by farmers. This index in October 1933 was 116 and the present computed fair exchange value is about \$8.40, or more than twice as high as present prevailing prices.

The plan for hog-production control next year provides for a reduction on the part of cooperating producers of 25 percent in the number of hogs sold for slaughter from a base-period production. The extent to which such a reduction is realized will depend upon the proportion of hog raisers that come under the plan, the extent to which noncooperators expand their production in anticipation of an advance in prices resulting from reduced total production, the dependability of the base-production figures upon which the 25 percent reduction is computed, and the extent to which cooperators carry out their agreements to reduce their production.

Inspected commercial slaughter during each of the last 2 marketing years has been about 47,000,000 head. If most commercial hog producers enter the plan of cooperation to reduce hog production, it is not improbable that inspected hog slaughter in 1934-35 will be much smaller than in any marketing year since 1920-21 at least. Slaughter during the 1920-21 marketing year totaled 38,663,000 head. With some improvement in business and industrial conditions in prospect, such a reduction in slaughter supplies during 1934-35 probably would result in a considerable advance in hog prices, and total returns to hog producers, including adjustment payments from the Federal Government, would be larger than the very low returns received during each of the last 2 years. If the hog-production control plan should then cease, it is not improbable that a sharp increase in hog production would occur in the following year.

BEEF CATTLE

The upswing in cattle and calf slaughter which got under way in early 1933 is expected to continue for several years. Slaughter supplies in 1934, however, will probably include fewer of the better finished kinds and more of the lower grades. Cattle numbers have been increasing since 1928 and are expected to continue to increase through 1934.

Moderate improvement in the consumer demand for meats has been in evidence in recent months. Further improvement will depend upon continued increase in consumer buying power. Demand for beef during 1934 may be stimulated somewhat as a result of reduced production of competing meats. But any improvement that may develop in the demand for beef during the next 2 years will be offset to a considerable extent by the increase in supplies of cattle for slaughter.

DOMESTIC SUPPLIES

The total number of cattle and calves on farms about October 1 this year was probably about 2,500,000 head larger than at the corresponding date a year earlier. This increase is about the same as the net increase made in cattle numbers during 1932. The number of cows and heifers in this country at the beginning of 1933 was probably the largest on record. Because of the increase in the number of cows, the number of calves born this year will probably exceed the number born in 1932 by 1,000,000 head. This increase in calves born about offsets the total increase in cattle and calf slaughter during the first 9 months of the year. What the increase in cattle numbers on January 1, 1934, over January 1, 1933, will amount to depends upon total slaughter during the last 3 months of this year. Although slaughter during these 3 months will much exceed that of a year earlier a further material increase in cattle numbers this year is certain.

Inspected slaughter of cattle during the first 9 months of 1933, totaling 6,296,000 head, was nearly 10 percent larger than in the corresponding period of 1932 and was slightly larger than in the same months of 1931. Calf slaughter also increased, the total for 9 months being 7 percent larger than a year earlier. The increase in Federally inspected slaughter of cattle and calves combined amounted to about 800,000 head. Most of the increase in cattle slaughter was in the slaughter of cows and heifers. During the first 9 months, cow slaughter was 17 percent larger than in that period last year and steer slaughter was only 3 percent larger. In May and June, slaughter of cows was the third largest for these months in the last 13 years. All of the increase in slaughter supplies of cattle this year occurred since April. Slaughter from May to September was the largest for those months since 1927. The average live weight of cattle slaughtered during the first half of 1933 was about 20 pounds heavier than a year earlier, but that of calves was slightly lighter. The increase in the total live weight of cattle and calves slaughtered under Federal inspection during the first 9 months over the corresponding period of last year amounted to 10.9 percent.

The larger slaughter of cattle and calves this year represents, undoubtedly, the upswing in cattle slaughter that would be expected to result from the increase in cattle numbers which began in 1928. This upswing, which was delayed for 2 years as a result of the declining cattle prices accompanying the depression, was accelerated somewhat this year by the shortage of pasture and the small production of feed and forage. But once under way, it may be expected to continue until cattle numbers and the yearly production of cattle

and calves are reduced to a level better adjusted to consumptive demand at a remunerative price.

The increased number of cattle on feed on August 1 this year has been reflected in the heavy marketings of fed steers during the 3 months, August to October. As a result of this large supply there has been no seasonal advance in prices of such cattle since June. Likewise, there has been a very small movement of heavy feeders to feed lots since June to replace the heavy marketings of recent months. As a consequence, a rather sharp curtailment in the supply of fed cattle by the end of the year is in prospect.

The drought that prevailed generally over the whole area from the Great Plains to the Pacific Ocean during June, July, and most of August was broken over most of the area east of the Continental Divide by heavy rains during the latter part of August and early September. With mild temperatures during September a good growth of new grass was made and the stock-water situation in this area was greatly improved. Although this new grass relieved the feed situation temporarily, it is questionable whether it will be of much value as winter feed. Over most of the area west of the Divide the drought condition continued during September and range conditions deteriorated further. For the whole western area, the condition of ranges and of cattle and sheep on October 1, was about the lowest ever reported for the that month during the last 11 years.

In western Kansas, western Oklahoma, and the Panhandle and Plains sections of Texas, the rainfall in August and September increased markedly the production of grain sorghums and other forage and made possible the seeding of winter wheat. Wheat has made a good growth in most sections of this area, and, with an open winter, will furnish a large amount of pasturage and help to offset the shortage of other feeds.

This improvement in the feed situation tended to check the marketing of cattle during September, with the result that slaughter in that month showed a smaller increase than in July and August. To a considerable extent this represented a holding back of cattle in the hope that some improvement in prices might take place. But in spite of the continuing decline in prices, especially for lower grade cows, the marketings of grass cattle both from the Corn Belt and from Western States are expected to be large, relative to years since 1927, during the remainder of 1933.

IMPORTS

Cattle imports during the first 9 months of 1933 totaled 62,000 head compared with 69,000 head for the first 9 months of 1932 and 70,000 in the corresponding period of 1931. Mexico supplied 58,000 head of the 1933 total and 4,000 came from Canada.

Supplies of canned beef inspected by the Bureau of Animal Industry for entry into the United States from January 1 to September 30, 1933, amounting to 31,707,000 pounds, were about 83 percent larger than those received in the corresponding period of 1932, and more than double those received during the first 9 months of 1931. These imports of canned beef were the equivalent of about 80,000 steers. Imports of fresh and frozen beef during the first 9 months of the year totaled 368,000 pounds compared with 738,000 pounds imported during the first 9 months of 1932. Canada and New Zealand continue as the leading sources of imports of fresh and frozen beef, supplying 155,000 pounds and 196,000 pounds, respectively, the remainder coming from Australia. The imports of live cattle and the imports of canned and other beef during the first 9 months of 1933 were the equivalent of slightly more than 2 percent of cattle slaughter under Federal inspection during this period.

FEEDEE DEMAND

Demand for feeder cattle during the first half of 1933 was considerably stronger than the restricted demand that prevailed during the first half of 1932. Inspected shipments of feeder cattle during the first 6 months of this year, totaling 737,000 head, were 20 percent larger than those of the first half of last year. Prices of stocker and feeder cattle during the first half of 1933 were slightly lower than in the corresponding months of 1932, but the spread between prices of feeder cattle and those of slaughter cattle was much smaller. Shipments of feeder calves constituted a larger proportion of the total feeder shipments during this period than in the corresponding period of 1932.

Developments in the cattle-feeding situation from June to the end of September point to a relatively small volume of cattle feeding in the winter of 1933-34, both in the Corn Belt and in most other important feeding States. The short corn crop, the relatively high prices of feed grains, hay, and other feeds, the failure of fat-cattle prices to make any seasonal advance since June, the generally unfavorable returns from cattle feeding during the last 12 months, and in some States the difficulty of financing feeding operations, are the chief factors responsible for the reduction in cattle feeding this fall.

Shipments of stocker and feeder cattle, inspected through livestock markets into the Corn Belt States, during the 3 months, July to September this year, were much the smallest for this period in at least 15 years. The small movement in July and August may be attributed in part to the shortage of pastures generally, but the continued small movement in September was a reflection of the general lack of confidence in the outlook for fed cattle. Shipments during July to September this year were about 30 percent smaller than in those months last year, when shipments were large because of the unusual movement of heavy feeders. As compared with the same months in 1927, the period of the next smallest shipments in 15 years, the reduction amounted to about 17 percent. The greatest decrease from last year was in the movement into the Corn Belt States east of the Mississippi River. Only about half as many cattle were shipped into these States during the 3-month period this year as were shipped in during July to September 1932. Shipments from central markets into States west of the river were about 15 percent less than the small movement last year. There was, however, a relatively large direct movement (largely by truck) from local auction markets in Nebraska and some other States, where this method of marketing continues to expand.

During other recent years in which shipments of stocker and feeder cattle into the Corn Belt were small during July to September, a relatively heavy movement during the last 3 months of the year has occurred. Market supplies of all cattle from October to December this year are expected to be relatively large so that ample supplies of unfinished cattle will be available to meet any improvement in demand for stockers and feeders. Whether such improvement occurs will depend largely upon the trends in prices of fat cattle and of feed grains during the next 6 months.

Available evidence at the end of September indicated that cattle feeding in most of the Western States and in Texas would be on a reduced scale this winter. In most of these States, feed prices are much higher than a year ago, and the returns from cattle feeding last winter were not such as to encourage feeding operations this year.

CONSUMER DEMAND

(See Demand, p. 38)

PRICES

Cattle prices trended sharply downward from early 1930 through 1932, despite the relatively small slaughter supplies during that period. Although prices did not decline much during the first 9 months of 1933, they were below those of a year earlier and were at the lowest levels in more than 25 years. Prices of the better grades of slaughter cattle fluctuated around a fairly stable level during the first 4 months of this year, but trended slightly upward from early May to late July. From early August to the end of October, prices of these grades declined about \$1 per 100 pounds. Prices of the lower grades of slaughter cattle advanced somewhat from February to early June and then declined from \$1 to \$1.50 per 100 pounds by the end of October. With the exception of good grade cows, prices of all slaughter cattle in late October were below those of a year earlier. Prices of stocker and feeder cattle advanced somewhat during the spring in accordance with the usual seasonal tendency, but have declined since early June. Prices of veal calves were fairly stable during the first half of 1933, fluctuating around a level of about \$5.50. During the last 4 months, however, prices of calves advanced somewhat and in late October they were somewhat higher than a year earlier.

The spread between prices of the lower and higher grades of slaughter cattle at the end of October was much smaller than that of a year earlier. In view of the probable marked decrease in the proportion of the better grades of cattle in the slaughter supplies during most of 1934, the margin between the prices of

these grades and the prices of the lower grades is expected to widen materially, and will probably reach a maximum in the late summer of 1934.

The average price of cattle slaughtered under Federal inspection from January to September was \$4.27 per 100 pounds compared with \$5.16 for the corresponding months in 1932 and \$6.48 in that period in 1931. The average price of slaughter calves during the first 9 months of 1933 was \$4.75 per 100 pounds compared with \$5.28 in 1932 and \$7.54 in 1931. The lower prices in 1933 were accompanied by larger slaughter supplies of both cattle and calves, but this increase in supplies was not sufficient to offset the decline in prices. The total amount paid for cattle and calves slaughtered under Federal inspection during the first 9 months of 1933 was about \$286,000,000 compared with \$309,000,000 in the corresponding months of 1932 and \$421,000,000 in 1931.

PRODUCTION OUTLOOK

The outlook for cattle producers during the next 2 years, at least, is relatively unfavorable; but the outlook for cattle feeders during the next 12 months is more promising. Market prices of grass cattle of all kinds—cattle for slaughter and stockers and feeders—are now at the lowest point reached since prices turned downward in 1929, and for some kinds are near the lowest on record. Transportation and marketing costs relative to cattle prices are the highest on record, which makes the returns to producers even lower than market prices indicate.

Although low prices are tending to restrict marketings, the shortage of feeds in many areas and financial necessities are causing cattlemen to make relatively heavy shipments, so that cattle slaughter and supplies of beef for consumption are large at a time when consumer purchasing power is still at a low level. The increase in slaughter since April of this year is no greater than the increase to be expected from the large supplies of cattle now on farms, but it is larger than would have occurred at the prices prevailing if the feed situation were more favorable.

Supplies of fed cattle during the next 12 months are expected to be considerably smaller than they were during the preceding 12 months. This reduced supply will probably become evident in November and December and continue through next summer. But if fat cattle should strengthen somewhat during the next few months, and prices of feed grains should continue to decline or even remain at levels prevailing in late October, a rather strong demand for and heavy purchases of feeders during the late winter and spring may take place. Since such purchases would include a large number of cattle that otherwise would go for slaughter, they would tend to strengthen the prices of all cattle, and especially those of the lower grades, at the time they were being made. The resulting increase in the supply of fed cattle later in the year, however, would tend to depress the prices of such kinds at the time they come on the market. With feeder cattle and corn at present price levels, and smaller supplies of fed cattle and some further improvement in consumer purchasing power in prospect, the outlook for a favorable outcome for cattle feeding seems more promising than for some years.

With present numbers of cows, the annual output of cattle and calves is equal to the largest yearly slaughter of such stock on record. In order to move the total beef and veal production from such a slaughter into consumption, a substantial further increase in consumer buying power is necessary to avoid a reduction in prices of these meats. Although further improvement in consumer buying power is expected during the coming year, it is hardly likely that this improvement will be sufficient to justify large expenditures for feed in order that cattle may be carried over. The retention of cattle on farms and ranges might improve the situation temporarily but would result in a further accumulation of supplies that must eventually be disposed of. A substantial reduction in cow numbers seems necessary before the cattle industry will again be on a profitable production basis.

The current cycle in cattle production has been in its upward phase since 1928. Cattle numbers at the beginning of 1933 were about 15 percent larger than 5 years earlier. Judging from the normal length of previous cycles and other factors now at work, numbers are likely to continue to increase for at least 2 more years. The increase thus far has only recently been reflected in increased cattle slaughter. In previous cycles, slaughter turned upward in the third year following the beginning of the increase in numbers and it increased for 3 consecutive years before the expansion in numbers was checked.

SHEEP AND WOOL

Sheep numbers in the United States are now on the downward trend of the production cycle. A peak in numbers was reached in 1931, following a period of 9 years in which they increased more than 45 percent.

In the western sheep States the length and extent of the downward movement in flock numbers will be determined largely by the number of ewe lambs kept for flock replacements during the next few years. Such replacements during the last 2 years have been relatively small, and the number of ewes of older ages in western flocks is now relatively large. Present widespread poor range conditions, prospective feed shortage during the coming winter, and possible difficulties of financing make normal replacements this year unlikely. In the "native" or "farm-flock" States, where sheep and lambs are largely a minor enterprise, no material change in flock numbers or lamb production during the next few years appears probable.

Marketings of lambs during the remainder of the present marketing year (up to May 1, 1934) are expected to be smaller than those of a year earlier. Present indications point to some reduction in lamb feeding during the coming winter.

World sheep numbers and world wool production have been relatively large during recent years, but world wool production in 1933 will be smaller than in 1932. Domestic-mill activity has been at high levels for the last 6 months, and conditions in the wool industry in Europe have also improved. Although wool prices have advanced materially in both domestic and foreign markets, the domestic advance has been the greater, and the margin between domestic and foreign prices has widened sufficiently to permit imports of substantial quantities of most grades of wool. With a continuation of imports probable, the trend of domestic wool prices during the remainder of this year and in early 1934 will be influenced largely by the movement of prices in foreign markets and the relationship of the dollar to currencies in the principal exporting countries.

SHEEP AND LAMBS

SUPPLIES

The 1933 lamb crop, estimated at 28,988,000 head, was 729,000 head, or 2.5 percent smaller than the 1932 lamb crop, and was the smallest since 1929. Practically all the decrease was in the western sheep States, where the lamb crop of this year, estimated at 18,051,000 head, was about 4 percent smaller than that of 1932. The number of lambs docked per 100 ewes (the percentage lamb crop) in the Western States this year of 70.2 percent was the smallest in the 10 years for which estimates have been made. Last year it was 71.3. The 9-year average, 1924-32, was 79.7. This decrease in percentage lamb crop accompanied a decrease of 592,000 head in the number of breeding ewes on January 1 in the western sheep States.

Although the percentage lamb crop was below average in all the Western States this year it was above that of last year in the States where feed and weather conditions in the winter of 1931-32 were most severe on sheep—Colorado, Utah, Nevada, and Idaho. It was below that of last year in Montana, Wyoming, New Mexico, Washington, Oregon, and California, and was unchanged in Texas and South Dakota.

The reduction in the 1932 lamb crop in the Western States was a result largely of the severe winter of 1931-32 and the shortage of feed following the 1931 drought. The reduction in the lamb crop this year was caused by the unfavorable spring weather, with severe storms in April and May, and the shortage of feed during the lambing period in the late lambing States.

Death losses were much above average in both 1932 and 1933. The spring losses in some sections in the latter year were almost as large, relatively, as the heaviest winter losses incurred in any of the States in 1932.

Range feed in nearly all of the western sheep States was slow to start this year because of the late cold spring, and it was not until late May that supplies of feed became fairly ample. The condition of ranges on June 1 was poor for that date. The month of June was dry and hot over most of the West and, instead of making the usual seasonal improvement during June, range conditions declined and on July 1 were the lowest for that date in the 10 years for which records are available. The condition of sheep and lambs on July 1 was also the lowest on record for that date.

Continued drought through July and much of August brought further deterioration to range feed. During the latter part of August and early September, however, the area east of the Rocky Mountains received heavy rains that greatly relieved the stock-water situation. September temperatures were generally mild and a very considerable growth of new grass was made which temporarily improved the feed situation, but the value of this feed for winter is questionable. In the area west of the Rocky Mountains rainfall was insufficient and feed conditions continued to decline.

Most of the drought area in Texas was much improved by the August and September rains, but precipitation in the main sheep area in the Edwards Plateau was very light and feed conditions there continued to decline. The feed situation in this area at the middle of October was very serious, with little prospect for improvement before next spring. Unless large supplies of feed are shipped into this area a very heavy death loss next winter seems certain.

Although supplies of hay and feed grains in most of the western sheep States are larger than at the end of 1931, prospects for winter range feed, especially on the desert ranges, are little if any better than in 1931. Sheepmen in much of this area are facing another winter of short feed supplies and relatively high-priced feed.

Supplies of all kinds of feed grains, hay, and forage in the Corn Belt States will be short generally, but this shortage probably will not be sufficient to cause any liquidation of native breeding sheep in these States. Generous rainfall during August and September over much of the area and a late fall generally have materially improved the feed situation. This improved feed situation has not yet improved the Corn Belt demand for feeder lambs, and shipments of lambs from markets into this area from July to September were but little different from the very small shipment in these months in 1932 and were over 40 percent smaller than the average for the 5 years 1927 to 1931. The direct movement of western lambs to Corn Belt feed lots for these months was also below last year, and the total movement, from markets and direct, for the 6 months July to December promises to be below that of last year.

Although information available as to feeding in the Western States before the middle of November is usually inadequate, reports from these States indicate that for the whole area feeding will be in somewhat smaller volume than last year, with most of the decrease in Colorado and Texas.

Slaughter of lambs and sheep for the first 6 months of the current crop-marketing year which began May 1 was about 9,000,000 head, a decrease of about 2 percent from the first 6 months of the 1932-33 marketing year. Should the proportion of slaughter during the first 6 months this year to slaughter for the whole crop year be about the same as the proportion that prevailed in most years since 1922, total crop-year slaughter and slaughter during the last 6 months would both exceed that of the previous crop year. If the proportion should be as large as in the 1932-33 year, slaughter for the entire year and the last 6 months would be somewhat smaller than in the 1932-33 year. It seems more likely that the latter rather than the former will be the case.

The proportion of aged sheep in the total slaughter supplies of sheep and lambs has been relatively small in recent years, and it was unusually small during the last two marketing years because of the very low prices of aged slaughter sheep. During these 2 years, 96 percent of the total slaughter supplies of sheep and lambs consisted of lambs and yearlings, which was the largest proportion found in the 11 years since 1922 for which records are available.

DEMAND

(See Demand, p. 38)

PRICES

The trend of sheep and lamb prices was sharply downward from early 1929 to the end of 1931. From late 1931 to May 1933, prices of Good and Choice grade slaughter lambs at Chicago fluctuated between \$5 and \$7 per 100 pounds, with a tendency to hold close to \$6 much of the time. In May of this year lamb prices advanced sharply and in early June new-crop lambs sold above \$8 per 100 pounds at Chicago. This advance in prices was fairly well maintained through June and July, but prices have tended downward since early August.

The price of Good and Choice grade slaughter lambs at Chicago in late October was about \$6.50 per 100 pounds compared with \$5.20 at that time last year. The increase in lamb prices during the summer compared with a year earlier was largely a result of the sharp advances in prices of pelts and other byproducts, since wholesale prices of dressed lamb have been lower than last year. Prices of feeder lambs are also higher than a year earlier. The price of Good and Choice feeder lambs at Chicago in late October was \$6.30 compared with \$5 a year earlier.

Prices of slaughter ewes dropped to the lowest levels on record in the fall of 1931; then they made some recovery in the first quarter of 1932, most of which was lost in May of that year. Prices thus far in 1933 have held fairly stable at a level above that of 1932. The average price of slaughter ewes at Chicago in late October was about \$2 per 100 pounds compared with about \$1.60 at that time in 1932.

The average price of sheep and lambs slaughtered under Federal inspection during the 9 months January to September 1933 was \$6.03 per 100 pounds compared with \$5.79 in the corresponding period in 1932 and \$7.55 in 1931. Slaughter supplies of sheep and lambs during this period were 3.3 percent smaller than in 1932 and about the same as in 1931. With the increase in prices this year over last year about offsetting the decrease in supplies, the amount paid for sheep and lambs slaughtered under Federal inspection during the first 9 months of 1933 totaled about \$64,000,000 or about the same as in those months in 1932.

Wholesale prices of dressed lamb also reached a low point near the end of 1931 and have since fluctuated in a relatively narrow range above this low point. Retail prices of lamb, however, continued downward until April of this year. Some advance in both retail and wholesale prices occurred from May to August this year, but such prices in September were slightly below those of the corresponding month a year earlier.

PRODUCTION OUTLOOK

With wool prices substantially higher and slaughter-lamb prices somewhat higher than a year ago, the income of sheep growers from their 1933 production will be considerably above that from the 1932 production, thus improving the financial position of the industry. On the other hand, the western sheep industry is facing another winter of poor range and short feed, generally, with a possibility of another season of heavy death losses during the early months of 1934. This will make two bad drought years during the last three, and a succession of 4 or 5 years during little of which have range and feed conditions been normal. These adverse operating conditions, with greatly increased burden of feed and maintenance costs, and the low level of lamb and wool prices have been the principal factors causing the decrease in sheep numbers.

Although the heavy death losses of the last 2 years have tended to reduce the excessive number of old ewes (which had resulted from lack of outlet because of the low prices) western flocks on the average are over age. Relatively small numbers of ewe lambs have been retained for replacements since 1930. If larger numbers of ewe lambs are not kept back this year and next compared with 1931 and 1932, a further decrease in breeding ewes is certain. Whether such replacements can be kept or purchased this fall depends largely upon the attitude of the financial organizations that finance the western sheep industry. In general the attitude of these organizations is to maintain the industry on a good operating basis, but the probability of having to make large advances for feed again this winter and the possibility of another season of heavy losses may deter them from making advances for replacement purposes, even when these replacements seem highly desirable from the standpoint of good flock management. If relatively larger numbers of ewe lambs should be kept this year, the number of lambs to be marketed from the late lamb crop would be considerably reduced. This would cut down the number of feeder lambs marketed and would tend to adjust the number of those to the poor feed situation in the Corn Belt.

Sheep numbers in the United States are now on the downward trend, following a 9-year period, 1923-31, in which numbers increased nearly 17,000,000 head, or more than 45 percent. This year, 1933, is the second year of the downswing in the present production cycle. In two of the three previous cycles numbers declined over a period of 3 years, whereas in the other they continued downward for 6 years. In view of the present position of the sheep industry in the Western States as regards land ownership, range control, and grazing allot-

ments, it is highly improbable that the downward trend in numbers will be of long duration. Should wool prices continue at or near present levels through next year, and should feed and weather conditions for the next 2 years be favorable, it is not improbable that next year would be the last in the downward trend of numbers, with an upward tendency plainly evident by 1935.

Prices of wool have advanced much more than have lamb prices and are relatively high compared with those of other agricultural products and other raw materials. During the next year, improvements in general business conditions and in consumer buying power can be expected to be reflected in lamb prices more than in wool prices.

WOOL

DOMESTIC AND FOREIGN PRODUCTION

World wool production in 1933 will be considerably smaller than in 1932, and smaller than the relatively high production of other recent years. Decreases in wool production this year have been reported for several Southern Hemisphere countries and only a small increase in shorn-wool production has been estimated for the United States. Sheep numbers in most of the important sheep-producing countries now appear to be on a downward trend. This reduction in numbers will tend to result in a further decline in wool production in 1934, but this tendency may be altered to some extent by changes in weather and feed conditions.

Production of shorn wool in the United States for 1933 is estimated at 348,914,000 pounds, or about 1 percent more than the production in 1932, and 7 percent less than the record production of 1931. The small increase in production this year was largely the result of increased production in Texas, since production in other areas was not greatly different from that of 1932. In the native sheep States production was about the same as last year, little change occurring either in the number of sheep shorn or in the average weight per fleece. In the Western States, not including Texas, the number of sheep shorn was smaller than last year, but the decrease in numbers was largely offset by an increase in the average weight per fleece in these States. Last year fleece weights in the Western States were lighter than usual because of unfavorable weather and feed conditions. In Texas, wool production in 1933 was considerably larger than in 1932 because of a larger number of sheep shorn and a greater average weight of wool per sheep. The production of pulled wool in the United States in 1933 probably will be slightly smaller than the 67,000,000 pounds produced in 1932.

Unfavorable weather conditions in Australia and in South Africa, along with very low prices, are chiefly responsible for the reduction in wool production in the Southern Hemisphere countries. In addition to a smaller wool clip in 1933-34, the carry-over in those countries from the previous season is small, owing to unusually heavy exports. The Australian clip is estimated at 883,000,000 pounds compared with an average of 970,000,000 pounds for the 5 years, 1928-32. Last year, production in Australia was the largest on record and is estimated to have been 1,028,000,000 pounds. The clip in South Africa in 1933-34 is estimated at 280,000,000 pounds compared with 316,000,000 pounds in 1932-33, according to latest reports. For the 5-year period, 1928-32, production in that country averaged 305,000,000 pounds. Production in New Zealand, which has been declining since 1931, is provisionally estimated at 273,000,000 pounds for 1933-34, a decrease of 3 percent compared with 1932-33. In Argentina wool production in 1933-34 estimated at 348,000,000 pounds was about 5 percent larger than that of 1932-33. Because of increased consumption of wool in Argentina and the reduction in the carry-over during the last year, the quantity of wool available for export from Argentina in 1933-34 is smaller than in 1932-33.

Decreases in wool production in 1933 were also reported in France, Germany, Hungary and Greece; but an increase of 2 percent was indicated for the United Kingdom. The estimated production of wool for 1933 in 12 countries, which usually supply about two thirds of the world clip, excluding Russia and China, totaled 2,081,000,000 pounds, a reduction of 8 percent from last year.

World sheep numbers expanded greatly during the 5 years prior to 1932, but in most of the important sheep-producing countries numbers now appear to be on a downward trend. In many countries, however, weather and feed conditions are the most important factors affecting the level of sheep production.

After having reached a record total during 1931 and 1932 sheep numbers showed a decrease in most countries reporting thus far in 1933. In the United States the estimated decrease was 3 percent, and in South Africa it was 5 percent. A further reduction in numbers during the next year in several Southern Hemisphere countries is probable, because of the severe drought prevailing in those countries this year.

CONSUMPTION AND TRADE

Consumption of wool by United States mills increased rapidly from April to June, and since June has been maintained at a relatively high level. In the first 9 months of 1933 consumption of combing and clothing wool by manufacturers reporting to the Bureau of the Census, comprising a major portion of the industry, was about 40 percent greater than in the corresponding months in 1932. Consumption in the summer months of this year was greater than in any 3-month period since 1923. In view of the low level of consumer incomes, a continuation of this very high rate of activity over any considerable length of time was hardly to be expected, and some decline was evident in August and September. Consumption during the final quarter of the year, however, probably will be larger than that of a year earlier.

Developments in the wool industry in 1934 will be strongly influenced by developments in the general economic situation in the coming year. In view of the rapid increase in prices of wool and wool manufactures and considering the high level of activity in this industry in 1933, a substantial increase in consumer incomes will be necessary if activity in 1934 is to be maintained at a level fairly comparable with that of the last half of 1933.

Imports of combing and clothing wool into the United States in the first 9 months of 1933 were 31,464,000 pounds, compared with 14,055,000 pounds imported in the first 9 months of last year. Imports from July to September 1933 were well above average for that season of the year. Total imports were the first 9 months of the year, however, were below average as imports were very small from January to June. With United States wool consumption above average for the first 9 months of 1933 it seems probable that before the new clip is available larger imports will be necessary than for several years. United States production for 1933, including pulled wool, will probably be well below the estimated average consumption of 463,000,000 pounds annually for the 5 years 1928-32. Carry-over of old wool was reported to be well cleared in the early months of 1933.

Conditions in the wool industry have also improved in foreign countries in 1933, particularly in the United Kingdom. Unemployment in the woolen and worsted industry of the United Kingdom in recent months has been lower than at any time since the first half of 1929. Most of the European countries and Japan increased their imports of wool in the period so far reported for 1933 as compared with the corresponding period of 1932. Stocks of tops in commission combing establishments of continental Europe were above average at the end of August. Net imports of wool into the United Kingdom in the first 8 months of 1933 were about equal to the imports for the corresponding period of 1932. The increase in consumption probably has resulted in a considerable decline in stocks of wool in that country.

PRICES

Prices of wool advanced rapidly in the United States following the bank holidays in March and the suspension of the gold payments in April. This upward movement has slowed down considerably in recent months, but the rapid clearance of the clip in the Western States, the strength in foreign markets, and the high rate of manufacturing activity, have helped to maintain prices during periods of slow trading at Boston. To the middle of October the advance in wool prices has been well maintained despite the fact that declines in prices of other important commodities have occurred during the last 2 months. Prices of strictly combing territory wool, scoured basis, at Boston in October were 90 to 110 percent above the average price for February and were 125 to 165 percent higher than in July 1932, when the lowest points in many years were reached. These wools were 63.5 cents a pound, scoured basis, for 46s, and 83 cents for 64s, 70s, 80s, in late October compared with 30 cents and 44 cents, respectively, in February before the advance in prices got underway, and 24 cents and 36

cents, respectively, at the low point in 1932. Ohio wool and similar grease wools of strictly combing order were quoted at 33 to 41 cents a pound in late October compared with 16-19½ cents in February and 12-15 cents in July 1932. The United States average farm price as of October 15 was 23.6 cents per pound compared with 9.5 cents on that date in 1932 and the 5-year pre-war average (1909-14) of 17.8 cents.

Wool prices have also advanced considerably in foreign countries since the early months of 1933. Prices in British currency at the London wool sales in October were about 50 percent above the low point of early 1933, but because of the depreciation of the dollar since early 1933, the advance in prices of wool in foreign markets in terms of United States currency has been relatively greater. The advance in domestic wool prices, however, has been greater than the advance in foreign wool prices, in terms of United States currency, and in recent months the margin of domestic wool prices over foreign wool prices has widened sufficiently to permit imports of substantial quantities of nearly all grades of wool. Since materially larger imports than a year earlier are probable, before the 1934 domestic clip becomes available, the trend of domestic prices during the remainder of this year and in early 1934 will be influenced largely by the movements of prices in foreign countries and the fluctuation in the dollar in relation to the currencies in the principal exporting countries.

MOHAIR

Although the mohair situation has improved greatly in many respects since February, stocks of mohair are still large as the result of accumulation during the last 3 years. These stocks at the end of 1933 will probably be at least as large as at the end of 1932. Until these stocks are materially reduced, mohair producers should not base their plans on the assumption that prices comparable with those paid for this year's fall clip will be maintained.

Improvement since February has been substantial. At that time the outlook for mohair producers seemed to be darker than that of other agricultural producers. Prices were ruinously low, prospective production was still at a high level, consumption was so greatly restricted that imports had ceased, and the prospects of disposing of the excessive stocks of domestic hair that had accumulated for 3 years seemed remote. By September the picture had changed markedly. Mohair had advanced in price more than any other farm product, mills were operating at capacity, with large unfilled orders, purchases of foreign hair were being made and distribution of finished goods on a large scale to the established uses and some new ones were being made. Stocks of mohair are still large, however, as a result of accumulation during the last 3 years, and on January 1 will probably be at least as large as a year earlier.

SUPPLIES

The improvement in mohair prices has not been due to small supplies. The accumulation of hair in the hands of manufacturers at the beginning of 1933 was estimated at between 30,000,000 and 35,000,000 pounds, a quantity about equal to 2 years' needs at a relatively high rate of consumption. The estimate of 1933 production has not yet been made but reports from Texas indicate that the production in that State was probably 15 percent smaller in 1933 than in 1932. A similar reduction in the total clip would amount to 2,500,000 pounds, making for this year a total of about 14,000,000 pounds, compared with 16,495,000 pounds in 1932 and the record clip of 19,071,000 pounds in 1931. Even if mill consumption continues to the end of the year at the high level reached early in the fall, it is doubtful that consumption will be equal to this year's production, and the carry-over at the end of this year will probably exceed that of a year earlier.

CONSUMPTION

Little specific information on mohair consumption is available. During the first quarter of 1933 consumption was at the very low levels of 1932, but during the second quarter it increased rapidly, and since May it is estimated to have been at a rate of about 17,000,000 pounds a year. If continued at this rate until the end of the year the total for this year would amount to 10,000,000 to 12,000,000 pounds. Not only has the manufacture of strictly mohair fabrics (automobile linings, furniture and car upholstery, and draperies) been on a large scale, but the woolen industry has used substantial quantities of mohair this year.

PRICES

Mohair prices reached their lowest levels early in this year and the fall clip of 1932 sold at the lowest prices at which mohair has left the hands of producers. The average price per pound for adult hair to Texas producers last fall was around 8 cents and such hair in original bags at Boston was quoted at 10 to 12 cents. Early this year sorted Medium at Boston was quoted at 12 to 15 cents. Beginning in April prices began to advance and prices to Texas growers for adult spring were 12 to 13 cents. From May on, prices advanced rapidly and by October 1 sorted Medium grade hair in Boston was quoted at 45 to 52 cents and the prices for the fall Texas clip ranged from 36 to 45 cents, with the bulk at 40 to 42 cents. Thus the advance in prices to Texas growers from the fall of 1932 to the fall of 1933 was from 8 cents to 40 cents, or 400 percent.

This phenomenal price advance in the face of large stocks seems to have been due to a considerable extent to the location of the supplies. Practically all of the accumulation of mohair at the end of 1932 was in the hands of a limited number of manufacturers, with stocks in hands of dealers very small. The spring clip of 1933 was nearly all taken by these same manufacturers with little going into the hands of dealers, and the available supply on the market was very small. As wool consumption increased during the spring and summer, and wool manufacturers needed mohair for special uses, the supply for sale was limited and there was also keen competition from small mohair manufacturers. Prices advanced rapidly and when the fall Texas clip became available dealers were keen competitors for this supply and the price advanced steadily as the sale season advanced, with better than 45 cents reported near the close. Prices paid in Texas were above the Boston equivalent, early in September, but Boston prices were soon advanced in line with the Texas prices.

FOREIGN SITUATION

Production of mohair in Turkey and South Africa has decreased more sharply than in the United States, these three countries producing practically the entire world supply. This year's clip in Turkey is forecast at about 5,500,000 pounds, compared with over 9,000,000 pounds in 1932. The South Africa clip is estimated at about 8,250,000 pounds this year, compared with 9,000,000 pounds last year.

Stocks of mohair carried over from the previous year in these two countries were also much reduced; for Turkey the stocks on April 30 this year were 5,500,000 pounds, compared with 8,800,000 a year earlier; for South Africa the stocks on June 30 were about 7,000,000 pounds, 4,000,000 of which were reported as sold, compared with 8,000,000 a year earlier. The greater part of the large stock of mohair accumulated in Turkey in 1931 and 1932 was sold to Russia, where it was to be used presumably for blanket and floor-covering manufacture, and much of the accumulated stocks in South Africa went to Great Britain. Although little of the old stocks in either country came to the United States, it is reported that considerable of this year's clip in Turkey has been bought for shipment here.

The decrease in mohair production this year in both Turkey and South Africa resulted largely from the decreased number of goats. Some of this decrease may have resulted from poorer care, but much of it came from the very heavy slaughter of goats for food when the price of mohair went so low that it did not pay to keep goats for hair production. The improved prices and better prospects for mohair will probably stop any further depletion of flocks by slaughter, but it will require several years of improved prices before any considerable tendency for increased mohair production will develop.

PRODUCTION OUTLOOK

Mohair production declined this year because of heavy losses of both goats and kids in Texas this spring. These losses were due to the weather and to the lack of usual care because of the low prices for mohair and goats. With mohair prices back near predepression levels and with the increased returns from this year's fall clip, producers will be able and willing to give their flocks better care. However, the feed situation in the main sheep-and-goat area of Texas in October this year was the poorest in some years and a severe winter and spring may bring heavy losses. The tendency in Texas, if prices remain

at about present levels, will be to expand numbers at least to the 1931 number. But it seems apparent that only a continued expanding use of mohair fabrics will make possible a reduction of present stocks and until these are reduced to about a year's normal supply they may become a factor weakening to price maintenance. During the last 3 years kid hair and the finer grades of mohair have been in good demand while the coarser grades were almost unsalable, and most of the present stock of mohair in this country is of the coarser type.

HORSES AND MULES

Developments during the last 2 years indicate the beginning of a shortage in the supply of work stock, which may eventually reach serious proportions. The time when this shortage will be greatest must necessarily depend somewhat upon programs of acreage reduction, but present indications are that with the proposed programs in effect, the probability of overbreeding will be remote. Even should any material increase in the purchasing power of farmers result in an increase in the use of mechanical power, the future need for work stock to replace an increasing proportion of old animals probably will be reflected in a growing demand for good animals for several years.

SUPPLIES

Numbers of horses and mules both on farms and not on farms have decreased markedly for several years. On January 1, 1933, horses on farms numbered 12,163,000, which is only 57 percent of the number reported on January 1, 1918, when the largest number on record was reported. On January 1, 1933, the number of mules on farms was 4,981,000, which was 84 percent of the number on farms in 1925, when mule numbers were greatest. The decreases in horses and mules not on farms (in cities, towns, and elsewhere) since 1920 have been relatively much larger than the decreases on farms. Estimates based upon changes in selected counties and cities, shown by enumerations made by the Census Bureau for 1920 and 1930, indicate that the number of horses not on farms in 1930 was about 300,000 head and of mules about 75,000 head. In 1920 the census enumerated 1,705,000 horses and 378,000 mules, not on farms, and in 1910, 3,183,000 horses and 270,000 mules. The percentage decreases between 1920 and 1930 amount to about 80 for both horses and mules. With such a small number of horses and mules not on farms, farmers can no longer expect to add to their supply of work stock with animals released from work in the cities.

It is evident that the present numbers of work horses and mules cannot be maintained, because the number of animals reaching working age is not large enough to replace animals of working age that die. Furthermore, the efficiency of work horses is declining because of increasing average age. The fact that since 1929, prices of horses and mules have declined relatively less than have those of any other important agricultural product, indicates that a shortage of horses and mules was developing. From September 15, 1929, to September 15, 1932, farm prices of horses declined 28 percent and farm prices of mules declined 31 percent. At the same time prices of all farm products declined 58 percent. On September 15, 1933, the average farm price of horses was \$69 per head, and of mules \$77 per head, which, in both cases, was about 17 percent greater than the average price a year earlier. These increases were approximately the same as the percentage increase in the average price of all farm products.

DEMAND

The relatively high cost of tractors, gasoline, and oil as compared with costs of feed that farmers themselves produce is apparently causing many farmers on the small and moderate-sized farms to again look to horses for their source of power. Consequently, prices of farm horses at some markets were as much as \$25 a head higher in October 1933 than they were a year earlier. Heavy draft horses, weighing 1,800 pounds and up, have but a limited outlet. The well-broken handy-weight horses, thick and blocky in type and of good quality, weighing from 1,400 to 1,600 pounds, are in good general demand, with prices at midwestern markets ranging from \$100 to \$150 per head, depending on individual merit.

The tone of the mule markets during September and early October of 1933 was considerably more optimistic than it has been for several years. Receipts

of mules at public stockyards during the first 8 months of 1933 were about 45 percent larger than those for the corresponding period of 1932. During the spring and fall of 1933 there was a broad demand, and prices of September were back to those of the high time of the year in February and March, and about \$5 to \$15 a head higher than those in September 1932. There has been more active interest at markets in mules to be used in the South than at any time in the last 5 years. Such mules in early October 1933 were bringing as much as \$15 a head more than similar mules were bringing a year earlier.

For several years the number of colts raised on farms has not been sufficient to maintain the present number of work horses and mules, as indicated by figures for the last 3 census years. In 1920, about 12.8 percent of the horses on farms were less than 2 years of age. By 1925 the percentage had dropped to 6.7, and in 1930 it had increased slightly to about 7 percent. On the basis of the 1930 census figures the number of colts produced in 1928 and 1929 was only about one half of the number needed to maintain a constant horse population equal to that of 1930. In 1920 about 14.4 percent of all mules on farms were under 2 years old, in 1925 only 6.6 percent were under 2 years old, and in 1930 only about 3.1 percent were under 2 years old. The rate of mule-colt production in 1928 and 1929 was at best only about one third enough to maintain the mule population of 1930. Since 1930, horse and mule numbers have continued to decline; breeding of mares has increased somewhat but is not yet sufficient to maintain the present numbers of horses and mules.

GENERAL PROSPECTS

The decreases in the numbers of horses and mules due to the declining number of colts raised each year have been accompanied by increases in the average ages of all horses and mules. Reports from crop reporters of the Department of Agriculture show that between 1927 and 1933 the average age of horses on their farms increased from 9.6 years to 10.8 years and of mules from 8.5 years to 11.2 years. Computations made from estimates of the number of horse and mule colts raised each year from 1918 to 1932 indicate that at the beginning of 1933 about 36 percent of all horses and 51 percent of all mules on farms were over 15 years of age. Hence, animal power on farms has decreased not only from a decline in the number of units but also from a depreciation in the units remaining.

The number of work horses and mules probably will continue to decline for several years. This decline can be checked only if more extensive breeding for both horse and mule colts is soon resumed. Available reports from a number of States for the enrollment season of 1933 indicate that there has been a general increase over the previous year in stallion and jack enrollment. There is probably more interest in breeding for horse and mule colts at this time than has been evident for a great many years. This interest is indicated by the fact that good 2- and 3-year-old fillies are bringing from \$10 to \$15 more per head than geldings of the same age, type, and quality. An increased interest is also shown for mares, colts, and young animals up to 4 years old. There is, however, no indication at this time that there is any likelihood of overbreeding. A scarcity of good sires and a shortage of young work mares suitable for breeding purposes probably mean that even with a strong price incentive to increase breeding, progress will be slow for some years. It is generally felt that if breeding were expanded very materially at this time there would be little likelihood of stopping the decrease in horse and mule numbers for several years, because of the relatively larger numbers of old animals.

The horse-and-mule outlook may be modified somewhat by the future course of mechanization of agriculture, and by the future policy of the Agricultural Adjustment Administration with respect to acreage reduction. According to the census, the number of tractors on farms increased 274 percent from 1920 to 1930, to a total of about 920,000 in the latter year. Truck numbers on farms increased about 547 percent, to a total of 900,385 in 1930. In 1920 the number of horses and mules on farms was more than ample to furnish all needed motive power on farms. At the beginning of 1933 the number of horses and mules alone would not have been sufficient to furnish the motive power for the farm operations of that year; neither would it have been sufficient to furnish the motive power if the acreages of crops in the United States were reduced in line with present plans of acreage control.

The future need for more or less work stock will depend upon whether the use of mechanical power increases or decreases, and upon the acreage of crops

grown. During the last 2 years an apparent shortage in animal power on farms in many States was due to some extent to the financial situation in agriculture which has made it difficult for farmers to buy replacements, repairs, and fuel for motor machinery. This situation forced the farmer to depend more upon animal power for farm work and has had some influence upon the demand for horses and mules. Should crop acreage be reduced materially during the next few years, such reduction will result in the need for less motive power on farms than at present. It is improbable, however, that over a period of 2 or 3 years, such reduced need for power would more than offset the reduction in power available on farms, because of declining numbers of horses and mules, and because of the tendency of farmers to purchase little mechanical power equipment in recent years. There is no reason to suppose that, from the long-time standpoint, the use of tractors and trucks for farm work has reached its peak. Eventually, some expansion in the use of these machines may be necessary merely to offset the rapidly decreasing numbers of work animals, since under the most favorable conditions it will be some time before this decrease can be halted. It is possible, of course, that new developments in the field of mechanical power may be an important factor in establishing the limits of any upward movement in the demand for work stock.

It should be remembered that horses are largely a byproduct of farming. Good breeding mares can be used as a source of motive power and at the same time produce colts that will maintain the power plant. Many farms are well suited for the economical production of a few colts to replace worn-out work animals and to be sold. This is particularly true in the areas in which there is an abundance of cheap roughage. It seems probable that farmers will not be able to replace their present work stock a few years from now at prices now prevailing, and many who expect to continue to use animal power can well afford at this time to lay plans for their future supply of work stock. Mares that can work and produce colts form the economical basis for such plans. If the mares are young, the farmer will be in better position to expand colt raising as the demand for colts increases.

DAIRY PRODUCTS

Returns from dairying for several years have been relatively favorable as compared with returns from most other types of farming, and this has been true in previous periods of falling prices. During the next year or two, however, the comparative situation seems likely to be much less favorable to dairy producers. Evidences of weakness in the present dairy situation are: Record stocks of dairy products, a lowered rate of consumption, a high rate of production, record numbers of cows being milked; and low prices of meat-producing livestock that tend to make it relatively more profitable to use feed for dairy production than for meat production.

Under these conditions the apparent strength in prices of dairy products is due to the price-supporting measures being applied. Improvement in general purchasing power may later supplement the effect of these measures, but there is little prospect for further considerable rise in prices of dairy products within the next few months, except as a result of a distinct rise in the general price level. Dairy prices have lagged somewhat behind those of other farm products in previous recovery periods. It is probable they will now follow this usual course. Feed costs are expected to continue relatively high in comparison with prices of dairy products during the current feeding period.

Although conditions abroad indicate no pressure of foreign supplies on our markets during the coming winter season, they indicate but slight prospect of profitable foreign outlets.

FARM PRODUCTION

Except for seasonal fluctuations, the number of milk cows on farms has increased continuously since 1928. On June 1, 1933, the number of milk cows on farms was about 2.3 percent above the number a year earlier and about 14 percent above the number of June 1928. The increase during these 5 years was due to various causes, including the large supply of labor on farms, the low price of feed grains, and the relatively favorable prices of dairy products as compared with prices of other farm products.

The rapid rate of increase has also been due in large part to one of the periodic increases in cattle numbers that have occurred in this country about

every 15 years in the last half century. The estimates of numbers of cattle on farms on January 1 show increases each year from 1912 to 1918, nearly continuous yearly reductions until 1928, and increases each year since then. Total cattle numbers have now reached so high a point that the rate of marketing has increased and the turning point in total cattle numbers may be reached within about 2 years.

Since last spring there has been a sharp increase in the number of cows marketed, due apparently to the accumulating surplus supply of cattle, to the shortage and rapidly increasing cost of feed, poor pastures, and the tendency of the prices of dairy products to rise less rapidly than the prices of many other farm products. The number of cows and heifers slaughtered under Federal inspection during May, June, July, and August totaled 1,342,000 compared with 1,010,000 in those months last year, and an average of 1,112,000 in those months during the preceding 3 years. Part of this increase in cow marketings appears to have been due to the closer culling of dairy herds. Calf slaughter has also been heavy for several months in succession. This heavy marketing of cattle and calves has probably been somewhat stimulated by the drought, but it was well under way before the drought conditions developed. Current June reports also showed a reduction of about 3 percent in the number of dairy heifers freshening during the current year and a slightly smaller proportion of spring-born heifer calves being raised for milk cows than a year ago. The price of milk cows, which for several years was relatively high in comparison with feed costs, on October 1, 1933, was no higher than a year earlier, while feed-grain prices had doubled. This will tend further to reduce the number of dairy heifers raised.

These figures, by themselves, would seem to indicate a decided slowing up in the rate at which dairy herds are increasing, but the situation is now complicated by the indications that farmers in the western Corn Belt are milking some cows that were formerly kept only for beef production. This would be a natural adjustment in that area, for during the last 3 months the local price of butterfat has been averaging one fourth higher than in the same months of last year, while beef cattle have been bringing one fifth less. In much of this area, the income from crop production this season has been seriously reduced by poor crops, and on many farms in the drought areas sales of butterfat are at present almost the only source of income. So long as this situation continues it is to be expected that farmers in the beef-producing sections, and particularly in the areas affected by drought, will dispose of more of their calves than usual and take advantage of every opportunity to increase the quantity of butterfat sold by milking more of the cows. This largely explains the recent heavy increases over last year in creamery-butter production in the Dakotas, Kansas, Oklahoma, and Texas, and for the country as a whole the shift of cows from a strictly beef to a milking classification may largely offset the closer culling of dairy herds being practiced in most market-milk areas. This complicates the problem facing the farmers in strictly dairy areas and makes it difficult to forecast the trend of numbers of milk cows.

Excluding nearly 4,000,000 cows of beef or dual-purpose type that are regularly milked and are included in the estimates of milk cows, there are in the country as a whole about 10,000,000 beef cows. The majority of these cows are in large herds in the range areas but several million are on farms in the Corn Belt and elsewhere. Some of these cows have been milked in past years and about a fifth are with their first calves. There are, therefore, enough beef cows available to permit the total number of cows milked to be increased several percent in a year if prices of dairy products are high enough to make the change worth while. However, excluding this beef stock, it is still obvious that the number of milk cows is abnormally high and can hardly be quickly reduced without greatly increasing the number of cows marketed and further depressing the price for that class of cattle. For this reason the potential producing capacity of the dairy herds will remain high for another year and probably for at least 2 years unless measures are taken to help farmers dispose of the surplus cows.

Since 1929, the increase in the quantity of milk produced has not been at all proportional to the increased number of cows milked. According to current estimates, production per cow, after increasing steadily from around 4,100 pounds per year in 1924 to a peak of 4,582 pounds in 1929, declined to 4,510 pounds in 1930, 4,461 pounds in 1931, and to 4,302 pounds in 1932. During the

first 6 months of 1933 milk production per cow averaged 2 to 3 percent below the same months in 1932.

During the summer and early fall of 1933, however, the higher prices paid for butterfat temporarily increased milk production per cow and markedly increased butterfat deliveries compared with deliveries at the same season last year. This increase appears to have been due to a reduction in the quantity of butter made on farms, to increased deliveries of butterfat as compared with milk, to the increase in the number of milk cows, and to a temporary increase in the production of milk per cow. Part of this increase in the output per cow may have been due to the culling out of dry cows and low producers, delayed drying off of the cows, or to shifts in freshening dates, but detailed reports for several thousand farms show that on August 1, earlier weaning of the calves, due to the higher price of butterfat and lower prices of veals and beef, accounted for about a 1 percent increase in milk production. Partially as a result of this change, the price of fat veals soon rose sharply in comparison with prices of most other calves, so the tendency toward early weaning was more or less temporary. It is, therefore, important chiefly in showing the rapidity with which dairy production can be increased even under adverse pasture and feed conditions when price conditions make an increase worth while.

The shortage of grain and hay production in 1933 will tend to reduce milk production during the current feeding period. Present estimates indicate that some 82,000,000 tons of corn, oats, barley, and grain sorghums have been harvested this season, compared with 110,000,000 tons last year, 97,500,000 tons in 1931, 87,000,000 tons in 1930, and an average of 103,600,000 tons during the preceding 10 years. Even allowing for farm stocks carried over from previous crops the total feed-grain supply is about 9 percent below the average of the last 5 years. Hay supplies are short but are not so seriously short as seemed probable a few months ago. The more liberal rainfall in August and September increased the yield of late cuttings and late varieties of hay and total hay production is estimated as 76,400,000 tons compared with about 82,000,000 tons produced last year. As there is somewhat more old hay on hand the only areas threatened with an acute shortage for the coming feeding period are the areas that were most seriously affected by the drought this season, chiefly North Dakota, South Dakota, and portions of the Southwest.

Supplies of byproduct feeds for the fall and winter of 1933-34 are slightly below those for the corresponding period last season. Prices are on an average about 50 percent above a year ago, reflecting the sharply higher grain prices and the short supplies of feed grains this season. The index of feed prices on October 17 was 62.2 percent of the 1926 level compared with 41.7 a year ago.

Allowing for recent heavy marketings of livestock, the total supply of feed and hay seems slightly shorter in proportion to livestock numbers than in the drought year of 1930. The extent to which milk cows will be affected by the necessity of reducing the quantity of grain fed to livestock depends largely on relative prices. This fall, the heavy marketing of cattle and hogs is tending to depress the price of meat animals as compared with the price of dairy products, so that the feed of milk cows may not be reduced as much as is that of other classes of livestock, and where the finances of farmers permit, it is probable that more of the grain will be ground than in 1932, and that the rations will be more carefully balanced.

The large number of milk cows on farms, the tendencies toward milking more beef cows and toward earlier weaning, and the ample supply of labor all favor a heavy increase in the output of dairy products if prices are materially increased with no control of production. On the other hand in adjustment to recent prices, farmers were feeding much less grain per cow on October 1 than would ordinarily be fed at that season with pastures as poor as they were. If this light feeding continues after the close of the pasture season it will mean a further decrease in the production per cow as compared with the same months in previous years.

SUPPLIES OF MANUFACTURED DAIRY PRODUCTS

Converted to a milk-equivalent basis, the production of the most important manufactured dairy products during the first 9 months of 1933 is estimated to have been about 4 percent larger than during the same months in 1932. The production of creamery butter was approximately 3 percent greater, cheese 7 per-

cent, and evaporated milk 14 percent, but condensed milk was 17 percent less. Information from trade sources indicates that the commercial production of ice cream which has been on the decline since 1929 continued this trend the early part of 1933. The decrease in the production of ice cream and condensed milk, however, was not sufficient to offset the liberal increase in the production of butter, cheese, and evaporated milk.

The manufacture of creamery butter the first few months of 1933 lagged behind the early part of 1932, but during June, July, August, and September very substantial gains over the output of the same months in the preceding year were recorded. These increases were particularly heavy throughout the Middle West especially in such important butter-producing States as Minnesota and Iowa, as well as in a number of areas where most of the milk produced is consumed in its fluid form. Several causes may be given for this large increase, such as the relatively high prices paid for butterfat since early summer causing producers in the general farming areas who were especially in need of ready cash to use less milk at home, make less farm butter, and to sell every pound of butterfat available. In the fluid-milk-producing sections, the milk supplies of late summer were considerably in excess of market requirements, and in New York State particularly, most of the surplus was used in making creamery butter. In some sections, too, crops damaged too much by the drought to produce marketable grain were used for pasture, and tended to overcome some of the effects of the short grass pastures.

With the exception of April, cheese production was above that of 1932 throughout the entire 9-month period. As in butter, very substantial increases over a year earlier were reported for June, July, August, and September, with by far the major proportion of the increases being accounted for in Wisconsin. Cheese production in this latter State was larger in every month except February. In 1932 prices paid in Wisconsin were slightly higher for milk used for making butter than for cheese, and considerable milk normally going to cheese factories was diverted to creameries. This year the price relation was mostly reversed, and milk producers last year delivering to creameries were once more delivering to cheese factories. This resulted in a good-sized increase in the production of cheese in that State, but caused a decrease in butter production.

The production of evaporated milk so far for 1933 has been consistently larger month by month than in 1932. On the other hand the production of condensed milk for each month has been smaller than a year ago.

The production of margarine during the period January to August, inclusive, this year was 152,391,000 pounds, an increase of 29,000,000 pounds, or 23 percent above production during the corresponding period of 1932, but a decrease of 20,500,000 pounds, or 12 percent, under the 5-year average (1928-32) production during these same months.

The storage situation with respect to dairy products has become of increasing importance during 1933. Early in the year stocks of butter and cheese in cold storage and condensed and evaporated milk in the hands of manufacturers were relatively low, being 16 percent less on January 1, in terms of milk equivalents, than a year earlier. There was the usual seasonal reduction up to May 1 of butter, cheese, and condensed milk, and an exceptionally large reduction during this period of evaporated milk. Stocks of the latter reached an all-time low record on May 1, this due to the fact that during the first half of 1933 an unusually large volume of evaporated milk moved into the hands of wholesale grocers and other distributors, as was shown by June 30 inventories. The new storing season opened with stocks of butter and cheese also less than average, but there was a heavy early movement into storage, and by July 1 stocks of butter amounting to 106,378,000 pounds represented not only an excess over a year earlier, amounting to 22,000,000 pounds, but also a surplus over the July 1 5-year average of approximately 18,000,000 pounds. American cheese stocks on the same date totaling 67,456,000 pounds were 13,500,000 pounds heavier than on July 1, 1932, and 4,500,000 pounds above the July 1 5-year average. Heavy into-storage movements occurred during July and August, with the result that on September 1 there were larger quantities of butter and American cheese in cold storage than ever before recorded, butter stocks amounting to 175,476,000 pounds and American cheese to 94,394,000 pounds. Butter stocks on October 1 were 174,857,000 pounds, compared with 89,490,000 pounds a year earlier and an October 1 5-year average of 117,549,000 pounds. American cheese continued to increase during September and a new all-time high record was reached on October 1 when stocks totaled 99,369,000 pounds.

as compared with 68,555,000 pounds on October 1, 1932, and a 5-year average of 80,838,000 pounds. These October 1, 1933, figures include Government-owned stocks of butter and cheese purchased for relief purposes. Evaporated milk stocks of butter and cheese purchased for relief purposes. Evaporated milk beginning in July and since then the trade output of this product declined materially, causing increasing quantities to back up in manufacturers' hands, and on October 1 stocks of 208,000,000 pounds were 18 percent heavier than a year earlier. In terms of milk equivalent, stocks of butter, cheese, condensed and evaporated milk on October 1 were 61 percent heavier than on October 1, 1932. This increase is equal to about 2 percent of total annual milk production.

TRADE OUTPUT OF DAIRY PRODUCTS

During the first 9 months of 1933 the apparent consumption of creamery butter was 49,000,000 pounds, or 3.8 percent less than during the corresponding period of 1932; cheese decreased 15,000,000 pounds, or 3.7 percent; and condensed milk decreased 22,000,000 pounds, or 13.2 percent. The net decrease of all the above products combined on a milk equivalent basis was 2.7 percent, while production increased 4.2 percent during this period. During the first 8 months of 1933, the index of factory pay rolls averaged 6 percent less than in the same months of 1932, and consumer expenditures for butter were 4 percent less, while consumer expenditures for cheese were 8 percent less. In the case of evaporated milk, there was relatively little change in consumer expenditures, the increase in trade output being offset by lower prices. It is not possible to make similar estimates for fluid milk and cream, but reports from several of the leading fluid-milk markets indicate that market receipts during the first 8 months of 1933 were less than in 1932, while retail prices were also less, indicating that there was a further decline in consumer expenditures for milk. In the last few months, however, pay rolls have shown an increase over corresponding months in 1932. If this increase is maintained, it will increase the demand for dairy products.

FOREIGN MARKETS

Conditions affecting the marketing of butter in Europe during the last 2 years have been unfavorable particularly to European producers in surplus-producing countries. A marked check in the volume of exportation has been apparent in 1932 and to date, reflecting some check, although less marked, in European production. At the same time production and consumption of margarine in Europe have fallen off considerably. European butter-exporting countries provided a combined export in 1932 that was smaller than in 1931 by about 14 percent while Southern Hemisphere exports were 10 percent larger.

Foreign market prices of dairy products, especially butter, have been affected recently and must continue indefinitely to be affected by the varied forms of trade restrictions so generally in effect, as well as by actual production trends. The net effect of these restrictions is to narrow the market for world supplies and to concentrate them abnormally upon the relatively free markets, notably in Great Britain. The relatively low prices prevailing in important foreign butter markets have certainly been depressed by trade conditions at least as significantly as by the increase in total foreign supplies which, outside of Australia and New Zealand, have already been notably checked.

The net United States importation of dairy products in the year ended June 30, 1933, amounting to the equivalent of 441,000,000 pounds of milk, exceeded by about 20 percent the net exportation of 370,000,000 pounds in 1931-32. Both imports and exports continued to fall off, but the greater decline was in exports. Some decline in imports of cheese and further marked falling off in our exports of concentrated milk have been chiefly responsible for the decline in the total volume of our foreign trade in dairy products. The small net importation of butter in the previous fiscal year gave way in 1932-33 to a very slight net exportation. The total exports of 1,386,000 pounds of butter were widely scattered to some 50 different countries. Whenever in recent years our butter exports have exceeded 5,000,000 or 6,000,000 pounds, the excess over this volume has gone to Europe. The New York price of 92-score butter on October 26 was the same as the London prices on Danish and 4 cents above finest New Zealand at prevailing rates of exchange.

Any rise in domestic butter prices resulting from a decline in the value of the dollar in relation to foreign currencies is not in itself to be expected to attract imports. On the contrary, since a given domestic price would thereby equal less money in terms of foreign currency, the tendency would be to handicap foreign exporters seeking an outlet in the United States. The effect upon the tariff rate, however, is to lower the specific rate in terms of foreign currencies and thereby make the tariff protection less effective. Aside from strictly monetary influences, conditions likely to continue to affect important outside markets indicate somewhat less pressure of foreign supplies on United States markets during the next winter season.

PRICES

After 3 years of declining prices, farm prices of dairy products reached a low in March 1933 of 59 percent of the 1910-14 average. At that time the farm price of butterfat was 15.1 cents per pound and the farm price of milk sold at wholesale \$1.10 per 100 pounds. With the suspension of gold payments in April and the rise in the general price level and the improvement in business, prices of dairy products increased. From March to September the farm price of butterfat increased 29 percent and the farm price of milk 34 percent. In some fluid-milk markets milk-control boards have raised prices.

The rise in the general level of prices in 1933 tended to correct some of the maladjustments in price relationships brought about by the general decline in prices during the period 1930-32. During the period of deflation prices of dairy products did not decline so rapidly as the prices of many other farm products. During the 3 years, 1930-32, prices of butterfat were relatively high as compared with feed grains. In 1933, however, prices of grains increased more rapidly than prices of butterfat. In the period July to September 1933 a pound of butterfat was equivalent to the price of 22 pounds of feed grains at farm prices, compared with 33 pounds during the same period of 1932, 30 pounds for the 5 years 1925-29, and 22 pounds in the period 1910-14. This change in the relationship between butterfat and grain prices in the last 6 months has been one of the most important developments in the dairy-price situation. The present relationship between grain and butterfat prices, if continued for a relatively long period, will tend to curtail production.

During 1933 prices of butterfat have increased more than prices of live-stock, so that even though butterfat prices are low in relation to grain, they are relatively high as compared with veal, beef cattle, and hogs.

From 1929 to 1932 the farm price of dairy products declined 50 percent, while the retail price of dairy products declined only one third. Prices paid producers for dairy products were relatively low as compared with retail prices. With the rise in prices in 1933 this maladjustment has been corrected to some extent. From March to August retail prices of dairy products rose 9 percent, while prices paid producers for dairy products increased 22 percent.

The large current production of dairy products and large commercial stocks on hand are having a depressing influence on prices. This situation, combined with the short crops of feed grains, indicates the probability of relatively low prices of butterfat compared with feed grains during the coming winter. The longer-time outlook for a rise in the general price level and improvement in business indicates improvement in dairy prices. However, with a rise in the general price level it is probable that prices of dairy products as a group will not rise so rapidly as prices of other farm products. The marketing agreements developed under the Agricultural Adjustment Act and milk-control boards in several States probably provide the machinery whereby adjustments of fluid-milk prices may be made more quickly than ordinarily would occur.

Under the Agricultural Adjustment Administration activity directed toward the raising of prices to producers for milk and its products has been through marketing agreements. Announcement has recently been made of the formation of the Dairy Marketing Corporation, which is an industry-sponsored organization set up as a clearing house to handle surplus dairy products in cooperation with the Secretary of Agriculture. Butter secured by the corporation will be purchased by the Secretary of Agriculture, and will in turn be distributed to needy unemployed through Federal relief agencies. Information is not yet available regarding the quantities to be purchased nor the prices to be paid. Agreements covering the marketing of fluid milk in practically all of the major milk sheds have either been approved or are in process of being

prepared. Marketing agreements for evaporated milk and dried skim milk are in effect, and agreements are being developed for butter, cheese, and ice cream.

The price policy in fluid-milk areas is that of stabilizing prices for milk for fluid use at levels which, while above freely competitive prices, are not expected to result in increases in total production within such fluid-milk areas. Prices for quantities of milk above those used for fluid purposes, including an allowance for daily and seasonal variation, are generally competitive prices.

The agreements covering the marketing of fluid milk in the Northeastern States generally set up production areas within which individual dairymen are allotted (1) specified quantities of milk which may be sold for fluid purposes, at specified prices, and (2) specified quantities of milk which may be sold for manufacture into fluid cream at a lower price. Additional milk sold is at a third specified price still lower than either of the first two, and is milk used for the manufacture of such products as butter, cheese, evaporated milk, and ice cream.

Prices to producers for milk used for consumption as milk, in the agreements thus far presented, have generally been at levels little above prevailing prices, though to the extent that these specified prices are minimum prices, most such prices will actually represent increases over previous prices. Prices to producers for milk used for consumption as cream, for the most part are based on butter quotations, with a differential for quality. Prices to producers for milk used for manufactured dairy products tend to be on a butterfat basis and are at levels about equal to those paid producers in the surplus butterfat-producing areas.

In the Middle Western States the agreements are of the same general nature, but provide in most cases for narrower differentials between the prices of milk for the various uses. All prices are based more directly on values established by prices of butter and other manufactured products. In the far Western States, the agreements are more nearly on a basis similar to that in the Northeastern States.

Agreements regarding manufactured products are directed primarily at the elimination of destructive competition and other practices tending to disrupt price structures. Price results of these agreements will tend to be less apparent than of agreements for fluid milk.

A proclamation has been issued under the Agricultural Adjustment Act stating that rental or benefit payments are to be made with respect to milk and its products. A processing tax on the first domestic processing will therefore be in effect with respect to milk and its products from the beginning of the next marketing year, which period has not yet been determined.

The Agricultural Adjustment Administration has announced that a part of the funds to be derived from a processing tax are to be used for the purchase of surplus dairy products, a part or all of such purchased products to be used for relief purposes or in channels of trade that are not competitive. The removal program apparently involves the purchase of certain additional quantities of dairy products by the Federal Relief Corporation.

In connection with the foregoing, public hearings have been held on the rate of the tax to be levied on milk and its products and on competing products. These hearings were called because it is believed that a processing tax on milk and its products based on the difference between the current average farm prices paid for them and the fair exchange or parity value might retard domestic consumption, and result in the accumulation of surplus stocks, or in the depression of the farm price of the commodity. The tax rate on milk and its products and on competing products could not, therefore, be legally determined until after a public hearing.

POULTRY AND EGGS

The number of hens and pullets of laying age on farms October 1, 1933, was about 1 percent smaller than in 1932, and a production of eggs this fall and winter somewhat smaller than last season appears probable, because of late maturity of pullets and less abundant supplies of feed.

It is too early to anticipate the production of eggs in the spring of 1934 with any assurance, but with the total numbers of potential layers, including pullets not yet of laying age, about 1 percent greater than last year, no very material change in the spring production of 1934 from that of 1933 appears probable,

since the rate of layings during the peak months of production varies little from year to year.

The number of chickens that will be hatched next spring will depend mainly upon the prices received for poultry products, upon their relation to feed costs during the winter and spring, and upon the outlook at hatching time. Uncertainties are so many this fall that poultrymen cannot decide definitely now on their spring-hatching program.

Improvement in prices of chickens above the normal seasonal trends during the fall and winter of 1933-34 appears improbable because of heavy stocks of chickens, and a crop of turkeys almost as large as last year. Assuming that decreases in slaughter of hogs and sheep will be balanced by increased slaughter of cattle, any competition from the supply of these meats will probably be about as great as last winter. The anticipated improved demand for poultry and eggs as well as for meats that would result from further employment and improved buying power of consumers is a helpful factor in the poultry-marketing situation. The net effect of these various influences, and of future developments in the Government marketing and relief policies affecting poultry, cannot be anticipated at this time.

Although the number of chickens hatched in 1933 was larger than in 1932 very heavy marketings reduced the number of all chickens in farm flocks so that on October 1 it was less than 1 percent above numbers on that date in 1932. Although the heavy marketings resulted in much larger stocks of poultry in cold storage than last year and slightly larger than the 5-year average for October, farm marketings of chickens during the remainder of the fall and winter appear likely to be about the same as those of last year.

The very favorable relation during the fall and winter of 1932-33 of prices of eggs and chickens to prices of feed, compared with their pre-war relation, led to increased hatchings this year. The decided spring rise in feed prices, with egg and chicken prices at their lowest levels in more than a generation, brought about an unfavorable relationship between prices of poultry products and prices of feed and was followed by heavy marketings of hens and broilers and smaller production of eggs. The more-than-seasonal rise in egg prices during the summer, with some decline in feed prices after July, had brought farm egg prices by October 15 back to slightly better than their post-war and distinctly above pre-war relation to feed prices. Although chicken prices continued their seasonal decline their relation to feed prices on October 15 was also above the pre-war relation, but considerably below their average relation to feed prices for the post-war period. If this improvement in the relationship of egg and chicken prices to feed prices should be maintained or improved it will assist to maintain the production of eggs this winter.

NUMBER OF LAYERS, FALL OF 1933

The total number of hens and pullets of all ages on hand in farm flocks on October 1 was only about 1 percent greater in 1933 than in 1932. In the North Central States, which lead in poultry production, the increase was a little over 1 percent; in the far Western States the increase was about 9 percent. The South Atlantic States showed a 6-percent decrease. Changes elsewhere were fractional.

The number of mature hens on hand was about 0.6 percent smaller than in 1932. The number of pullets hatched in 1933 that had reached laying age on October 1 was about 2 percent smaller than the number of such pullets a year earlier. The number of pullets not yet of laying age was about 5 percent greater and the number of all pullets about 2.4 percent greater than last year.

Although prices of poultry products have been low most of the time during the last 2 years, prices of feed for poultry have been relatively much lower. Under these conditions, producers in the Central and Eastern States who were favorably located with reference to feed supplies and markets, enjoyed a greater advantage than western producers less favorably located. West-coast producers, having adjusted themselves so far as possible to the new conditions, by forced liquidation in some cases and severe loss to former operators, would now be in position to benefit by any material rise in egg prices, inasmuch as fixed charges would absorb less of the rising prices. The number of layers reported for that section in October shows a material increase this year. The relatively very favorable returns to poultrymen preceding the hatching season of 1933 led to an increase of about 6 percent in the number of chicks hatched in 1933

over numbers in 1932. Before the hatching season was over the sharp rise in feed prices had reversed the relation between the prices of feed and poultry products, making it unfavorable to poultrymen. This led to a very heavy marketing of both hens and young chickens in June and July, continuing in heavier volume than last year up to October. Although many more young chickens were disposed of during the summer of 1933 than in 1932, they were evidently sold at an earlier age and at lighter weights. The receipts of young stock at central packing plants in terms of pounds were heavier in June and July, but they were from 10 to 30 percent less through August and up to mid-October of 1933 than in 1932. As a result of the large marketings, the material increase in numbers of laying stock that should normally have followed the increased hatchings amounted to only 1 percent on October 1 and the supply of young chickens other than layers was about 1 percent less.

The data given on number of poultry and production of poultry products is based almost wholly upon the indication derived from the monthly returns representing farm flocks, which group accounts, however, for over 80 percent of the eggs produced. To what extent they might be modified by full information concerning the situation of commercial producers cannot be stated. In a general way, the situation would affect both types of producers similarly, although commercial producers would feel the increases in prices of feedstuffs more acutely. However, general information indicates that birds in commercial flocks increased this year in the North Atlantic and far Western States more rapidly than those in farm flocks. No adequate information exists concerning the assumed increase during the last 2 or 3 years in the number of small flocks in the towns and on tenant farms. Such flocks are kept mainly for home supplies. Any decrease in demand on usual sources of supply resulting from them would be much less than their production, because many of their owners would buy relatively few poultry products.

COMMERCIAL BABY-CHICK PRODUCTION

The production of baby chicks by commercial hatcheries during the hatchery season of 1933 was about 8 percent greater than the production during the corresponding period of 1932. Early hatchings were smaller but during the latter part of the hatching season they were materially larger. The large number of the baby chicks hatched toward the close of the hatching season was evidently the result of a greater interest in late broilers.

The output of baby chicks by commercial hatcheries in the Mountain and Pacific Coast States this year was approximately 12 percent larger than in 1932. To some extent this increase reflects a slight expansion in laying flocks in those States, but it is chiefly to replace old hens that have been carried in flocks from previous years. Hatchings throughout the grain belt of the Middle West were considerably above those of last year. Increases were reported for the commercial egg-producing areas of the New England States and the Middle Atlantic States, but they were not quite so large as for the egg-producing sections of the Middle West.

FEED SUPPLY

Allowing for wheat fed and to be fed, the present supply of feed grain is about 20 percent less per animal unit than the supply last year, 8 percent less than the average of the previous 5 years, and 3 percent less than in the drought year, 1930. Grain supplies are relatively shortest in the Central States and are fairly abundant in most of the South. The supply of corn, the largest component of the poultry ration, is estimated to be about 15 percent less than in 1932 but 10 percent greater than in the drought year, 1930. Wheat supplies are smaller than in any recent year and probably much less wheat will be fed this year.

MARKET POULTRY RECEIPTS

Receipts of dressed poultry at the four principal markets, for the first 9 months of 1933, were about 14 percent larger than the receipts for the same months in 1932. Part of this increase was due to heavy shipments of turkeys in January, especially from the turkey-growing sections of the Central States. Substantial increases in the receipts of other classes of poultry from these regions occurred during the late spring and early summer; this was particu-

larly true of fowl and broilers in June and July. Receipts of dressed poultry from the Pacific Coast and Mountain States were very light. Receipts of live poultry at New York and Chicago were about 7 percent smaller than last year, offsetting to a partial extent the increase in the receipts of dressed stock. Receipts of chickens during the fall and winter are expected to be about equal to last season but receipts of turkeys somewhat less.

STOCKS OF POULTRY IN COLD STORAGE

Total stocks of dressed poultry in storage began to increase as of July 1, instead of following a normal seasonal decline until about September 1. Many midsummer shipments of poultry were held on shippers' instructions at prices too high to move them into immediate consumption, and considerable stock of this nature was sent eventually to storage in the hope that these prices would be obtained at a later period. So far, however, prices have either held steady or on some classes worked seasonally lower.

Although speculative buying this fall has been relatively conservative, poultry in storage has tended to accumulate somewhat more rapidly than a year ago, principally to the account of receivers and shippers. On October 1 a total of 50,156,000 pounds of poultry was held in cold storage, an increase of 37 percent over the stocks in storage on October 1, 1932, and 2 percent over the 5-year average for that date. Increases amounted to about 50 percent for broilers and 175 percent for fowl. The heavy stocks of broilers and the substantial increase in the late commercial hatches of baby chicks for early fall-broiler production will discourage production of "hothouse" broilers for the early winter markets.

Normally the peak for stocks of dressed poultry in storage is reached in either January or February. It is too early now to predict the quantity that will be in storage at the peak of the 1933-34 marketing season, but it appears reasonably certain that the stocks will be larger than the peak stock a year earlier, and probably above the preceding 5-year average.

CONSUMPTION OF POULTRY

The urban consumption of dressed poultry during the first 9 months of 1933 was about 1.8 percent larger than the consumption during the same period last year as indicated by the trade output reported for the four principal markets. Consumption apparently was very heavy in January, when an increase of 19.2 percent over January a year ago was registered, mainly because of a large movement of turkeys into consumption.

EGG PRODUCTION 1933

Although the year 1933 began with 4 percent more hens in laying flocks than was true the previous year, the hens were less productive this year than during 1931 and 1932 when cheap feed and favorable winter seasons resulted in the largest production per hen since the record was begun in 1925. The sharp decrease in the number of eggs laid per hen in September and October was most pronounced in the Central States.

The production of eggs per flock this year to October 1 was relatively greater than the rate of layings per hen because of a larger number of layers during the first half of the year. Aggregate layings per flock indicated by the monthly reports from January to October, which tend to reflect total production, were about 3 percent less than in 1932, 7 percent less than in 1931, and almost 5 percent below the average for the 5 years 1927-31. After June the decrease in the production of eggs was more pronounced, running not only below the records of 1932 and 1931 but also decidedly below the 5-year average. A relatively low rate of laying and a smaller production of eggs than last year seem in prospect this fall and early winter, affected up or down to some extent by the character of the weather during that period. If the more favorable relation of egg prices to feed prices seen in September and October continues, this with the larger proportion of pullets in the flocks will tend to increase the relative rate of laying and bring production of eggs during the late winter up toward the level of last winter.

MARKET RECEIPTS OF EGGS

Receipts of eggs at the principal terminal markets through September this year were about 10 percent larger than the receipts for the same period a year

ago. Receipts were heavy during the first 7 months. Following the heavy marketing of hens in June and July, however, production began to drop sharply under that of the preceding year, and receipts of eggs at the four markets for August and September were 8 percent and 15 percent, respectively, smaller than those of the same months in 1932. Receipts also ran lighter than a year earlier during the early part of October, and present indications point to a continuation of the trend at least until the later hatched pullet crop of 1933 comes fully into laying. Particularly important in the geographical distribution of receipts according to origin is the fact that receipts this year were much heavier from the East and the Middle West, but very much lighter from the Mountain and Pacific Coast States. This is the third successive year in which egg receipts at the principal markets from the commercial producing areas of the far West have shown a decrease under those of the preceding year. A larger production of commercially hatched baby chicks in both the Mountain and Pacific Coast States this year, however, indicate that laying flocks in those sections may be slightly expanded this fall; if so, shipments from the far West in 1934 may surpass those of 1933.

The increase over last year in receipts of eggs at the principal terminal markets this year, notwithstanding a smaller farm production, is consistent with the fact that prices of eggs compared with feed prices during the first half of this year were relatively much better than last year when unsatisfactory prices at the terminal markets led to heavy farm consumption and to increased local disposal of eggs.

STOCKS OF EGGS IN COLD STORAGE

In view of the fact that eggs stored in 1932 were sold at prices considerably above the prices at which stored, it was generally expected that the quantity stored in 1933 would be considerably above the relatively small quantity stored in the preceding year. Eggs began to move into storage in late February, and as the season advanced stocks piled up much more rapidly than they did a year earlier. On August 1 shell eggs in storage amounted to 9,507,000 cases, an increase of about 48 percent over stocks of the same date a year earlier, but only about 2 percent above the 5-year average. Stocks of frozen eggs on August 1 were likewise larger, amounting to 107,660,000 pounds, about 8 percent heavier than on August 1, 1932, and 7 percent larger than the 5-year average. The combined stocks of shell eggs and frozen eggs in storage on August 1, this year, equaled 12,583,000 cases, an increase of about 35 percent over August 1, 1932, but only about 3 percent over the 5-year average. Following August 1, stocks began to move out of storage and into consumption. By October 1, the reduction had amounted to about 22 percent from the August 1 stocks compared to a reduction of about 24 percent to the same date last year. Although the supply of eggs in storage this year at its peak was much larger than for last year, the subsequent rate of reduction has been only slightly below that of a year ago. The sharp drop in egg production during late summer and early fall with a resulting greater-than-usual decline in the seasonal volume of fresh eggs received at the principal markets has made possible this relatively rapid rate of reduction from the season's peak.

Although storage stocks are large, if fresh egg production during the next few months does not increase more rapidly than now seems probable, it is more than possible that the remaining stocks may be moved out of storage at prices that will cover original buying prices and carrying costs. Eggs are not being held with a great deal of confidence, however, as owners of storage eggs in general appear to be willing to accept almost any offer that will not mean impairment of original investment. On the other hand, some holders feel that even the present heavy stocks will be needed before the season is over, and are holding back in the expectation that prices will be high enough later to permit them to make a profit. In either case, it does not seem likely that the present stocks will be entirely moved out of storage before late January or early February. Since it appears that many holders of storage eggs this year will not be able to show any net profits on this year's storage deal, the storage demand in the spring of 1934 will probably not be so strong as in 1933, and the quantity of eggs stored will probably be smaller.

CONSUMPTION OF EGGS

The urban consumption of eggs during the first 9 months of 1933 was apparently smaller than during the same period a year earlier, as evidenced by the

trade output in the four leading markets which for these months showed a decrease of 11.8 percent. During the closing months of 1932 and the opening months of 1933 consumption was seriously checked by the relatively small supplies and the high prices. When supplies became more plentiful along in late February and early March, wholesale prices dropped sharply. Before sufficient time had elapsed for the lagging decrease in retail prices to become fully effective in increasing consumption, wholesale prices started upward once more under a strong storage demand. This had a tendency to check consumption again, and to hold it to a lower level than in the preceding year during the months of April, May, and June, as stocks piled up rapidly in storage. Eventually, however, the large stocks lessened the demand for eggs for storage. As prices fell in late summer, consumption began to pick up, and in July it exceeded by a slight margin the consumption of July 1932. Consumption was somewhat smaller in August but was larger again in September.

PRICES OF POULTRY AND EGGS

The farm price of chickens in March 1933 was 9.1 cents per pound, the lowest price on record since 1910. As usual, prices recovered slightly in midsummer and the July price was 10.4 cents per pound. By October the regular seasonal decline in prices was evident and the farm price was 9.3 cents per pound. Post-war chicken prices have remained at a higher level than have those of most other agricultural commodities. In 1933, part of this advantage to poultry producers disappeared, for chicken prices did not respond to advancing price levels to the same extent as did most other commodities. The index of chicken prices in October, compared with its October pre-war average, was approximately 79 as compared to 67 for grains, 62 for meat animals, 77 for dairy products, and 87 for eggs.

Heavy early marketings of poultry, and the unusual seasonal accumulation of stocks of frozen poultry, operated to depress poultry prices both on the farm and at New York City. Although the general level of prices rose rapidly after March in 1933, poultry prices during the 10 months from January to October showed no more than an average seasonal change.

The wholesale price of fresh dressed poultry in New York City was lower during the first 9 months of 1933 than during the same months of 1932, a condition which was about equally true of farm prices and prices at retail. Prices for fowl, however, showed a greater decline based on prices for last year than did those of the young poultry classes, and even at the lower prices, storage stocks of fowl accumulated rapidly during June and July because of unusually heavy farm marketings.

The farm price of eggs for the spring months of April, May, and June of 1933 averaged 10.7 cents per dozen as compared with 10.4 cents for the same months in 1932. The slightly higher prices in the spring of 1933 were largely to be explained on the basis of a rising level of prices and increased storage demand, since production was greater than during the same months in 1932. The rise in farm egg prices between spring and fall in 1933 was greater than would be expected on the basis of the average of such increases during the last 10 years. This rise in prices was largely due to a slowly rising price level and to sharply curtailed production after June. Prices have not risen as rapidly as in 1932, when storage stocks were much smaller.

During the early spring of 1933, feed prices were low as compared with prices for eggs, and egg production was stimulated. Between May and July, however, grain prices advanced over 50 percent, while egg prices advanced only about 10 percent. This rise in feed prices reduced the advantage in poultry and egg production with the result that fowl and broilers were sent to market in large volume and egg production was materially lowered. After July egg prices continued to rise more rapidly than indicated by an average seasonal trend, while feed prices gradually declined with the result that by September feed and egg prices were more normally adjusted to each other, and the early fall movement of poultry to market was at a more nearly normal rate.

TURKEYS

Such information as is available at this time indicates that the turkey crop of 1933 is plentiful but somewhat smaller than the record crop of 1932. According to reports from crop correspondents, the number of ordinary farm

flocks has increased considerably, although the average size per flock is smaller. The number of all turkeys in farm flocks is apparently about the same as in 1932. Data are not available for large-flock producers, but general information indicates that flocks of this type are fewer and smaller than last year. There appears to be a decided increase in numbers of turkeys raised in the Plain States from Montana and the Dakotas to Nebraska, but some decrease in the South and in most of the far West, and possibly a small decrease in the Northeast. Poor fertility, poor hatches, and unfavorable weather in some sections during the early growing season, together with the very low prices received for the 1932 crop and uncertainty concerning prices this season, are the factors mainly responsible for the decrease.

The conditions of the turkeys raised this year varies in different sections, but in general it is possible that they are not quite so well matured or finished because of high feed prices and lack of grain in some sections. The lateness of Thanksgiving this year may tend partially to offset this condition. The somewhat smaller crop, the relatively low stocks of turkeys still in storage, small imports, and present increased employment, will prove sustaining influences in the market. On the other hand, stocks of other poultry on October 1, were much heavier than last year. Prices of chickens were about 2 cents lower per pound on September 15 and turkey prices at the beginning of the season were 1 or 2 cents lower than last year. It seems probable that average prices received by turkey producers this year will not differ greatly from those of last year except as affected by average quality and weight of the crop.

Turkey production in 1932 reached record proportions, with an estimated crop of more than 19,000,000 birds. This large crop, coupled with reduced consumer purchasing power, resulted in farm prices for turkeys which averaged 6.6 cents per pound lower during the marketing season of 1932-33 than for the same months of 1931-32 and which were the lowest for the last 20 years. The effect of these lower prices on production in 1933 was partially offset by lower feed prices which prevailed well into the 1933 hatching season and which were probably largely responsible for the fact that the 1933 hatch was apparently quite large in spite of the low prices received for the 1932 crop.

Additions to the storage stocks of turkeys last fall and winter were very large and the peak holdings on February 1, 1933, amounted to 16,700,000 pounds, the largest holdings on record with the exception of holdings on February 1 and March 1, 1925. The February 1, 1933, storage stocks were about 2,500,000 pounds greater than in 1932 and were 5,276,000 pounds in excess of the 5-year average. Movement out of storage was unusually heavy, however, particularly during February, March, and April. As a result, storage stocks were gradually reduced until on October 1, 1933, they amounted to 2,767,000 pounds, as compared with 2,591,000 pounds on October 1, 1932, and the 5-year average for that month of 4,188,000 pounds. The free movement of stocks out of storage caused the market prices of frozen turkeys to improve considerably, quotations advancing about 4.6 cents per pound from January to August, and prices of turkeys out of cold-storage warehouses at New York City during the summer and fall of 1933 were very similar to those of 1932, but for hens the prices were slightly lower. Prices for fresh-dressed turkeys in August were slightly below those in 1932, and live-turkey prices were also somewhat lower. The decrease in prices may be due in part to the heavier early movement of turkeys to market this year.

Import of turkeys were sharply lower in 1932 than in previous years. Imports in 1933 have been even less, to date, and will have practically no influence on prices during the coming holiday season.

The lowered margin of profit received from turkey raising last season has probably checked somewhat the tendency toward expansion in commercial turkey raising which has been in evidence during the last few years. The opportunity that turkey raising affords for a cash crop has caused less curtailment in smaller flocks and in sections especially suited to turkey production.

The outlook for turkey raising next year cannot be gaged accurately at this time. The number of turkey hens carried over into 1934 as breeding stock and the size of the turkey crop raised in that year will depend upon prices received for this year's crop and probably also on feed prices. Should the turkey crop prove to be almost as heavy as in 1932, with prices about the same or lower, and with the higher feed costs extending into the hatching season of 1934, the number of turkeys raised for market in 1934 is likely to be reduced. If a small increase in prices should be received by producers as compared

with last year, the present volume of production may be well maintained next year, especially if feed prices should be lower, while a sizable price increase may be expected to increase production in 1934.

CLOVER SEED AND ALFALFA SEED

Production of red clover, alsike clover, and sweetclover seed in 1933 was much smaller than usual, and the fairly large production of alfalfa seed is offset by the smallest carry-over of this seed in recent years. Supplies of these seeds are below normal, and if the wheat- and corn-acreage-reduction program should result in an expansion of the acreage in hay and pasture, prices of these seeds are likely to advance considerably. Although current prices for clover and alfalfa seed are higher than last year at a corresponding time, they are much lower than for the 5-year period 1926-30.

Growers of red- and alsike-clover seed might well plan to harvest a larger acreage for seed in 1934 than they did this year. Had not yields approached, or even exceeded in some districts, those of last year, the production would have shown a greater decrease from that of last year because of the marked reduction in the acreage left for seed. Supplies of sweetclover seed are the smallest since this crop became popular, and a small increase in acreage might well be recommended if it were not for the fact that a burdensome surplus might result, because large yields over extensive areas are easily obtained whenever weather conditions are favorable. Alfalfa-seed acreage should be maintained or increased slightly, except in the Southwestern States, because weather conditions as favorable for the setting of this seed as they were this year may not occur during the next year or two.

The production of red-clover seed this year is estimated at 50,000,000 pounds, compared with approximately 75,000,000 pounds in 1932, 47,000,000 in 1931, and 68,600,000 pounds, the 5-year (1926-30) average. The decrease from the fairly large crop of last year was due to reductions both in acreage and yield per acre. Hot dry weather in June and July was mainly responsible for these reductions. In no State were conditions particularly favorable for the production of red-clover seed.

There have been no imports of red-clover seed for 1½ years, whereas during the 10-year period, 1921-30, they averaged 10,332,600 pounds, or one sixth to one seventh of the annual planting requirements. Supplies of this seed in Europe are smaller than average, and it is not likely that much, if any, of it will be exported to this country during the next 10 months unless a big advance in prices occurs in this country. Exports of red-clover seed from the United States during September were the largest on record, 474,701 pounds having been exported to the United Kingdom.

Although sales of this seed last spring were slightly smaller than in 1932, the carry-over is smaller than usual. Current prices to growers average about \$9.75 per 100 pounds, basis clean seed, compared with about \$8 last year, \$10.45 in 1931, and \$23.45, the 5-year (1926-30) average about October 15.

Alsike-clover-seed production this year may not have exceeded 20,000,000 pounds, compared with about 26,300,000 pounds in 1932, 21,300,000 in 1931, and 25,800,000 pounds, the 5-year average. The factors that accounted for the decrease in the red-clover-seed production were likewise responsible for the small crop of alsike-clover seed.

None of this seed has been imported in more than 2½ years. Five to ten years ago more than 5,000,000 pounds, or about one fifth of this country's requirements, was imported annually, almost entirely from Canada. The production there this year is reported to be smaller than average.

The carry-over of alsike-clover seed was smaller than in recent years notwithstanding that a fair crop was produced in 1932, and sales during the spring were below average. The absence of imports since March 1931 and the fact that exports were above average more than offset the other factors affecting supplies. Current prices to growers average \$11.25, compared with \$8 last year, \$9.50 in 1931, and \$21.55, the 5-year average, about October 15.

Sweetclover-seed production was about one fifth smaller than last year, when the smallest crop in about 10 years was produced. The 1933 crop is estimated at 28,000,000 pounds, compared with 34,400,000 in 1932, 50,300,000 in 1931, and 64,000,000 pounds, the 5-year (1926-30) average. Drought and grasshoppers were chiefly responsible for the reduction in acreage this year as well as last year.

No sweetclover seed has been imported in more than 3½ years. Exports, likewise, have been practically negligible. Sales of this seed last spring were about 10 percent smaller than those in 1932. The carry-over is indicated to be much smaller than in recent years because of the unusually small production in 1932. Current prices of sweetclover seed to growers average about \$2.80, compared with \$2.15 last year, \$3.30 in 1931, and \$5.90, the 5-year average about October 15.

Because of the very factors (drought and hot weather) that curtailed red- and alsike-clover-seed production, the production of alfalfa seed was increased. A larger crop than last year was indicated for almost every State that produces this seed. The 1933 production is estimated at 55,000,000 to 60,000,000 pounds, compared with the small crop of 32,300,000 pounds of last year, 50,300,000 in 1931, and 56,700,000 pounds, the 5-year average.

Imports of alfalfa seed for the last 5 years have been of little consequence, averaging 422,140 pounds during that period. On the other hand, exports during the calendar year 1932 were the largest on record. They amounted to 1,564,641 pounds, the bulk of this quantity having gone to France, a country that normally produces a surplus. A below-average production in Europe is again forecast this year.

Although spring sales of alfalfa seed were about 5 percent smaller than in 1932, the carry-over was much smaller than a year ago. This decrease was due mostly to the very small crop of 1932, but also to the larger exports. Current prices to growers for common alfalfa seed average about \$7.75 per 100 pounds, basis clean seed, compared with \$7.50 last year, \$8.50 in 1931, and \$16, the 5-year average about October 15. Grimm alfalfa prices this year range mostly from \$9 to \$12.

POTATOES

The total plantings of potatoes in 1934 are likely to be in the neighborhood of 3,300,000 acres, or 2 percent above the 1933 acreage. With this acreage, average growing conditions would probably result in a crop of about 360,000,000 bushels. Such a crop would return the growers a much smaller gross income than that received for the light 1933 crop but probably somewhat above the low incomes of 1931 and 1932.

The demand for potatoes is inelastic; that is, small crops during the last 25 years have consistently returned higher gross incomes to growers than have large crops. Poor growing conditions in 1933 resulted in the smallest crop since 1925 and gross returns to potato growers are expected to be almost three times as large as those received during the previous year, and the largest income in several years.

The consumption of potatoes has gradually been declining during the last 10 years. A total acreage of about 3,000,000 acres will ordinarily produce an ample supply for human consumption. Yields of potatoes during recent years have usually varied between 100 and 120 bushels to the acre and 3,000,000 acres could therefore be expected to produce between 300,000,000 and 360,000,000 bushels, and the average would be about 330,000,000 bushels. A crop of this size could usually be marketed at prices profitable to efficient potato growers in good locations. When more than 3,000,000 acres are planted, growers can expect lower prices unless yields should be lower than usual.

MARKET OUTLOOK FOR REST OF 1933 SEASON

The potato crop in 1933 is expected to be the fifth smallest during the last 25 years. The October 1 forecast was 307,000,000 bushels or 50,000,000 less than the 1932 crop, and compares with the small crops produced in 1925 and 1919 of about 298,000,000 bushels. The 1933 crop in the 30 late States was estimated at 250,000,000 bushels, which is much smaller than the 1926-30 average of 284,634,000 bushels and only slightly above the crop of 247,000,000 in 1925 and 241,000,000 in 1919. The geographical distribution of the crop is somewhat different this year than in 1925 and 1919, since the shortage this year is largely in the central States, although the crops in the eastern and western late States are also somewhat below average.

The late crop in the three eastern surplus States is estimated this year at 83,500,000 bushels, which is 8 percent smaller than the 1932 crop, but 9 percent greater than that produced in 1925 and 2 percent greater than the 1919 crop. In the 5 central surplus late States the 1933 crop is estimated at 70,138,000 bushels, which is 27 percent below that produced in these States in 1932, 12

percent below that of 1925, and 18 percent below that produced in 1919. The crop in the 10 western surplus late States is estimated at 67,227,000 bushels, which is 5 percent greater than that produced in 1932, 17 percent greater than that produced in 1925, and 56 percent greater than that of 1919. In the 12 other late States, the 1933 crop is estimated at 29,266,000 bushels, which is 31 percent below the 1932 crop, 11 percent below the 1925 crop, and 4 percent below that of 1919.

Shipments of potatoes from the late States started unusually early this season as a result of high market prices. The rail and boat movement to October 28, 1933, from the 30 late States totaled 45,400 cars compared with 30,800 cars moved to October 29, 1932. These heavier fall marketings, together with the smaller production in the late States, indicate that the supply of old potatoes for the late winter and spring markets will be short and conditions are favorable for a marked advance in market prices during the remainder of the 1933-34 late crop season.

During the 1919-20 and the 1925-26 seasons, the average potato prices for the New York and Chicago markets rose approximately 225 percent and 150 percent, respectively, from the low point in October to the season's high the following April. During 1919 the low point in the price trend was reached about the middle of October, while during 1925 it came during the first week of that month.

The prices of southern early potatoes during April, May, and early June of 1933 were extremely low, but in mid-June it became apparent that the intermediate crop was greatly reduced by heat and drought, and after the middle of June new-potato prices rose sharply to a peak in mid-July. The sharp advance in prices brought an increasing volume of shipments from late States. As a result, prices dropped steadily from the middle of July until the third week in October. Market prices for the week ended October 21 were about 60 percent below the July peak at Chicago and 40 percent below at New York. These declines, however, are not unusual in seasons when supply has been similar to that of this year. It is probable that the lowest point in potato prices this year has been reached.

PROBABLE PRODUCTION IN 1934

Following two seasons of successive reductions in southern commercial potato acreage, growers in the early and intermediate States reported about October 1 that they intended to increase their 1934 commercial acreage to 295,000 acres or about 19 percent over that harvested in 1933 and 7 percent over that of 1932. This is equivalent to 1.5 percent increase in the total potato acreage in the United States. The "intentions-to-plant reports" indicate a combined acreage increase of 36 percent in Florida and southern Texas, 18 percent in the group comprising the other early sections of Texas and the States of Alabama, California, Georgia, Louisiana, Mississippi, and South Carolina; a 17-percent increase in the second-early States of Arkansas, North Carolina, Oklahoma, and Tennessee, and a 16-percent increase in the intermediate States of Virginia, Kansas, Missouri, Maryland, Kentucky, New Jersey, and Nebraska. In most of these States the tendency is to return to an acreage closer to the average (1929-32—304,600 acres) planted prior to 1933.

Assuming that the acreage now planned is actually planted in 1934 and that average yields are obtained, the production of commercial early, second-early, and intermediate potatoes will total about 40,000,000 bushels compared with 30,100,000 bushels in 1933 and 32,400,000 in 1932. The increased production of potatoes in the early and second-early States indicated by the October 1, 1933, intentions-to-plant can probably be marketed at reasonably profitable prices since the spring carry-over of old potatoes will be unusually small. Many growers are likely to expand their acreage beyond the October 1 intentions if credit is available. Any great acreage expansion will make a less favorable outlook. Prices for the intermediate crop, however, may be a great deal lower, since prices in the intermediate States depend almost entirely on the production in those States.

During the 1931 and 1932 seasons of low prices, potato growers in the late commercial-potato areas suffered losses. The 1931-32 seasonal average cash returns to growers for U.S. No. 1 potatoes bulk per hundredweight, in 5 of the major late-producing States ranged from 32 cents in Maine and Michigan to 44 cents in Idaho. The 1932-33 seasonal average price ranged from 26 cents

in Idaho to 44 cents in western New York. The 1933 October preliminary prices in these States ranged from 57 cents per hundredweight in Idaho to 101 cents in Maine. Evidently these low prices in 1931 and 1932 seasons resulted in severe losses to many growers, particularly in areas distant from markets. This resulted in decided acreage reductions in Maine, Idaho, and Wisconsin. However, growers in producing sections fairly close to markets and whose distribution costs have been low or reduced have been able to maintain their acreages almost up to the peak of that planted in 1931 or 1932.

There are as yet no reports concerning the acreage for 1934 planned by the growers in the late-producing sections of the United States, but some idea of their probable change in acreage can be obtained from their previous reactions to market prices. After the high prices received for the 1919 crop, growers in the United States as a whole increased their planting of potatoes only 1,000 acres. The decrease in the 30 late States was 16,000 acres, which was offset by a slightly larger increase in the early and intermediate States. After the high prices in 1925-26, growers in the country as a whole decreased plantings 6,000 acres, and the decrease in the 30 late States was again 16,000 acres. In 1930, after the good prices obtained for the 1929 crop, the acreage planted in the 30 late States did not exceed that planted in 1929 but the early States increased 52,000 acres and the intermediate States 6,000 acres, which was equivalent to a 2-percent potato acreage increase for the United States as a whole. The acreage in the late States was held in check both in 1920 and in 1926 by the scarcity and high prices of seed.

The probable increase in the acreage in 1934 is difficult to estimate as early as November 1. Present indications are for an increase of 46,000 acres by the growers in the commercial early and intermediate States. If seed is available at prices which are not prohibitive, the late States will probably also increase acreage slightly. On the whole, an increase of about 60,000 acres, or 2 percent, seems a conservative estimate, particularly since acreage in the major States of Maine, Idaho, Nebraska, Minnesota, Colorado, and Wisconsin has been greatly reduced during the last 2 years. This increase would result in a total of 3,283,000 acres in 1934. Average growing conditions would result in yields of about 110 bushels to the acre and a crop of 360,000,000 bushels. With a crop of this size, prices of late potatoes in 1934 are likely to decline from the high levels of 1933, but if the late-crop acreage is not increased materially, the income received for late potatoes may be above the low levels of 1931 and 1932, particularly if consumer buying power should further increase.

SWEETPOTATOES

The improvement in prices of sweetpotatoes in 1933 is likely to encourage farmers to increase acreages in 1934. This is particularly true of growers in those areas in which sweetpotatoes are grown for sale or market. However, in the Eastern Shore of Virginia where sweetpotatoes are commonly grown on the same farm with Irish potatoes the acreage of the former may be reduced because of the increased plantings of the latter. In most parts of the South, acreage will probably be increased because of the increased returns this season.

Owing to the unusually low prices received for sweetpotatoes during the 1932 season and to the increased plantings of cotton in the spring of 1933, the acreage of sweetpotatoes was decreased 12 percent below that of 1932. The decreases were fairly uniform in the central and lower Atlantic Coast States, and in the Central and Western States, where they averaged about 7 percent below those of 1932. In the South Central States where the cotton acreage increases were the greatest and where sweetpotatoes are grown largely as a farm food crop, the decreases in acreage averaged 16 percent.

For the country as a whole, yields this year are expected to average slightly higher than those of last year and higher than in any year since 1929. This is particularly true for the lower Atlantic and South Central States. In the central Atlantic States (New Jersey, Delaware, Maryland, and Virginia) where most of the dry-type sweetpotatoes are grown, yields are expected to be better than in 1932, but below those of 1931.

Production of sweetpotatoes this season was forecast at 70,000,000 bushels, or about 8,500,000 less than the large 1932 crop, but about 7,500,000 more than the 1926-30 average. In the central Atlantic Coast States production is placed

at 7,700,000 compared with 6,900,000 last year; in the lower Atlantic States, 22,300,000 this year against 24,500,000 in 1932; in the South Central States, 36,400,000 bushels this season against 42,700,000 last year; and in the Central and Western States, 3,600,000 this year against 4,400,000 in 1932.

After 4 years of declining prices, sweetpotato growers this year are experiencing a reversal of the trend. Farm prices this season have been lifted by the influence of the shortage in late potatoes. On September 15, sweetpotato prices to growers averaged 76.2 cents per bushel, compared with 55.3 cents per bushel a year ago, 81.4 cents per bushel 2 years ago, and 128.7 cents in September 1930. Because of the small crop of late potatoes this season, sweetpotato growers should make an effort to cure their crop well. The indications now point to considerable improvement in the market demand for sweetpotatoes during the remainder of the present marketing season.

TRUCK CROPS FOR MARKET

The market outlook for commercial truck crops for fresh market shipment during the remainder of the present season and in 1934 appears to be somewhat more favorable for producers than the situation has been during the last 2 years. With somewhat smaller commercial supplies in 1933 and with some improvement in demand conditions, particularly during the latter half of the year, gross returns to growers of truck crops were larger in 1933 than in 1932. Although there was a reversal in the normally expanding acreage planted to truck crops in 1933, the higher prices received for the late crops are likely to encourage expansion of acreage again in 1934.

Supplies of late cabbage, onions, potatoes, and sweetpotatoes are considerably smaller this season and the carry-over of these crops is expected to offer less competition to early 1934 spring-grown vegetables. However, the marked tendency toward increased home and local gardening in and around towns and on farms, which has characterized the last two or three seasons, has been even more pronounced in 1933. Much of this increase in gardening primarily represents sustenance enterprises with the surplus products being home-canned for winter consumption, but these operations have had the effect of expanding the proportion of foodstuffs produced locally, and thus decreasing the outlet for supplies that would normally move in from distant producing areas. Although the cost of production had been lowered in all vegetable-producing areas from 1929 until midsummer of 1933, transportation costs remained relatively unchanged, except for that portion shipped by motor truck. As prices have declined to low levels these costs have taken an increasingly larger share of the returns on commodities shipped long distances. This reacts to the benefit of growers nearest the market and, under such circumstances, the shift toward local production of food supplies, both for home use and for local sale, may be expected to continue.

Prices of commercial truck crops for fresh-market shipment averaged about 10 percent higher during 1933 than during 1932. Most of the advance, however, came in the second half of the year, after it became known that production of many of the intermediate and late crops was reduced materially through smaller acreages and by drought and high temperatures. There was also some increase in consumer purchasing power in the latter half of the year as a result of improved business conditions. The advance in truck-crop prices this season marks a reversal of the sharp downward trend which has taken place since 1928. Prices of 17 important truck crops declined about 6 percent in 1929, 10 percent in 1930, 15 percent in 1931, and 17 percent in 1932, making a total decline of 40 percent.

Production of 17 important truck crops for fresh-market shipment declined about 10 percent in 1933, from the record production in 1932. This is the first time since 1928 that the steady expansion of production has been materially interrupted. Production of these truck crops in 1933 is estimated at 107 percent of the 1924-29 average, compared with 102 percent in 1928, 114 percent in 1929, 118 percent in 1930, 117 percent in 1931, and 119 percent in 1932.

The decline in production of these 17 important truck crops was due mainly to a decrease of 8 percent in the harvested acreage, as yields per acre averaged about the same as in 1932. The acreage of these truck crops has expanded steadily during the last 10 to 15 years and until 1933 had increased every year since 1923. The average rate of increase from 1923 to 1932 was about

7 percent per year, although in 1931 and 1932 it averaged only about 2 percent per year. In 1933 the acreage of 17 truck crops for fresh-market shipment totaled 1,311,000 acres compared with 1,432,000 in 1932 and the 1927-31 average of 1,250,000 acres. There were decreases in the acreages of asparagus, snap beans, beets, cabbage, cantaloups, cauliflower, celery, cucumbers, lettuce, onions, peppers, tomatoes, and watermelons. There were increases in carrots, green peas, and spinach; there was no change in the eggplant acreage. For 1934 the indications are that the tendency to gradually expand the acreages of these vegetables will again be resumed.

The commercial yields of truck crops for fresh-market shipment have been declining for more than a decade. The yield figures represent a composite of all areas producing the various crops; and although there are many factors affecting the averages of yields over the country as a whole, the indicated decline is probably chiefly due to the sharp expansion of acreage through which has occurred a gradual shifting of acreage to lower-yielding areas. During the decade ended with 1931, average yields per acre of 17 important truck crops taken as a whole declined about 20 percent, but since 1931 yields have been fairly stable.

With both average yields and prices of vegetables declining during the last decade, value per acre has declined sharply. From 1929 to 1932 the average return per acre from all truck crops for fresh-market shipment declined about 45 percent. These commercial truck crops returned growers an average of about \$104 gross per harvested acre in 1933 compared with \$96 per acre in 1932, \$118 in 1931, \$142 in 1930, and \$175 in 1929. During the early 1920's the index of value per acre of 17 important truck crops averaged about 125 percent of the 1924-29 average, while during the early 1930's it averaged only 65 percent; or the net decline during the 10 years was approximately 50 percent. The decline during the last few years has been accentuated by the sharp decline in prices which resulted from the drastic reduction in consumer demand.

CABBAGE

The United States cabbage acreage of 124,110 acres in 1933 was about 11 percent below that of 1932 and 13 percent below the 1927-31 average. The 1933 yield per acre averaged 17 percent below the 1932 yield and, with the smaller acreage, caused a 26-percent decrease in production. The 1933 crop totaled 719,600 tons against 973,600 tons in 1932 and the 5-year average, 1927-31, of 1,050,300 tons. With smaller supplies and with some improvement in consumer purchasing power during the second half of the year, cabbage prices generally averaged higher than in 1932. This price improvement was confined to the intermediate and late crop; prices of the early and second-early crops were lower than in 1932, being influenced by the large carry-over of late cabbage.

Production of domestic and Danish types of cabbage in the late States totaled only 382,800 tons in 1933, in contrast to 621,100 tons in 1932 and 581,300 tons the 1927-31 average. The 1933 acreage of domestic type was decreased 17 percent and Danish type 21 percent, owing to the disastrously low prices received for the large 1932 crops. Yields of both types were smaller than in 1932, the domestic type showing the greater reduction. The 1933 production of domestic cabbage in the late States is estimated at 189,200 tons, in contrast to the large 1932 crop of 327,000 tons. As a result of the smaller crop and a stronger demand, prices to growers through early October averaged about three times as high as the low 1932 prices. The early-season prices of domestic-type cabbage averaged about \$14.20 per ton, compared with \$4.12 for the 1932 crop, and \$10.31, the 1927-31 average.

The 1933 production of late Danish or storage-type cabbage is estimated at 193,600 tons against 293,900 tons in 1932, which was about an average crop. The smaller production of 1933 is the result of both a decreased acreage and smaller yields per acre. This smaller supply is bringing higher-than-average prices. Early fall prices have averaged around \$16.75 per ton, compared with \$3.54 per ton in 1932 and \$12.82, the 1927-31 average. Judging from what has happened in the past, the higher prices received for late cabbage this year are likely to influence growers to increase their 1934 plantings 10 to 20 percent which, with average yields in 1934, is likely to produce more late cabbage than can be marketed at prices affording a reasonable return to growers. Even with no increase in the late acreage in 1934 compared with 1933 and with average yields, production in 1934 would be 28 percent greater than in 1933.

In the early States (California, Florida, Louisiana, and Texas) it is likely that acreage planted for the 1934 spring market will be increased over the 1933 harvested acreage. Although prices to growers in 1933 were about 50 percent below 1932 prices, the prospective small carry-over of late cabbage is likely to encourage growers in these early States to increase plantings. The 1933 planted acreage was about 50 percent above the 1932 acreage, but severe freezes in January and early February destroyed a large part of the growing crop in Texas, and the acreage finally harvested in the four States was about 10 percent less than in 1932. Yields in Texas on the harvested acreage were decreased about 25 percent from the 1932 yield. Production for the four early States totaled only 147,600 tons, compared with 173,500 tons in 1932 and 216,400 tons, the 1927-31 average. Despite the small 1933 production, prices to growers averaged only \$12.75 per ton against \$25.90 per ton in 1932, because of the large carry-over of late Danish-type cabbage. With the smaller 1933 production of late Danish-type cabbage, it is likely that the carry-over will be much less a competitive factor in the early 1934 months.

In the second-early States (Alabama, Georgia, Mississippi, North Carolina, South Carolina, and Virginia) the prospects are for some increase in acreage in 1934 largely because of the likelihood that the carry-over of late Danish cabbage will be small. However, the low prices received for the second-early crop in 1933 may cause growers to increase acreage only moderately. In 1933 the acreage of cabbage in these States was increased 25 percent over that of 1932. With a slightly higher yield than in 1932, a total of 67,200 tons was produced in these States in 1933 compared with 48,300 in 1932 and 83,500 tons, the 1927-31 average. With consumer purchasing power at a low level and with a heavy carry-over of late Danish cabbage, prices of the second-early crop in 1933 averaged only \$25.60 per ton to the grower compared with \$42.25 in 1932.

Low prices received for the intermediate crop in 1932 caused growers in Arkansas, Illinois, Iowa, Kentucky, Maryland, Missouri, New Jersey, New Mexico, Tennessee, Washington, Long Island (N.Y.), and parts of Ohio and Virginia to reduce their cabbage acreage slightly in 1933. The smaller acreage and slightly lower yields resulted in a crop of only 115,500 tons of cabbage against 127,100 tons in 1932 and 163,200 tons, the 1927-31 average. With smaller supplies and somewhat improved demand conditions, prices of the intermediate crop averaged about \$27.30 per ton compared with \$15.41 in 1932, and a 5-year average price of \$21.90 per ton. The improved prices of 1933 are likely to cause some increase in acreage in these States in 1934. However, lower-than-average yields were produced during the last 2 years, and therefore any appreciable expansion of acreage, with average yields in 1934, would increase production considerably.

TOMATOES

The acreage of fall-crop tomatoes in Florida and Texas grown for fresh-market shipment in 1932-33 was almost double that of 1931-32, but unfavorable growing conditions cut yields to less than one half the usual average. Production totaled only 190,000 bushels compared with 272,000 bushels in 1931. Despite the small production, prices of this crop averaged only \$1.97 per bushel against \$2.97 the year before. In south Florida, the early-spring-crop acreage was increased about 27 percent in 1933 and, with fairly good yields, produced 1,620,000 bushels or slightly more than was harvested in 1932. Despite the larger production, prices averaged slightly higher than during the previous spring. In the other early areas (Imperial Valley of California, other sections of Florida, and the lower valley of Texas) the acreage of tomatoes was increased about one third, to 31,000 acres. Most of this increase occurred in the lower valley of Texas. The yield and production in California and Florida were lower than in 1932 but Texas production was three times as large as in 1932. The three areas combined produced a total of 1,713,000 bushels in 1933 against 1,299,000 bushels in 1932. With these much heavier supplies and with lower demand conditions, prices averaged only \$1.57 per bushel compared with \$2.56 in 1932 and \$2.41, the 1927-31 average. Owing to the lower prices received for these fall and spring tomato crops, the acreage planted in these areas for the coming season will probably be somewhat smaller than that of last year.

A smaller quantity of winter tomatoes will be available for export to the United States from Cuba and Mexico, according to early reports. Advices from Cuba say that the exports will probably be around 650,000 lugs of 38 pounds net, or roughly 20 percent less than last season's shipments. Picking of the

7,000-acre Cuban crop will begin about the first week in December, which is 2 weeks later than usual; this is the result of adverse weather and of labor troubles. Production costs this year are expected to be considerably higher in both Mexico and Cuba. In the latter country 1932 costs were estimated at about \$1.08 per 50-pound lug, f.o.b. Habana. Definite information on the size of the Mexican crop is not available, but reports indicate that unfavorable weather conditions have reduced the crop considerably.

In the second-early States (Georgia, Louisiana, Mississippi, South Carolina, and Texas other), the 1933 acreage of tomatoes was decreased about 14 percent below that of 1932. Yields averaged slightly below those of the previous year and production was reduced materially. A total of 2,702,000 bushels was produced in 1933 compared with 3,214,000 in 1932. With these smaller supplies, prices averaged \$1.52 per bushel or somewhat higher than in 1932 and only slightly below the 1927-31 average. These higher prices are likely to cause growers to increase the second-early acreage in 1934, but since yields last season were unusually low and since the acreage was above the recent 5-year average, only a moderate increase in the 1934 acreage will be sufficient to produce a second-early crop large enough to supply the demand at prices affording producers reasonable returns.

The 1933 production in the intermediate States (Arkansas, Maryland, Missouri, New Jersey, North Carolina, Tennessee, Virginia; and parts of California, Ohio, and Illinois) was reduced to 4,090,000 bushels from the large crop of 5,780,000 bushels in 1932. This decrease in production was due to a 17-percent reduction in acreage and to 15-percent lower yields. With the smaller supplies in this group of States, coupled with a smaller production in the second-early States, prices of intermediate tomatoes averaged 83 cents per bushel or substantially higher than in the previous year, but lower than the recent 5-year average. The greater returns this year are likely to result in some increase in acreage in 1934. In view of the fact that more nearly average yields may be obtained in 1934, which would be somewhat higher than those of 1933, any expansion of acreage in 1934 over that of 1933 would result in an intermediate production much larger than that of last season.

The 1933 acreage of tomatoes in the late States (Colorado, Delaware, Indiana, Iowa, Kentucky, Michigan, New York, Oregon, Pennsylvania, Utah, Washington, and parts of California, Ohio, and Illinois) was decreased about 9 percent below that of 1932. Yields were about average but, owing to the smaller acreage, production is expected to total only 4,674,000 bushels compared with 5,051,000 bushels harvested in 1932 and 5,752,000 bushels, the 1927-31 average. The southern district of California, which comprises the second section of the late group of States, is expected to produce only 806,000 bushels in 1933 against 979,000 bushels during the previous season. These smaller supplies, coupled with improved demand conditions, are resulting in higher prices to growers in 1933 than they received in 1932. In view of the decrease in acreage in 1933 and the higher prices being received for the late crop, it is probable that the 1934 acreage will be somewhat larger than that of the present season.

ONIONS

Production of onions in the late States this year is expected to be about 25 percent below the record crop harvested in 1932 and only slightly below average. Owing to the disastrously low prices received for onions in 1932 the acreage in the late States in 1933 was reduced about 13 percent below that of 1932 and 6 percent below the average acreage of the previous 5 years. The 1933 yields are indicated to be somewhat under those of 1932 but slightly above average. The smaller crop in 1933, combined with some improvement in demand conditions, is resulting in prices almost three times as high as the low prices received by growers in 1932. During the early fall months late-onion prices have averaged about 60 cents per bushel compared with only 21 cents, the season average for the 1932 crop, and 76 cents which was the 1927-31 average. These higher prices this year are likely to encourage growers in the late-crop States to increase their 1934 acreage. However, a crop of late onions no larger than the crop produced in 1933 is adequate to take care of consumption requirements at a price that will afford reasonable returns for labor and investment on the average farm.

In the spring of 1933 the storage stocks of onions from the large late crop of the previous year were unusually heavy and prices generally were very low.

These heavy supplies had a depressing influence on prices throughout most of the early crop (Bermuda and Creole) marketing season, so that prices for these new onions averaged only slightly more than one half those of 1932. These low prices were received despite the fact that new-crop production in the early States totaled only 2,708,000 bushels against 4,886,000 bushels in the previous year. Owing to the huge storage supplies of late onions last season, the early acreage was reduced from 24,850 acres in 1932 to 19,650 acres in 1933. The yields in Texas and Louisiana were reduced materially by unfavorable growing conditions. For 1934 the price prospects for the early crop are more favorable than they were in 1933, and it is probable that the acreage of onions in the early States will be increased somewhat. However, even with no increase in the early acreage in 1934, production would be increased about 45 percent if average yields are harvested. With an average production of onions in the late States this season, the competition from storage supplies next season is not likely to be so severe as it was in 1933.

The 1933 domestic onion crop in the intermediate States was decreased about 11 percent below that of 1932, primarily because of a decrease in acreage. A total of 2,657,000 bushels was produced in these States in 1933 against 2,992,000 bushels the previous year. As a result of these smaller supplies and some improvement in demand conditions, onion growers received an average of 81 cents per bushel for their 1933 production against 51 cents the previous year and 83 cents, the 1927-31 average. These higher returns are likely to cause some expansion in acreage in 1934, but by the time the intermediate crop is marketed it is likely that considerable supplies of early onions will still be on the market and will have a depressing influence on prices of intermediate onions.

CANTALOUPS AND MISCELLANEOUS MELONS

The early acreage of cantaloups and miscellaneous melons in 1933 was 22 percent smaller than that of 1932, which resulted in an 18 percent smaller marketable supply of early cantaloups and melons. Commercial production in the early States (Florida, Imperial Valley of California, and south Texas) amounted to 5,248,000 crates in 1933 compared with 6,420,000 crates in 1932, which was about 2 percent below the average production of 1927-31. Owing to these smaller supplies, growers in the early States received slightly higher prices than in 1932, or \$1.40 per crate against \$1.15.

In the second-early States (Arizona, Arkansas, Georgia, Nevada, North Carolina, Oklahoma, South Carolina, and other sections of California and Texas) the cantaloup and melon acreage was decreased about 36 percent and production was reduced from 5,661,000 crates in 1932 to 3,980,000 crates in 1933. Although supplies in these States were decreased 30 percent, prices to growers averaged only a little higher than in the previous year. In 1933, growers received 59 cents per crate against 54 cents in 1932, and \$1.12, the 1927-31 average.

In the intermediate and late States, there were only small changes in the acreage of cantaloups and melons, and production remained about the same as in 1932. The crop was smaller in the intermediate States but larger in the late. These supplies resulted in lower prices to growers than in 1932. The intermediate crop returned growers only 57 cents per crate compared with 81 cents in 1932, and \$1.33, the 1927-31 average. The late-crop prices averaged 62 cents per crate compared with 71 cents in 1932, and \$1.05, the recent 5-year average.

WATERMELONS

Watermelon acreage from 1930 to 1932 was especially large—approximately 235,000 acres for the country as a whole in each of these years. Prices to growers declined steadily from 1929 to 1932, and in 1931 and 1932 a considerable part of the crop was left unharvested because of low prices, especially in producing sections where transportation costs are high. Watermelon acreage in 1933 was reduced about 20 percent from the large 1932 acreage, and with a yield per acre below the average, production was the smallest since 1923. With a reduced crop, prices improved somewhat over the low 1931 and 1932 prices, but total gross returns to growers were, with the exception of the 1932 crop, the lowest in more than a decade.

Early acreage in Florida and California in 1933 was estimated at 30,500 acres or about 20 percent less than the 1932 acreage and about 40 percent below the peak plantings in 1929. Yield per acre was low and production the

smallest since 1923. Prices to growers in these early States improved sharply from the low prices of recent years and averaged only slightly below 1929 prices.

The tendency to reduce watermelon acreage was carried over into the second-early States of Georgia, South Carolina, North Carolina, Alabama, Mississippi, Texas, and Arizona, where the reduction from the 1932 acreage amounted to about 25 percent. Yield per acre was low and the indicated 1933 production in these second-early States was the smallest since 1919. Notwithstanding the small crop, prices to growers improved only moderately from the extremely low 1932 prices.

Late watermelon acreage in Arkansas, California, Colorado, Delaware, Illinois, Indiana, Iowa, Maryland, Missouri, Nevada, New Jersey, Oklahoma, Oregon, Virginia, and Washington was reduced about 15 percent from the high acreage of 1931 and 1932 but was the third largest acreage thus far planted. Yields in these late States were somewhat above average and prices were more than 25 percent higher than the low 1932 prices.

TRUCK CROPS FOR MANUFACTURE

With relatively light supplies of canned vegetables in sight for the 1933-34 marketing season, and with some improvement in consumer purchasing power during the latter half of 1933, it appears that prices to growers for tonnage of truck crops grown for manufacture may be somewhat higher in 1934 than the record low prices of 1932 and 1933 and that larger acreages may be contracted in regard to certain crops. Wholesale prices of canned vegetables have shown material advances over the low points of early 1933 and will probably continue in a relatively favorable position throughout the 1933-34 marketing season.

Judging from the movement of total acreage of canning vegetables during the last 15 years, when acreage expanded and contracted through more or less regular periods, reaching peaks in 1918, 1925, and 1930, it appears that, following the low acreage of 1932, the increase of about 9 percent in 1933 is likely to be followed with further expansion of acreage in 1934 and 1935. During the last 2 years the low level of consumer purchasing power has been the dominant factor affecting prices, and prices to both the grower and packer remained low in spite of relatively small supplies in each of those years. Acreage should be determined, as far as possible, by probable consumption requirements of the several crops during the 1933-34 and 1934-35 marketing seasons. The probable level of consumer purchasing power, size of the 1933 packs, carry-over, and, to some extent, competition of fresh vegetables and home canning, are the main factors to be considered. Since packers usually control about 90 percent of the acreage of canning vegetables through contracts with growers, the determination of the 1934 plantings is largely in the hands of the packers themselves.

The 1933 level of prices to growers of seven of the more important truck crops for commercial manufacture (tomatoes, green peas, sweet corn, snap beans, asparagus, cabbage for sauerkraut, and spinach) appears to be about 4 percent above the low-record level of 1932, but remains 31 percent below the average for the period 1924-29. Comparative data are not available for the base period, 1909-14. This slight increase for the group reflects the higher prices paid to growers in 1933 for tomatoes, sweet corn, and cabbage for sauerkraut, the three crops on which contract prices were voluntarily increased by canners at the request of the Agricultural Adjustment Administration. On the other four crops of the group (asparagus, snap beans, green peas, and spinach), prices in 1933 averaged about 3 percent lower than for 1932. During the period 1921 to 1930 the index of average price per ton for these seven crops showed very moderate fluctuations from year to year, with no year varying more than 8 percent from the 1924-29 level. Beginning with 1930, prices of these vegetables declined only slightly but dropped 15 percent during 1931 and 22 percent in 1932. As a result of low prices and relatively light yields per acre during 1931, 1932, and 1933, the average gross value per acre during this period dropped 36 percent below the 1924-29 average. The crops returned, on the average, about \$31 per acre gross to the growers in 1933, compared with \$35 in 1932, \$38 in 1931, \$50 in 1930, and \$56 in 1929.

Prices of canned goods (tomatoes, sweet corn, green peas, and snap beans) have shown declines which have been closely associated with the declines in prices paid to growers for raw materials. The average wholesale price of these canned products during the early months of 1933 was 35 to 40 percent below

the 1924-29 level and followed closely the drop in the all-commodities index. The September prices of canned vegetables, however, were materially higher than January prices and averaged only about 16 percent lower than the 1924-29 September level. Inasmuch as contract prices to the grower are largely determined by prices received by packers for canned vegetables during December, January, and February, the level of prices to growers for raw materials for the 1934 season will depend largely upon wholesale prices of canned vegetables during the next 4 months. The present wholesale level is higher than the low prices of early 1933.

Insofar as the supply of canned vegetables affects prices to the grower and canner, the present statistical position of the supply factors is rather favorable. Judging from preliminary estimates, the total production of commercial canning vegetables in 1933 is about 11 percent below the small production of 1932 and nearly 31 percent under the 5-year average production for the period 1927-31. Increases over 1932 on the production of asparagus, sweet corn, green peas, and spinach have been more than offset by smaller crops of the other vegetables, especially of tomatoes and cabbage for sauerkraut. In terms of pack of canned vegetables, production comparisons are possible on tomatoes, green peas, sweet corn, and snap beans, the only major canning crops on which the Department of Commerce gathers annual pack statistics. The combined canned pack from these crops, representing from 85 to 90 percent of the total tonnage production of the seven crops listed above, according to October 1 estimates of tonnage production will be around 44,000,000 equivalent cases of no. 2 cans, or slightly less than the total of approximately 45,000,000 cases packed in 1932. (Although estimated tonnage production of the four crops is 12 percent less than that of 1932, the decrease in probable pack is only about 2 percent, because of the variation in cases per ton obtained from the several crops.) The 1932 and 1933 packs are the smallest since 1922. A high record pack of about 80,000,000 cases was obtained in 1925. Following 1925, there were 2 successive years of decreases succeeded by 3 years of expansion, which culminated in another high pack of 75,555,000 cases in 1930. In 1931 the pack declined to 55,425,000 cases. The average size of the total pack for the 5-year period 1927-31 was 60,894,000 cases, with a range from 50,818,000 cases in 1927 to 75,555,000 cases in 1930.

Although complete data on present holdings of canned vegetables by canners and distributors are not available, these holdings are comparatively small as a result of 2 successive years of light production. The quarterly report of the Department of Commerce of October 1, 1933, giving comparative holdings of identical groups of representative canners and distributors from one period to another, showed the following trends for tomatoes, green peas, sweet corn, and snap beans.

Total holdings *by identical canners* of the four commodities on October 1, 1933, were about 30 percent below their stocks on hand October 1, 1932. Canned tomato stocks (carry-over stocks) decreased 64 percent, green peas 27 percent, sweet corn 30 percent, and snap beans 13 percent below the holdings of October 1, 1932. Compared with holdings on October 1, 1931, tomatoes were smaller by 83 percent, green peas by 45 percent, sweet corn by 47 percent, and snap beans by 33 percent.

Total stocks of the same commodities held *by identical distributors* on October 1, 1933, averaged about 3 percent less than stocks on hand October 1, 1932. Tomatoes declined 13 percent, snap beans 1 percent, holdings of green peas were about the same, and sweet corn increased about 2.8 percent.

Following a high record of 1,211,300 acres of the seven major canning vegetables harvested in 1930, the combined acreage of these vegetables declined to 995,130 acres in 1931 and to 724,500 acres in 1932. Although the acreage planted to these crops in 1933 increased to 792,000 acres, or about 9 percent over that of 1932, it remains 20 percent below the 5-year average for the period 1927-31. The acreage planted to canning vegetables has expanded and contracted in a more or less regular movement since 1918. Following a peak of 808,400 acres harvested in that year, total acreage declined for 3 successive years to a low point of 394,200 acres in 1921. Beginning with 1922, there were 4 successive years of increases to another peak of 1,067,500 acres in 1925. This peak was followed by 2 years of decreased acreages and then by 3 years of expansion, reaching the high peak of 1,211,300 acres in 1930. It now appears that acreage is at the beginning of another period of expansion.

SNAP BEANS FOR MANUFACTURE

The average price paid to growers in 1933 for snap beans for canning appears to have been about 2 percent under the low price of 1932 and was the fourth successive decline registered since 1929. Declines in prices to growers have been closely associated with declines in wholesale prices of canned snap beans (green and wax) during the December and January preceding the crop season. During the last three seasons these declines were as follows: For the December and January preceding the 1931 season, the price level of canned snap beans was 15 percent below the average for the 1926-30 period and was followed by a price to growers 14 percent below the 1926-30 average; for the 1932 season, canned snap beans were 38 percent less than the 1926-30 average and prices to growers 39 percent less; for the 1933 season, canned snap beans registered a decline of 43 percent below the same average, and prices to growers were 40 percent under the average. In September 1933, the average wholesale price of canned snap beans was about 25 percent less than the 5-year average September price for 1926-30.

The price of canned snap beans depends more upon factors outside the industry than upon the size of the bean pack. The changes in consumer purchasing power and in prices of competing vegetables, and the production of snap beans for the fresh market, are important factors that have influenced the price of canned snap beans during the last two seasons. These factors have tended to depress the price of snap beans and have brought about a drastic reduction in supplies since the peak productions of 1929 and 1930.

In 1930, the acreage of snap beans for canning reached a high record of 78,700 acres. In 1931, this acreage was reduced to 52,700; in 1932, it dropped to 31,700; and in 1933, the planted acreage reached a total of 32,800. Yields per acre have been relatively low during the last three seasons and, combined with the acreage decreases, have resulted in light production. Production in both 1932 and 1933 was less than one half of the record-high crops of 1929 and 1930. The indicated pack of green and wax beans from the 1933 crop, based upon estimated tonnage, will probably be near 3,800,000 cases of 24 no. 2 cans compared with packs of 4,024,000 cases in 1932, 6,067,000 cases in 1931, 8,251,000 cases in 1930, and 8,529,000 cases in 1929.

Supplies of canned snap beans promise to be equivalent to about 4,500,000 cases of no. 2 cans for the 1933-34 season compared with 4,000,000 for the 1932-33 season and an average of about 5,500,000 for the last five seasons. For the last two seasons consumption of canned snap beans has averaged slightly under 4,000,000 cases. Since consumption depends, to a large extent, upon the relation of canned snap bean prices and prices of snap beans on the fresh market, the supply requirements for the 1934-35 season are difficult to estimate.

SWEET CORN FOR MANUFACTURE

Following declines in prices to the grower of 14 percent in 1931 and 32 percent in 1932, preliminary estimates indicate that the 1933 average price to the grower was about 6 percent higher than the 1932 price but was about 38 percent below the 5-year average price for the period 1926-30. The higher price paid to growers in 1933 was largely the result of late-season increases in contract prices by canners at the request of the Agricultural Adjustment Administration.

Contract prices to growers are largely influenced by the average wholesale prices of canned corn during the December and January preceding the crop season. During the last three seasons declines in the December and January canned prices below the average for the 1926-30 period have been succeeded by declines in contract prices below the 1926-30 average as follows: Preceding the 1931 season, a decline of 7 percent in the wholesale price of canned corn was followed by a 14-percent decline in the contract price to growers; for the 1932 season, a decline of 32 percent in the price of canned corn was followed by a 41-percent decline in the contract price; and for the 1933 season, a 41-percent decline in the price of canned corn was followed by a 38-percent decline in the average contract price. (The 1933 comparison relates to the adjusted price paid to growers after late-season increases were made by canners.) The average wholesale price of canned corn in September 1933 was about 25 percent below the 1926-30 level of September prices.

Acresage of canning corn in 1933 was increased about 16 percent over the unusually small acresage of 1932 but was 40 percent less than the 5-year average for the period 1927-31. Total production in 1933 is expected to exceed the 1932 production by about 4 percent but compared with 1927-31 average will show a decrease of 36 percent. Pack statistics are not yet available from the 1933 crop, but the estimated production of tonnage would indicate a pack of approximately 10,000,000 cases of 24 no. 2 cans. In 1932, the total pack was 9,358,000 cases; in 1931, 19,415,000 cases; and in 1930, 15,692,000 cases.

With a probable pack of about 10,000,000 cases in 1933, and with a relatively small carry-over on September 1, it appears that the total supply of canned corn for the 1933-34 marketing season will not greatly exceed 12,000,000 cases of no. 2 cans and may not exceed consumption requirements for the 1934-35 marketing season. In this event the total supply of canned corn for the 1934-35 marketing season must come from the pack of 1934. Total supplies for the 1932-33 season were about 16,000,000 cases, and the average of the last 5 years was between 19,000,000 and 20,000,000 cases. The apparent annual consumption for the period 1925-30 appears to have averaged about 16,000,000 cases. In 1930-31 the apparent consumption had dropped to about 15,000,000 cases; in 1931-32 it appears to have been about 16,000,000 cases; and in 1932-33 around 14,000,000 cases.

Under average growing conditions a yield of about 2.1 tons per acre might reasonably be expected. Should near-average growing conditions prevail in 1934, it would require from 250,000 to 275,000 acres to produce a tonnage sufficient to pack 14,000,000 cases.

GREEN PEAS FOR MANUFACTURE

Declines in the average price to growers of 5 percent in 1931 and 20 percent in 1932 were followed by a further decline of 4 percent in 1933. The 1933 price to growers was 27 percent below the average for the 5-year period 1926-30. Contract prices to growers have usually followed the trend of wholesale prices of canned peas during the preceding December, but during the last two seasons have shown relatively larger decreases than have the prices of canned peas. In September 1933 the wholesale price of canned peas was about equal to the average for September during the 5-year period 1926-30.

On an acresage about 13 percent larger than that of 1932 and slightly smaller than the 5-year average of 1927-31, the 1933 production exceeded the 1932 production by approximately 17 percent. The crop experienced the second successive year of unfavorable growing conditions, however, and total production dropped 28 percent below the 5-year average production. Had more nearly average growing conditions prevailed, the pack from the 1933 acresage would probably have exceeded 17,000,000 cases of 24 no. 2 cans and resulted in a heavy carry-over and relatively low prices for canned peas. The pack which actually resulted under adverse growing conditions totaled 12,893,000 cases compared with 10,367,000 cases packed in 1932, 13,288,000 cases in 1931, and with a high record of 22,035,000 cases in 1930.

Total supplies of canned peas for the 1933-34 marketing season were probably in the neighborhood of 14,000,000 cases of no. 2 cans, compared with about 13,000,000 cases for the 1932-33 season and an average for the last five seasons of about 20,000,000 cases. The domestic utilization of canned peas during the 1932-33 season was about 12,000,000 cases, which was considerably under the 5-year average apparent consumption of about 16,000,000 cases. With somewhat improved consumer purchasing power expected, it appears probable that the 1933-34 supplies may be absorbed to such an extent that carry-over at the end of the season may be relatively small. However, the acresage planted in 1933 was sufficient to have produced a pack of 17,000,000 cases under near-average growing conditions and, unless a material improvement in consumer purchasing power occurs next year, an acresage of equal size planted in 1934 may produce a pack that will be excessively large for domestic consumption requirements.

TOMATOES FOR MANUFACTURE

Although no definite information is yet available on the average price paid to growers for canning tomatoes in 1933, it is expected that this price will be

somewhat higher than the relatively low prices of 1931 and 1932, which averaged 20 and 32 percent, respectively, below the 1926-30 level. The light production estimated for 1933, combined with late-season increases of contract prices on the part of canners, are expected to bring about this improvement in the 1933 average price.

Contract prices to growers are influenced by the average of wholesale prices of canned tomatoes in December and January preceding the crop season. The averages for these months preceding the 1931 and 1932 seasons showed drops of 25 and 26 percent, respectively, below the 1926-30 average. The price of canned tomatoes in September 1933 was about 20 percent below the September average for the 5-year period, 1926-30. If employment were at a higher level, the relatively light supply of tomatoes expected in 1933 would be a more significant factor in determining the level of prices for canned tomatoes during the next 3 months and of contract prices for the 1934 crop.

Production of tomatoes for manufacture in 1933, according to October 1 indications, was expected to be smaller than any crop in the last 11 years. But as weather during October has been favorable for late harvesting, it is probable that final reports may show a total production somewhat larger than the estimate of October 1. The total production indicated on October 1 was 957,000 tons, or 20 percent less than the 1932 production of 1,199,000 tons and slightly smaller than the light crop of 1931, when a total of 976,500 tons was produced. Compared with the peak production of 1,757,600 tons in 1930, the 1933 crop shows a reduction of about 46 percent. The indicated average yield per acre on the 1933 acreage is the lowest during the last 15 years, with the exception of 1931, and is the result of early season drought in many of the producing areas and damage from the severe storm that swept some of the Atlantic Coast States during the latter part of August.

The light production of tomatoes for manufacture now indicated for 1933 will probably mean a pack of about 10,000,000 cases of 24 no. 3 cans of canned tomatoes. This estimate is based upon the assumption that the proportion of the 1933 total production going into canned tomatoes will not differ greatly from that of 1932, when approximately 50 percent of the total production estimated for manufacture was utilized as canned tomatoes, and 50 percent went into the manufacture of tomato juice, paste, pulp, puree, catsup, etc. In 1932, the pack of canned tomatoes, estimated upon an incomplete enumeration by the Department of Commerce, appears to have been around 12,000,000 cases of no. 3 cans. In 1931, the pack was 9,573,000 cases; in 1930, it had reached 16,998,000 cases.

It appears that the total domestic supply of canned tomatoes for the 1933-34 season will not exceed 11,000,000 cases of no. 3 cans, compared with a domestic supply of about 13,000,000 cases for the 1932-33 season and with an average of about 14,700,000 cases for the 5-year period, 1927-32. Imports of canned tomatoes during the 5-year period, 1928-33, have averaged about 2,000,000 cases and exports have averaged about 83,000 cases. In 1932-33 imports were 1,460,000 cases and exports were 82,000 cases.

The average yield per acre during the 5-year period, 1927-31, was 4.1 tons per acre. Should near-average growing conditions prevail in 1934, it would require an acreage about as large as the 5-year average of 313,000 acres to produce a pack of 13,000,000 cases, assuming that approximately the same proportion of the total tonnage for manufacture would be packed as canned tomatoes in 1934 as in recent years.

FRUITS

Probably the most significant factor manifest in the fruit industry as a whole is the tendency to develop, or at least to maintain, orchards close to large consuming centers and to neglect considerably those more distant. Comments from fruit producers in the lower Hudson Valley in New York, in eastern Michigan near Detroit, in Pennsylvania in the vicinity of Philadelphia, and in northern Ohio, indicate that good care is being given orchards in these areas. In contrast to this tendency, a note of discouragement is sounded from many of the more distant producing sections. This condition has been brought about largely by the declining prices of the last 3 years during which the producer within economical trucking distance of market has been able to reduce marketing costs relatively more than those at greater distances. Also during the last 3 years consumer purchasing power has been low and quality has not brought the usual premium.

Prices of nearly all fruits have been declining steadily since 1929. During 1930 it was practically impossible to cut costs as rapidly as the price declined. As a result growers received little above costs for their fruit crops. During the next year (1931) production costs at the orchard had been reduced close to the minimum and, in fact, in many cases resulted in actual neglect to trees. Freight rates were not reduced in conformity with the declining prices and by 1931 prices had reached a point at which the cost of getting the produce from the producing center to the distant consuming center was taking a very much larger proportion of the consumer's dollar than was the case when prices were higher.

The average production of apples per tree in the Pacific Northwest is nearly double that of New York or Virginia; however, the declining prices without a corresponding decline in transportation costs during the last 4 years has gradually wiped out this advantage of the Northwest. In addition, the producer close to markets has found it possible to reduce not only orchard costs but also transportation costs by use of motor trucks. The net result has been to offset the advantage of higher production and lower orchard cost per unit of production held by some of the distant areas. This has placed the producing areas that are in close proximity to the larger markets in a highly advantageous position from a domestic-market standpoint as compared with those areas farther away.

From the export standpoint, the situation is again clouded by increased tariffs and quotas established by importing countries.

These developments, during the last few years of low prices, have been largely responsible for the tendency toward better care of the nearby orchards and relatively more neglect in those locations where transportation constitutes a large portion of the producing costs. How long and to what extent this development will go will depend largely upon the future course of prices and costs. At present, orchard-operating costs have been reduced to such extent that diseases and insects are making heavier inroads than usual on the quality of the fruit produced. In order to produce good quality fruit, many orchardists will find it necessary to increase spraying and other operating expenses.

Owing largely to the rapid increase in citrus production during the last 15 years, the combined production of all fruit has continued to advance approximately 1 percent a year for the last 10 years. The trend of total apple production has been about level since 1924 with some indication of a downturn during the last 2 years. The production trend is downward for peaches, grapes, and olives. Trend of pear, cherry, and prune production continues upward. There are still sufficient trees of all kinds now in orchards, however, to continue to produce heavy commercial supplies in years of favorable weather conditions.

On a per-capita basis, production of all citrus fruits for the 5 years 1919-23 averaged 27 pounds per capita as compared with 42 pounds, the average for the period 1927-31. Orange production increased from 19 pounds per capita in the former period to 29 pounds in the latter; grapefruit increased from 5 pounds to 9 pounds, and lemons from 3 pounds to 4 pounds. A similar comparison for other fruits shows that apples declined from an average of 77 pounds per capita in the period 1919 to 1923 to an average of 64 pounds in the 5 years 1927 to 1931, and grapes declined from 39 pounds to 36 pounds, largely as the result of the short 1931 crop. Peaches increased from 21 pounds to 23 pounds and pears from 7 pounds to 10 pounds, thus making a net increase in the per capita production for these seven fruits from 195 pounds to 205 pounds. Imports of bananas average 24 pounds per capita in the period 1919-23 as compared with an average of 30 pounds for the 5 years, 1927-31.

Farm prices of fruit declined steadily from 1929 to 1932 when the lowest level in 20 years was reached. Prices to date during the 1933 season improved somewhat, largely as the result of the relatively short crop of fruits which followed the below-average crop of 1932, and some improvement in consumer-purchasing power.

Exports of fruit and fruit products from the United States have amounted to close to 10 percent of the total fruit crop. Consequently the foreign market is of great importance in the marketing of United States fruits, especially since foreign markets desire a larger proportion of the small sizes of fruit.

Valued at \$65,900,000, exports of fruit and fruit products were exceeded in value only by raw cotton in the year ended June 30, 1933. Total fruit exports amounted to 881,000 short tons, of which fresh fruit comprised 563,000, dried fruit 198,000, and canned fruit 120,000 short tons. Fresh apples are the most

important single item, amounting to 302,000 tons in 1932-33. Oranges totaled 118,000, pears 59,000, and grapefruit 32,000 tons—mention the most important fresh-fruit exports.

CITRUS FRUITS

Producers of oranges and grapefruit are confronted with a continuing upward trend in production in the United States. Since approximately half the 611,000 acres of bearing orange and grapefruit trees are less than 15 years old and nearly a fifth of the total acreage of 747,000 is not yet of bearing age, it seems evident that, barring severe damage to trees from freezes or storms, further increases in production may be expected. But planting in recent years, particularly in 1932-33, has slowed down somewhat. The bearing acreage of lemons has not changed much in the last decade although production has increased. More lemon trees than usual were planted during the last few years.

The relationship of the price and the supply of oranges and grapefruit during the last 20 years indicates a pronounced increase in demand up to 1930. During the last 3 years, because of economic conditions, the upward trend in demand has been checked and in the last season, with about the same supply as in the previous season, prices were much lower.

Production has now reached the point at which there are burdensome surpluses in years of average or better-than-average growing conditions. During the 4 years ended in 1931 orange and grapefruit production averaged about 62,860,000 boxes which is 42 percent above the average for the previous 4 years and 60 percent above the average for 1920-23. In 1930 the combined production of oranges and grapefruit amounted to 74,204,000 boxes. With the increase in number of bearing trees and the natural increase in bearing capacity of the younger trees, growing conditions similar to those prevailing in 1930 would now result in a crop of nearly 86,000,000 boxes. If there is no more than the usual loss of trees, it would be possible, under favorable conditions, for the production of oranges and grapefruit combined to exceed 95,000,000 boxes by 1935.

World production of oranges and grapefruit, particularly the latter, is increasing although the rate of planting has decreased in some countries during the last few years. Not much change is indicated in the average world production of lemons. Exports of oranges and grapefruit from the United States in recent years have usually amounted to 7 to 10 percent of the crop. Uncertain factors in the outlook for future exports of oranges and grapefruit are the result of increasing world supplies, tariffs, import restrictions, exchange ratios, and general business conditions.

For the 1933-34 season the outlook is for somewhat better marketing conditions than existed last year. The total orange and grapefruit crop is expected to be smaller than in 1932. Storms in September reduced grapefruit crop prospects 88 percent in Texas and 25 percent in Florida. Oranges were less severely damaged. The smaller supplies and the prospect of the regulation of shipments in accordance with the requirements of the markets are strengthening factors in the outlook for the 1933-34 marketing season. The citrus-fruit marketing agreements that are nearing completion (Nov. 3, 1933) under the Agricultural Adjustment Act include provisions for regulating the volume of shipments.

ORANGES

Total United States orange acreage now amounts to about 535,000 acres, of which 460,000 acres or 86 percent is of bearing age. Of the acreage in bearing, 62 percent is estimated to be 15 years old or older, 18 percent between 10 and 15 years, and 20 percent between 5 and 10 years. Florida now has approximately 260,000 acres, of which 221,000 are of bearing age and 39,000 are not of bearing age. The bearing acreage in Florida, as a whole, has ceased to expand and is now probably declining slightly. During the last 3 years plantings were less than half those of the previous 3 years. In California there are about 237,000 acres in oranges, of which 211,000 are in bearing. About 98,000 of the bearing acres are Washington Navel and miscellaneous varieties, and 113,000 acres valencia. The bearing acreage of valencia continues to expand and the majority of recent plantings have been of this variety. The bearing acreage of Washington Navel, on the other hand, has tended downward slightly during the last 2 years. Acreage of oranges in Texas and Arizona has been increasing during recent years and is now estimated at

about 19,000 acres bearing, and 8,200 acres not yet of bearing age. In Louisiana, Alabama, and Mississippi, production is largely of satsuma oranges. The combined acreage in these States is approximately 11,500 acres, of which about 9,300 are of bearing age.

Production of oranges for the country as a whole averaged about 31,461,000 boxes during the period 1920-23, about 34,609,000 boxes from 1924-27, and about 48,178,000 boxes from 1928-31, which shows about 53 percent increase since the period 1920-23. With the increasing bearing capacity per tree up to about 15 years of age and the large proportion of trees that have not reached full bearing, it seems that, barring unusual loss from freezing or other catastrophes, the average production of oranges during the next 5 years is likely to exceed the average for the last 5-year period.

The total United States orange crop in the 1932-33 season was only 1 percent larger than that of the previous year but owing chiefly to weaker demand conditions, prices to Florida growers in 1932-33 averaged 37 percent less and to California growers 18 percent less than in the previous season. With slightly smaller prospective supplies for 1933-34, the outlook is that prices will average higher than last season, particularly if business conditions improve.

World orange production and the volume moving into trade are increasing. More oranges than formerly are being shipped during the winter months (December to April) by Palestine and Spain, particularly Palestine, and during the summer months by Brazil and South Africa. Consequently, more competition than formerly may be expected in export markets, especially in Europe. The future of the United States export trade in oranges will be influenced by the increasing world supplies, changes in per-capita consumption, business conditions, exchange rates, and trade barriers.

Exports of oranges from the United States in recent years have averaged about 7 percent of the production. Canada has usually taken about three fourths of the orange exports and the United Kingdom has been our next best customer.

Orange exports during the 1932-33 season were approximately 3,400,000 boxes which are more than was exported the previous season but are below the 5-year average. Shipments to Canada declined somewhat as compared with 1931-32, whereas the movement to the United Kingdom and continental Europe increased.

The smaller United States orange crop in prospect for the 1933-34 season coupled with the improvement in foreign exchange as compared with last year, are factors favorable to higher prices for the 1933-34 exports.

Although the orange acreage in Puerto Rico is considerably larger than that of grapefruit, amounting to about 30,000 acres, it is far less important commercially. This is because a large proportion of the trees are in small holdings or are allowed to grow wild. Production averages around 1,000,000 boxes a year. Most of the crop is consumed on the island. Shipments to the United States have ranged from about 22,000 to 550,000 boxes a year; the quantity shipped depends mainly on prices in the United States. Consequently in the last few years shipments to the United States have been light.

GRAPEFRUIT

In the United States there are about 212,000 acres of grapefruit trees of all ages. Close to 30 percent of the total acreage is not yet of bearing age. For the production of the 1933-34 crop, there are about 151,000 acres of which only about one fourth is as much as 15 years old and therefore considered in full production, and about half is estimated to be between 5 and 10 years old.

Florida has about 90,000 acres of grapefruit trees, of which approximately 9 percent is not yet of bearing age. Of the 92,000 acres in Texas, about 47 percent is not of bearing age. In California and Arizona the grapefruit acreage amounts to about 30,000 with about one third under bearing age.

The trend of production has been steadily upward since the beginning of the industry. For the 5 years 1919-23, the average production was 7,523,000 boxes, while during the 5 years 1927-31, production averaged 13,660,000 boxes, an increase of 82 percent.

With approximately half of the bearing grapefruit trees under 10 years old, and with about 1 tree of nonbearing age to every 2 bearing trees now in groves, it seems reasonable to expect the upward trend in production, that has been in evidence for the last decade or more, to continue. Unless natural

or economic forces intervene to check the rapid increase in production that appears in prospect, grapefruit producers will have to rely upon an increase in demand, improvement in market distribution, and factory utilization of surplus fruit, to maintain profitable prices.

Puerto Rican grapefruit production, owing to hurricane damage to trees and lack of financial resources of growers, will probably not reach normal output for at least 2 or 3 years. Perhaps one third of the trees is under bearing age. The 1933-34 commercial crop will probably be about 1,150,000 boxes. By 1937-38 it is possible that 1,600,000 boxes may be shipped. Although Puerto Rico has a year-round production, the largest shipments to continental United States have usually been from August to October. In recent years an increasing proportion of the Puerto Rican movement has been in the form of direct shipments to foreign countries.

For the last 4 years grapefruit canneries have used an average of about 2,000,000 boxes or about 14 percent of the United States annual production. Although this utilization of fruit has provided a market for some of the surplus, it also competes with the fresh fruit, particularly in the early part of the marketing season. Incomplete statistics now available indicate a pack of around 2,600,000 cases during the 1932-33 season which would be almost three times the pack of the previous season and approximately the same as the pack during 1930-31.

The demand for grapefruit increased greatly from 1914 to 1929 when the upward trend was reversed because of the decline in consumers' purchasing power. In the 1932-33 season, although shipments of Florida grapefruit were about the same as the previous season, the price to growers was 13 percent less.

Production of United States grapefruit for the 1933-34 season is expected to be about 17 percent less than the crop of 1932-33 and about 14 percent less than average for the preceding 4 years. The marketing outlook as compared with last year seems favorable.

World production of grapefruit is expected to continue its rapid increase for at least a decade. Increasing competition may be expected in the export markets. However, the per capita consumption of grapefruit outside the United States is very small and any appreciable increase in per capita consumption would provide an outlet for a large volume of shipments.

An average of about 7 percent of the United States grapefruit crop is exported. The United Kingdom and Canada together take about 95 percent of the exports, which consist mostly of medium- to small-sized fruit. Increasing supplies of Palestine grapefruit in European markets have greatly increased the competition on these markets from December to March, and tend to hold prices at a low level. To meet this competition successfully United States exports must be of good quality and the volume must be in accordance with the needs of the markets. Puerto Rico and Jamaica anticipate average volume of production, whereas the crop of the Isle of Pines will be short because of hurricane damage. The Palestine crop is expected to be somewhat larger than last season. All these countries ship during the winter season. Encouraging factors in the immediate export situation are smaller world supplies and the improved position of foreign exchange.

LEMONS

Lemon production in the United States is almost entirely in California. The bearing acreage has not changed much during the last decade but in the last few years there has been a marked increase in planting. Of the 46,000 acres in lemons exclusive of 1933 plantings, about 11 percent was not of bearing age. Production increased 60 percent from the period 1921-23 to 1930-32 in spite of the fact that there has not been much change in bearing acreage. No further increase in average production is expected for a few years, after which some increase may be anticipated.

Imports of lemons have declined in recent years under the tariff of 2½ cents a pound, and are now of relatively small importance. The domestic outlets for California lemons have been correspondingly increased. But production has reached the point at which, in average years, a considerable part of the crop cannot be marketed as fresh fruit.

The United States exports, of which Canada takes about three fourths, average only about 5 percent of the commercial crop.

Prices to California lemon growers averaged 26 percent higher in the 1932-33 season than in the previous season, when the crop was 11 percent larger.

APPLES

For 20 years or more economic factors have been forcing an adjustment of the apple industry until at the beginning of the present business depression (1929) the industry was generally better equipped for the efficient production of apples than at any time in recent years. On the whole it had a relatively large proportion of the better varieties, production was almost as heavy as 20 years earlier when tree numbers were twice as great, and there were indications that with reasonable care of orchards and moderate tree replacements the orchards would continue to produce for many years an abundance of apples for domestic consumption and a surplus for export.

The depression has tended to speed up some of the adjustments that were already under way at the beginning of the depression. Tree plantings continued to decrease and those of the last 2 or 3 years have been exceptionally light; many trees of odd varieties have been removed; replacements have been made with trees of the more popular varieties; and there has been a continuation of the shift from farm to commercial orchards with better locations. In addition, accumulated financial burdens and low prices of fruit have caused many orchards to be neglected. These adjustments in the physical make-up of orchards, and the curtailment of production expenditures, have reduced the bearing capacity of the apple industry temporarily at least. Although there is no way of measuring the extent of this reduction, it is generally believed that with increased business activity and with increased purchasing power of the orchardists, most of the commercial orchards can be rather quickly brought back to normal bearing capacity. However, during recent years the codling moth—the most serious insect pest of apples—has become increasingly difficult to control in practically all important producing centers. This is resulting in increased expense for spraying and other control practices in well-handled orchards, and an increased percentage of defective fruit from many orchards. Present indications are that apple growers will have to increase their efforts in codling-moth control, as well as provide for the chemical removal of the spray residue from the fruit if satisfactory market apples are to be produced.

Another factor in the apple outlook is the general fruit situation. According to available data the production of oranges, grapefruit, peaches, pears, and grapes, together with the imports of bananas, increased 50 percent from 1919 to 1932 and amounted to 7,423,000 tons in 1932. The Hawaiian pineapple pack nearly doubled from 1924 to 1931, and for the latter year amounted to about 12,700,000 cases. The 1933 pack is estimated at 8,000,000 cases, compared with about 5,064,000 cases in 1932. Generally speaking, large supplies of fruits that compete with apples may be expected to continue in our markets. This, with efforts of European countries to modernize their fruit industries and to erect trade barriers, indicates a continuation of difficulties in marketing large apple crops.

From 1910 to 1925 there was a net decrease of 79,000,000 apple trees in the United States. From 1925 to 1930 there was another decrease of 21,000,000 trees, making a total decrease of 100,000,000 trees, or 46 percent in the 20-year period, 1910–30. Since 1930, tree removals probably have exceeded tree plantings. But in spite of tree removals, and orchard neglect since 1929, production during the last 5 years (1929–33) has averaged only 11 percent less than the average for the period 1900–13, and only about 24 percent less than for the period of high production, 1914–18. These smaller declines in production as compared with tree numbers are due primarily to the shift that has taken place from farm to commercial orchards with better locations, and to the increasing bearing capacity of many trees as they have approached or reached full bearing age. This trend is manifest in the average yield per tree which increased from 1.2 bushels per bearing tree in the period 1908–12 to an average of 1.9 bushels during the period 1928–31.

A noticeable shift to the more popular and better paying varieties has occurred during and since the World War, resulting in many relatively young orchards that have not yet reached full bearing capacity. An apple-tree survey for 41 States indicates that in 1928, 25 to 30 percent of the trees in commercial orchards were under 9 years of age and that 65 to 70 percent were less than 19 years old. According to the census of 1930, about 24 percent of all apple trees in the United States were not of bearing age at that time. Reports from nurserymen indicate that since 1930, and especially during the 1932 and 1933 planting

seasons, sales of apple stock for planting have been very light. As yet there has been no shortage of apples in years of favorable growing conditions, nor is there any immediate prospect for a shortage. In fact, commercial production, which may be more significant than total production, increased for several years to a peak of 39,000,000 barrels in the very favorable growing season of 1926. In the last five seasons (1929-33) it has averaged somewhat higher than for the 5 years previous to 1926, and the 1931 commercial crop was the fourth largest on record. During the four depression years, 1930-33, commercial apple production has averaged only 4 percent less than during the previous 4 years. It is believed that with moderate future planting, the number of young trees in commercial orchards would maintain commercial production at a fairly high level for several years, under conditions of average orchard care.

A relatively large proportion of past increases in commercial production has been of the more popular varieties. The apple-tree survey of 1928 indicated that the 10 most important apple varieties, in terms of number of trees, in order of importance were: Delicious, Winesap, Jonathan, Baldwin, Stayman Winesap, Ben Davis, Rome Beauty, York Imperial, McIntosh, and Grimes Golden. These 10 varieties constituted about 60 percent of the total trees in commercial orchards. Plantings of Delicious trees, 73 percent of which were under 14 years of age in 1928, point to increasing supplies of this variety for several years. Production of the McIntosh and the Stayman Winesap varieties is expected to increase, since 60 percent of the trees of these two varieties were under 14 years old in 1928. Another group of varieties in which there are prospects for increased production is composed of Winesap, Jonathan, and Grimes Golden. In 1928, 43 percent of the trees of these three varieties were under 14 years of age. The survey indicated that only moderate plantings of Baldwin, Rome Beauty, and York Imperial were being made, and that plantings of Ben Davis and many of the less popular varieties had been declining for several years. Sales of nursery stock indicate that the relatively light plantings that have been made since 1930 are composed primarily of Stayman Winesap, Delicious, McIntosh, and Jonathan, and to a lesser extent, of Rome Beauty, Winesap, Grimes Golden, York Imperial, Baldwin, and a few other varieties.

WESTERN STATES

About 20 years ago, the 11 Pacific Coast and Mountain States produced 19,000,000 bushels of apples per year, whereas they now produce an average of about 56,000,000 bushels annually, an increase of 195 percent. At the same time the number of bearing trees increased 10 percent, and, largely because of increasing age, yield per bearing tree increased from an average of 1.5 bushels to about 4.3 bushels. In these Western States production now is apparently close to its peak for the present cycle. In the Pacific Coast States as a group, a very small percentage of the trees are yet to come into bearing and production as a whole is being fairly well maintained by tree resets and by an increase in producing capacity of trees due to an increase in their age. In the Rocky Mountain States as a whole production is declining.

Plantings in the western apple States in general have been very light in recent years. Commercial orchards in the better districts are generally well cared for but in the poorer fruit districts neglect has been noticeable. The few plantings that are being made are confined largely to Delicious, Winesap, and Jonathan. Rome Beauty is being set to some extent as a filler. The limited plantings in California are confined largely to Delicious, White Pearmain, and Yellow Newtown. In general, the less profitable varieties in the region are being gradually removed. For example, in north-central Washington (including the Wenatchee Valley) and in the Yakima district, a relatively large proportion of the trees removed in 1932 were composed of such stable varieties as Esopus Spitzenberg, Stayman Winesap, and Winter Banana, as well as other less-desirable varieties. In these districts, production of Winesap has probably reached a stationary level, production of the Delicious will continue to increase for several years, and production of Rome Beauty is expected to show a slight increase.

Low prices for apples have increased the difficulty of western growers in marketing. Transportation charges for apples from the Northwest to distant domestic markets consume a large part of apple values, making it very difficult in times of low prices for western growers to compete successfully with producers near the large consuming centers.

CENTRAL STATES

The Central States as a whole now contain about 43 percent of the total number of apple trees in the United States and produce about 24 percent of the apples. From 1910 to 1930 the number of trees decreased about 60 percent and production decreased 42 percent. A large part of the decrease in tree numbers came in the first half of the period, 1910-30, and many of the orchards now remaining are well supplied with young trees, many of which were planted during the last 15 years. According to census figures nearly one third of the trees in these States had not reached bearing age in 1930 and according to a tree survey made in 1928 about 40 percent of the trees in commercial orchards of the region were under 9 years of age.

Many of the tree removals in the Central States between 1910 and 1930 were of odd and unpopular varieties. The more recent plantings have been of the more popular varieties such as the Delicious, Winesap, Jonathan, Stayman, Winesap, and Yellow Transparent. It is believed that the newer orchards of the region are more favorably located than were many of the early plantings, and that in the long run the past rate of tree mortality may be reduced. The removal of old trees continues in the region. Recent plantings have been light, and on the whole, there is no evidence at this time of material contraction or expansion of commercial orchards.

EASTERN STATES

In the Eastern States, which include the New England, the Middle Atlantic, and the South Atlantic States, the number of apple trees declined about 24 percent from 1910 to 1930, and those of bearing age decreased about 17 percent. Much of this decrease occurred in farm orchards and in poorly located commercial orchards. At the same time, production fell off about 17 percent. In 1930, these Eastern States had about 44 percent of all apple trees in the United States and produced about 42 percent of all the apples. The tree survey of 1928 showed that approximately 64 percent of the apple trees in commercial orchards in the Eastern States were under 19 years of age, and the census figures of 1930 indicated that 20 percent were yet to come into bearing. Shortly after the World War, there was considerable planting of some of the more popular varieties. In the region as a whole recent plantings have been light and removals have continued at a normal rate, but there are indications that many of the orchards that have not been generally profitable are receiving less-than-average care. The nearness to large consuming centers of many apple districts of the Eastern States is an encouraging factor to eastern producers, especially under present economic conditions.

PRODUCTION AND PRICES

On October 1, the Crop Reporting Board estimated the 1933 total apple crop of the United States at 147,447,000 bushels, which compares with 140,775,000 bushels produced in 1932, and 168,773,000 bushels, the average for the 5 years, 1926-30. In the western boxed-apple States the 1933 crop is forecast at 52,098,000 bushels, or about 1,600,000 bushels under that of 1932 and 6,000,000 bushels below the average for 1926-30. In the Central and Eastern States the production is forecast at 95,349,000 bushels, or about 8,300,000 bushels greater than that of 1932, but about 15,300,000 bushels less than the average for the 5 years, 1926-30.

The commercial crop in the Western States, at 37,698,000 bushels, is about 2,000,000 bushels under that of 1932, and in the Eastern States, at 45,015,000 bushels, it is about 1,155,000 bushels below the commercial production of 1932.

With these slightly smaller commercial supplies and somewhat improved demand conditions, apple prices this season to date have averaged higher than those for the corresponding period last year. On October 15, 1933, the United States farm price was reported at 70.3 cents per bushel compared with 57.2 cents a year ago, 58.9 cents 2 years ago and 69.2 cents, the October average price for 1910-14.

Market prices generally have been quoted slightly higher than at this time a year ago. All eastern varieties taken together averaged \$1.01 per bushel in October 1933 as against 94 cents last October. New York auction prices of western boxed Gravensteins averaged about 15 cents higher for the 1933 season than for the previous season. Western boxed Jonathan auction prices were

about 10 cents per box above those of October a year ago. Delicious and Rome Beauty auction prices were about 14 and 12 cents higher. In October 1933, western apples, in general, sold for \$1.69 per box at New York compared with \$1.55 in October 1932.

EXPORT MARKETS

The apple export outlook for the remainder of the 1933-34 season appears to be better than last season, because of the smaller supplies and the stronger demand conditions, both at home and abroad. The export situation has been strengthened materially by the improved foreign exchange position. But it does not appear that the volume of exports will be as large as in 1932-33 since the commercial crop is smaller and since France and the Netherlands have increased their import restrictions on American apples.

Exports of apples during 1932-33 season amounted to 13,800,000 bushels or about 16.1 percent of the total commercial crop. This was considerably below the average quantity shipped in the previous 5-year period, but the proportion of the commercial crop that was exported was about up to average. It can be seen, however, that with yearly exports ranging from 12 to 20 percent of the commercial crop, the export outlet is absolutely essential to the orderly marketing of the United States apple crop.

From a long-time point of view apple exporters in the United States may expect more competition from foreign supplies in the chief export markets. Canada, Italy, Australia, and New Zealand have been steadily increasing their apple exports during the last few seasons. These countries are definitely on an export basis and are giving more attention to improving the quality of their apples for export. Apples from the United States also have to meet competition from apple crops that are grown in practically all countries to which United States apples are exported. In most of these countries the governments are aiding growers to produce better fruit. In addition, there has been a tendency in foreign countries to restrict the importation of low-quality fruit. The passage of the Export Apple and Pear Act in 1933 should help materially to raise the quality of the apples exported from the United States.

PEACHES

The trend of peach production is downward in the South, in California, and in a few other important producing areas. In Colorado and Michigan the trend is upward, while in other important peach States not much change in average production is indicated. The number of trees in most States that produce fresh peaches for market does not seem excessive. In the South the number is much less than at any time in the last decade. There are enough trees in practically all areas, however, to produce large crops under favorable growing conditions. The acreage of clingstone varieties in California is still in excess of the needs of the canning industry under present demand conditions. For the country as a whole, low returns to growers in 1931 and 1932 caused serious neglect of many orchards, but higher returns in 1933 than in either of the 2 previous years may result in better care of orchards and some increase in tree plantings. Peach-tree planting has been at a low rate since 1930, and reports indicate that the quantity of nursery stock available for planting during the next year is somewhat limited.

Some adjustments are taking place in the industry. Marketing by motor-truck and at road stands and competition among commercial districts are causing shifts in production in some areas, and changes in varieties planted.

Exclusive of California, where most of the crop is used for canning and drying, peach prices to growers in the last 3 seasons have averaged about 37 percent less than in the preceding 3 seasons and about 48 percent less than in the period 1923-25. This compares with a drop of about 50 percent in the price of all groups of farm products for the last 3 years as compared with the previous 3, and about 53 percent compared with the period 1923-25.

PLANTINGS AND PRODUCTION

The South is the most important region in the production of fresh peaches for market. From 1930-33 the average production in seven Southern States (North Carolina, South Carolina, Georgia, Alabama, Tennessee, Arkansas, and Texas) amounted to about 44 percent of the total United States production

exclusive of California. Tree planting in the South, as a whole, has been very light since 1930. Low returns have discouraged many growers and made it impossible for them to buy sufficient fertilizer and spray material. Many orchards have suffered from neglect, and tree mortality has been high. However, better returns in 1933 than in the 2 previous years somewhat encouraged growers, and many orchards are being given better care. The trend in number of bearing trees in southern orchards is sharply downward.

Extremely heavy plantings, particularly in the period 1921 to 1924, resulted in very large southern peach crops in 1926, 1928, and 1931. Even with the demand conditions of 1926 and 1928 average prices to many growers were not considered profitable. The bearing acreage in the South is now considerably less than 5 years ago, and to maintain it some increase in planting would be necessary. This acreage, if well cared for, would produce large crops under favorable growing conditions but on the average would probably not produce more than the markets would readily absorb, particularly if there is an improvement in demand. But new plantings should be undertaken only after careful consideration of such factors as orchard site, varieties, competition, and financial resources to care for the orchard.

In Georgia, the leading southern peach State, production averaged 38 percent of the crop in 11 Southern States in the 4-year period ended in 1933. A survey in the fall of 1931 indicated that only 18 percent of the commercial trees in Georgia were less than 5 years old and that 33 percent were more than 9 years old. If plantings were at a uniform rate from year to year, it would probably be necessary to have from 30 to 35 percent of the trees under 5 years old at any time to prevent a decline in tree numbers. New plantings in Georgia have not been sufficient to replace trees going out of production. Many Georgia orchards have suffered from neglect, but it seems probable that the better commercial orchards in Georgia will receive more fertilizer and better care during the coming season than last season. In the decade ended in 1930 it was the general opinion that a season's shipments of at least 12,000 cars of Georgia peaches could be marketed without difficulty. It does not seem probable that the production for commercial shipment will average as high as 12,000 cars in the next few years.

In southern Georgia, comprising the district south of Macon, there probably has been little, if any, increase in tree population in the last 2 years, although most of the new plantings in Georgia have been in this district. A majority of trees set out have been of the Hiley variety. Fewer Early Rose than formerly have been planted in the southern district and relatively few Elberta trees.

In central Georgia there is evidence of a rapid decline in tree numbers. Many trees are 10 years or more of age. Large numbers of trees have been removed and others have been badly neglected in recent years. There is a tendency among the few growers in central Georgia who are planting trees to change from the Elberta to earlier-maturing varieties. A survey by the United States Peach Disease Laboratory, including 5,200,000 Georgia trees, a majority of which were in the central district, showed that about 12 percent were removed from 1932 to 1933 and that new plantings in the winter of 1932-33 were between 2 and 3 percent.

Reports indicate that in North Carolina new plantings are not fully replacing trees that are going out of production. In South Carolina new plantings are about sufficient to maintain the number of trees now in orchards. The Tennessee peach industry is distinctly on the decline. It is estimated that fully 45 percent of the trees in Tennessee have passed out of commercial production through lack of care in the last 2 or 3 years. In most other Southern States planting has been light and many orchards have suffered from lack of care.

In the region comprising Virginia, West Virginia, Pennsylvania, Maryland, Delaware, and New Jersey, plantings in recent years have been largely replacements of trees that have died. In general, the morale of growers has improved in 1933 and orchards are receiving fairly good care. Twenty-eight percent of the trees in these States were not of bearing age in 1930 and the number of trees had decreased 11 percent from 1925 to 1930. For this region as a whole, the average production has not changed greatly in the last decade.

The production trend has been slightly downward in New York State in the last 10 years. Tree numbers decreased 25 percent from 1925 to 1930. In the latter year, however, 32 percent were not of bearing age. Growers who had crops in 1933 received fairly good prices and orchards are mostly in good condition except for some damage from leaf curl in western New York.

In the North Central States, relatively few trees have been planted in recent years and for the region as a whole, no great change in average production is indicated. Orchards generally are receiving fairly good care. In 1930 about one third of the trees were under bearing age and there was only a slight decline in tree numbers from 1925 to 1930. In Michigan the potential production in 1934 is estimated to be about 15 percent greater than in 1929. In Illinois, during the last few years, new plantings have hardly been sufficient to replace trees going out of production, but growers are encouraged with 1933 returns and orchards are being well cared for.

The increasing production trend in Colorado is expected to continue although the 1933 crop was considerably smaller than the crops of the 2 preceding years. The number of trees in Colorado almost doubled from 1925 to 1930 and 42 percent had not reached bearing age in 1930. Good prices in 1933 encouraged growers and most orchards are in good condition although some have suffered from neglect during the last few years. In Utah, plantings in the last few years preceding 1933 are estimated to have been more than enough for replacement requirements. The freeze in the winter of 1932-33 killed about 10 percent of the bearing trees and weakened others, but the orchards generally are well cared for.

Very few peach trees have been planted in the three Northwestern States (Washington, Oregon, and Idaho) since 1930. In 1930 approximately one third of the trees in these States were not of bearing age. A slightly decreasing trend in tree numbers seems probable. Except for some damage from freezing, principally in Washington, orchards are in fair to good condition.

The trend in California peach production is downward. Low prices of clingstone peaches which are largely used for canning resulted in a practical cessation of planting and the removal of a large number of trees in recent years. The production of clingstone varieties is still excessive for the needs of the canning industry under present demand conditions. Under the provisions of the agricultural adjustment agreement, in 1933, the clingstone crop was not all harvested, but much higher prices than in 1932 were received by growers. The clingstone crop was estimated at 356,000 tons, of which only the no. 1's, amounting to 277,000 tons, were purchased from the growers. The purchases included about 38,000 tons which were not harvested.

CHERRIES

Production of cherries in the 12 more important commercial States (New York, Pennsylvania, Ohio, Michigan, Wisconsin, Montana, Idaho, Colorado, Utah, Washington, Oregon, and California) in 1933 was 110,998 tons, which was about 13 percent less than the large crop of 1932, almost the same as the production in 1931, but nearly 22 percent larger than the average crop for the period 1926-30. No separation of sweet and sour cherries is regularly made in the estimates of production, but the bulk of the production east of the Rocky Mountains is of sour cherries. On this basis it is estimated that for the last 3 years sour cherries averaged about 55 percent and sweets 45 percent of the total production.

The total number of trees in the 12 States increased about 16 percent from 1920 to 1930. In 1920 about 22 percent of the total trees in orchards were not of bearing age and in 1930 nearly 37 percent. Since 1930 practically all of the nonbearing trees have reached the age of bearing. Allowing for natural mortality and some loss from injury during the winter 1932-33, it is estimated that there are around 7,800,000 trees of bearing age now in orchards which would be nearly 32 percent more than in 1930. Plantings during recent years have declined; however, with the large proportion of young trees that constitute the present bearing acreage, the production trend can be expected to continue upward for at least another 2 or 3 years.

SOUR CHERRIES

No separation of sweet and sour varieties is made in the census enumeration of trees nor in the estimates of production but surveys show that the majority of the cherry trees in the States east of the Rocky Mountains are of sour varieties. About 95 percent of the trees in Michigan and fully 87 percent in New York are of sour varieties. The majority of the trees in Wisconsin, Pennsylvania, Ohio, Montana, and Colorado are of sour varieties.

In these seven States present tree numbers are sufficient to maintain an upward trend in production for at least another 5 years, provided there is no unusual abandonment or exceptional loss due to winter-kill or like causes.

Production of sour cherries is now so large that in years of average or better-than-average conditions production exceeds the quantity that can be marketed profitably.

In 1930 there were about 6,034,000 cherry trees in those seven States, 36 percent of which were not of bearing age, and 64 percent were bearing. In Colorado, in 1933, there was some loss of trees through winter injury, and tree numbers in that State are probably on the decline. Neglect of trees during the last 2 years in Wisconsin has probably resulted in sufficient injury to check the advancing potential production somewhat despite the probable increase in acreage due to new trees coming into bearing. On the other hand, Michigan, now the largest cherry-producing State in the country, had about 1,910,000 trees in commercial orchards on January 1, 1931; of these about 54 percent were nonbearing, 21 percent were between 7 and 11 years of age, 13 percent between 12 and 18 years old, 9 percent between 19 and 25, and 3 percent 26 years and over. Plantings since 1930 have been negligible. Considering the proportion of young trees in orchards and the high ratio of nonbearing to total trees, the trend of producing capacity of trees should continue upward until 1935. The greater portion of the cherry orchards in New York are relatively young and mostly well cared for.

From a marketing standpoint, the sour-cherry industry has a brighter outlook at present than it had a year ago. Following a relatively light pack in 1932, stocks of both canned and cold-pack cherries were about cleaned up during last year. Many growers in Michigan sold their crops to canners at prices contingent upon the price of canned goods. With the stock situation cleared, the situation for the current year looks much more favorable than it has for several years, in spite of the fact the 1933 pack is reported to be large.

SWEET CHERRIES

In the States producing the bulk of the sweet cherries the long-time production outlook is much the same as indicated for sour cherries. In 1930, California, Oregon, Washington, Utah, and Idaho had about 3,368,000 cherry trees, which represented an increase of about 56 percent over the number in 1920. Only about 62 percent of the trees in orchards in these five States in 1930 were then of bearing age, compared with 75 percent of the 2,156,000 trees reported in the census of 1920. Plantings since 1930 have been light in the Western States, but there is some indication that plantings of sweet cherries are being made in some Eastern States within trucking distance of large cities and in localities where retail sales can be made through roadside stands. With about 38 percent of the trees in orchards in 1930 not of bearing age, and with but little abandonment or unusual loss from weather and diseases, the trend of production may be expected to continue upward during the next 10 years.

The pack of sweet cherries in the three Pacific Coast States in 1932 of about 482,000 cases of equivalent 2½ cans was about 22 percent larger than the 394,000 cases packed in 1931, but about 43 percent less than the pack of 1929.

The pack of sweet cherries for the 1933 season amounted to about 917,000 cases or was about 90 percent larger than the pack of 1932.

PEARS

Pear production in the United States has followed a pronounced upward trend for the last 30 years, and there are now sufficient trees in bearing to maintain this increasing production for another 10 years. Production is so large that frequently more pears are produced than can be sold at prices affording a reasonable return to growers. During the last 3 years of low prices, growers in many sections have become discouraged but neglect of orchards has apparently not yet been serious enough to lead to abandonment.

The number of bearing pear trees in the United States declined from about 17,700,000 in 1900 to a low point—14,651,000 in 1920—then turned sharply upward to 16,041,000 in 1930. The 20 years of decline from 1900 to 1920 was marked by the abandonment of the small-farm orchard and by expansion in the more favorably located commercial sections. This shift in the areas of production was largely regional. In the Eastern States as a whole, tree numbers declined from the beginning of the century to the present time, while in the

Pacific Coast States new plantings made shortly after 1900 began to show in an upward trend in bearing trees between 1910 and 1920. The sharp increase in bearing trees between 1920 and 1930 is due almost entirely to the expansion in Washington, Oregon, and California. In 1910 only about 16 percent of the pear trees in the United States were located in these three States, while by 1930 these States contained over half. Since 1930, new planting as a whole has lessened; some new planting is continuing in a few areas, such as the Hood River Valley in Oregon.

No statistics are available as to the average age of pear trees now in orchards, but with such a large proportion of the present bearing acreage located in the three Pacific Coast States, where the major part of the development has occurred within the last 15 years, it would seem that the trees are relatively young. In the East the orchards are probably older, but the shift that has taken place to considerable extent in the last 20 years would indicate that the present orchards, though having reached full production, are in better locations where a relatively high average production per tree could be maintained.

Pear prices this season have recovered somewhat in both domestic and export markets from the extreme lows recorded last season. The marketing agreements that went into effect in 1933 have lifted prices for fresh winter pears. Thus far during the 1933-34 season prices have averaged somewhat higher than those that prevailed during last season.

Of the 22,500,000 bushels of pears harvested on an average in the 5-year period 1927-31, about 17,800,000 bushels were used as fresh fruit, 3,800,000 bushels were canned, and 900,000 bushels were dried. The canned fruit packed during this period averaged about 3,800,000 cases (24 no. 2½ cans) and the dried output 4,400 short tons. The output of both canned and dried pears has increased during the last decade.

Although most of the fresh pears are consumed in the United States, exports amounted to 7.6 percent of the crop, and have greater significance when it is considered that most of the exports consist of small pears which, for the most part, would otherwise find no market. Exports of canned pears account for 32 percent and dried pears 70 percent of the production of these products. Taken collectively, the quantity of pears exported in one form or another amounts to about 15.6 percent of the total pear crop.

GRAPES

The market outlook for grapes during the remainder of the 1933 season and for the next few years is much improved over that of the immediate past. Owing to the prospects of the repeal of the eighteenth amendment, it seems likely that the demand for grapes will be increased in the next few years. But there is already in the country as a whole ample acreage of wine grapes to take care of this increased demand, and it is not probable that plantings will be necessary, except for replacements, for several years to come.

In general, grapes are used in the United States for three purposes. In the order of their importance, they are grapes used for fresh table use, grapes used for the production of raisins, and grapes used for the production of wines. During the last decade the volume of grapes marketed fresh had necessarily increased considerably but the decline in purchasing power during the depression brought about a decrease in demand and drastic declines in prices. With the repeal of the eighteenth amendment in prospect, it is probable that a considerable portion of grapes heretofore marketed as fresh grapes will be diverted to the manufacture of wine.

Prior to the enactment of the eighteenth amendment, 1915-19, consumption of wines in the United States averaged about 46,000,000 gallons per year, or somewhat lower than during the pre-war years, 1910-14, when it averaged about 57,000,000 gallons. Imports from foreign countries made up from 5,000,000 to 7,000,000 gallons of these quantities. On a per capita basis consumption has never exceeded 0.67 gallon during the last 30 years and in normal times averaged about 0.6 gallon. During the period 1910-14 production of all grapes in California averaged 897,000 tons while during the recent 5 years it averaged 1,924,000 tons. Production of all grapes in the remainder of the country, however, increased about 25 percent from 1910 to 1930.

The raisin situation from a supply standpoint appears to be much more favorable than it was in 1932. The total supply of raisins available for marketing in the 1933-34 crop year is about 13 percent less than that of the previous year.

The United States has exported around 65,000 tons annually during the last few years and, with foreign production of raisins and currants no larger than in 1932, it is probable that exports of the present year will at least equal those of recent years. Although the carry-over of the raisins for the 1932 crop was unusually large, that from the present crop, assuming domestic consumption no larger than in the last year, is expected to be small. Therefore, prices to raisin growers for the 1933 crop to date have averaged considerably higher than those for the 1932 crop.

For the country as a whole the production of grapes increased steadily during the decade ended in 1928 but has since declined slightly. The 1933 crop is expected to total 1,724,000 tons, which compares with 2,204,000 tons produced in 1932 and 2,447,000 tons, the 1926-30 average. California is expected to produce 1,484,000 tons in 1933, of which 367,000 tons are classed as wine varieties, 860,000 tons as raisin grapes, and 257,000 tons as table grapes.

In general, the demand for grapes has declined sharply since 1927, although there has been some slackening in consumption for at least 10 years. In 1932 growers received only \$13.24 per ton compared with \$23 per ton in 1931. Owing to a decreased supply and much improved demand conditions, the prospects are favorable for substantially increased returns for the 1933 crops.

ACREAGE

The number of grapevines of all ages and varieties in the United States decreased about 8 percent during the 10-year period 1910-20 but increased 45 percent from 1920 to 1930. The Bureau of the Census reported that there were 366,844,000 vines of all ages in the country as a whole in 1930, of which number 342,191,000 were of bearing age and about 24,653,000 were nonbearing. Since 1930 there has been considerable neglect and some abandonment of vineyards, especially in California, and there have been practically no new plantings, so the number of vines now in vineyards has undoubtedly declined slightly.

In California, where approximately 70 percent of the grape acreage is located, the number of bearing grapevines increased steadily during the two decades ended in 1928. Since 1928 there has been a steady decline and in 1933 the bearing acreage was about 18 percent below the 1928 peak. From 1919 to 1928 the bearing acreage of all varieties in California almost doubled, rising from 322,000 to 628,000 acres, but has since declined to 517,000 acres in 1933. Since 1927 the nonbearing acreage of all varieties has dropped off sharply, from 40,700 acres to only 1,900 acres in 1933.

The California bearing acreage of wine grapes increased steadily from 97,000 acres in 1919 to 194,000 acres in 1928 but declined to 185,000 acres in 1932. It increased slightly in 1933 to 188,000 acres. Since 1927 the nonbearing acreage of wine-grape varieties has declined steadily from 33,900 acres to only 600 acres.

The California bearing acreage of raisin grapes increased from 170,000 acres in 1919 to 352,000 acres in 1928 but has since declined to 234,000 acres in 1933. Very few raisin grapes have been planted in California during the last few years. In 1927 only 2,000 acres were of nonbearing age and by 1933 it had decreased to only 200 acres.

In 1919 the bearing acreage of table grapes in California totaled 55,000 acres. It increased to 144,000 acres in 1926, but since has declined steadily to 94,000 acres in 1933. The nonbearing acreage of table-grape varieties declined from 4,800 acres in 1927 to only 1,100 acres in 1933.

In the remainder of the United States the total number of grape vines increased 39 percent from 1920 to 1930, when it was probably at a record peak of 109,000,000 vines. Of this total, about 100,000,000 were of bearing age and 9,000,000 were nonbearing. Owing to the low prices received for all varieties of grapes during the last few years and in view of the downward trend of acreage in California, it is likely that there has been some decrease in vineyards in these States since 1930.

STRAWBERRIES

Preliminary estimates indicate that the total 1934 commercial strawberry acreage for picking will be about 204,560 acres, or 2 percent above the large acreage of 1933 and about equal to the record acreage of 1928. Acreages for harvest will be increased over those of 1933 in all marketing groups of States,

except in the early marketing group, where a reduction of about 6 percent is expected. Of the acreage expected to be available for picking in 1934, it is estimated that about 54 percent will be new beds picked for the first time, 33 percent will be second-year beds, and the remaining 13 percent will be chiefly third-year beds. The average condition of all beds about October 1 was reported to be 74 percent of normal condition for that date. The relative condition of first-year, second-year, and older beds was reported at 80, 69, and 59 percent, respectively. Similar data for other years are not available.

For the country as a whole, commercial strawberry production in 1932 was the largest in several years. With production high, with the quality of southern berries generally poor, and with the buying power of consumers low, average prices for the 1932 crop were much lower than for any of the previous 15 years, and 44 percent below the average price for the 5-year period, 1927-31. Notwithstanding the relatively low prices of 1932, the strawberry acreage for picking in 1933 was increased about 4 percent above the 1932 acreage. With the relatively large acreage of 1933, and with yields only slightly below average, total production was above average and prices to growers were the lowest on record, and 12 percent below the unusually low price of 1932. Even so, plantings were again increased, bringing the acreage for picking in 1934 very close to the 204,650 acres harvested during the record season of 1928. Based on average yield per acre of the last five seasons, 1929-33, the indicated acreage for harvest in 1934 would produce a crop almost as large as the very large crops of 1928 and 1932.

In the early shipping States (Florida, Louisiana, Alabama, Mississippi, and Texas) preliminary estimates indicate 44,110 acres for picking in 1934. This is about 2,600 acres below the peak acreage of 1933, but it is the third largest acreage thus far reported. The condition of the first-year beds, which will comprise about 93 percent of the 1934 acreage, was reported to be 83 percent of normal on October 1. The condition of second-year and older beds (confined to Alabama and Mississippi) was given as 77 and 75 percent, respectively. In these early States, expansion was especially marked from 1919 to 1929, when acreage increased from 7,900 acres to 41,600 acres. Since 1929, the acreage has varied from a low of 40,500 in 1931 to a peak of 46,760 acres in 1933. Slight acreage increases in 1934 as compared with 1933 are indicated in Louisiana and Texas, but these are more than offset by decreases in Alabama, Florida, and Mississippi. Florida with 10,000 acres indicated for 1934, and Louisiana with 26,500 acres, together contribute about 83 percent of the 1934 acreage for the early States.

Strawberry prices to growers in the early States in 1933 were the lowest on record, and about 18 percent below the very low prices of 1932. Prices in 1933 were only about 50 percent of the 1927-31 average. Low prices and low yields per acre in 1933 resulted in a gross return for the total crop that was 13 percent less than the low return of 1932, and about 59 percent less than the relatively favorable return of 1931.

In the second-early States (Arkansas, Georgia, North Carolina, South Carolina, Tennessee, and Virginia) the 1934 acreage for picking is expected to be about 3 percent larger than in 1933, chiefly because of increased plantings in Arkansas. The indicated 56,230 acres in these second-early States for picking in 1934 is the largest acreage reported since 1928 and is about 85 percent larger than the very low 1931 acreage. It has been exceeded only in 1924 and 1928. The first-year, second-year, and older beds, in order, are estimated to be 37, 42, and 21 percent of the 1934 acreage, and the reported October 1 condition, 79, 70, and 58 percent, indicating a condition for all beds of 70 percent.

The 1933 yield per acre was the lowest in more than a decade, with the exception of 1930, but with a relatively large acreage, production was substantially larger than for any of the three preceding years. Prices to growers in 1933 were about 20 percent less than the previous low prices of 1932 and were about 55 percent less than the 5-year average, 1927-31.

In the intermediate States (Missouri, Kansas, Illinois, Oklahoma, Kentucky, Delaware, Maryland, and New Jersey) acreage for picking in 1934 is expected to exceed the 1933 acreage by about 4 percent and the 5-year average acreage of 1928-32 by 11 percent. A total of 53,090 acres is indicated for picking in 1934 compared with 50,960 acres in 1933. Of the 1934 acreage it is estimated that 47 percent will be first-year beds, 43 percent second-year beds, and 10 percent older beds. The October condition of all beds was reported to be 70

percent of normal; first-year beds 74 percent, second-year beds 69 percent, and older beds 52 percent of normal. All States in this group show larger acreages for 1934, except Kentucky and Maryland. Production in 1933 was materially above the 5-year average, and the average price to growers was about 27 percent less than the previous low price of 1932.

In the eastern late States (Indiana, Iowa, Michigan, New York, Ohio, Pennsylvania, and Wisconsin) the estimated acreage for picking in 1934 is 29,400 acres. This is about 3 percent larger than the 1933 acreage and is the largest acreage reported during the last 15 years. Of the 1934 acreage it is estimated that 51 percent will be first-year beds, 39 percent second-year beds, and 10 percent older beds. The October condition of first-year beds was reported to be 76 percent of normal, of second-year beds 65 percent, of older beds 57 percent, and of all beds 70 percent of normal. Production in this group of States in 1933 was 11 percent below the 1932 production but was about 10 percent above the average production for the 5-year period preceding 1932. The average price paid to growers was approximately 7 percent below the low price of 1932.

In the Pacific Coast and Mountain States (California, Washington, Oregon, and Utah) 21,730 acres are indicated for picking in 1934. This is about 12 percent above the 1933 harvested acreage but is otherwise the smallest acreage reported since 1927. It is about 5,000 acres below the 1932 peak acreage. Relatively small acreages for picking in 1934 are indicated in Oregon and Washington where winter freezes in 1932-33 were especially severe; and because of the relatively poor condition of fields, yields in 1934 are expected to be below average. Of the 1934 acreage in the Pacific Coast and Mountain States it is estimated that 41 percent will be first-year beds, 34 percent second-year beds, and 25 percent older beds. The October condition of first-year beds was reported to be 91 percent, of second-year beds 70 percent, of older beds 66 percent, and of all beds 78 percent of normal.

Most of the production in the Western States is sold to local processing plants and for consumption as fresh fruit in western markets. The 1933 crop was appreciably reduced by winter freezes which destroyed about 15 percent of the Washington and about 45 percent of the Oregon acreage. Yields per acre in these Western States, as a whole, were low in 1933, and the production of about 40,000,000 quarts was the smallest reported since 1926. With the reduced crop, prices to growers improved moderately over the low 1932 prices, but were much lower than for any other recent year.

DRY BEANS

The trade disappearance of dry beans during the 1932 crop-marketing season was about 300,000 bags less than the estimated 1933 crop and about 1,000,000 bags less than the average disappearance for the preceding 5 years. This is the second year of decrease from the maximum disappearance of over 13,000,000 bags in the 1930 and 1931 seasons. Any increase in acreage in 1934, with average yields, would result in an increased surplus and in lower prices unless consumption improves toward the level of the years 1927-31.

The indicated production of beans in 1933, based on crop conditions October 1, is 10,771,000 bags, which with the estimated carry-over in producing sections on September 1 of about 1,250,000 bags, gives a total of over 12,000,000 bags. This is about 300,000 bags more than the total supply in producing sections a year ago, when the estimated production was 10,164,000 bags and the carry-over about 1,562,000 bags; and is about 1,550,000 bags less than the average annual supply during the 5 years 1927-31. Apparently the disappearance of beans from producing sections during the 1932 crop-marketing season was about 10,475,000 bags compared with an average disappearance of 11,600,000 bags during the previous five seasons, including net imports.

The average farm price of beans in the United States followed the downward trend of agricultural commodities since September 15, 1930. At that time the average farm price was \$6.03 per 100 pounds, declining to \$2.58 per 100 pounds September 15, 1931, and \$2.04 per 100 pounds on September 15, 1932. The lowest price was reached February 15, 1933, when the average farm price for all beans was \$1.50 per 100 pounds. By August 15, 1933, prices had advanced to \$3.38 per 100 pounds, with a subsequent decline to \$2.64 per 100 pounds on October 15. These extreme low prices during the last 2 years were the lowest on record and from September 1931 to March 1933 the index of bean

prices was lower than the general index of farm prices. Burdensome carry-overs of some of the leading classes of beans have now been greatly reduced but with others the carry-over is still having a depressing effect on the price.

During the period September 1, 1931, to September 1, 1933, exports and re-exports of beans from the United States slightly exceeded imports. Prior to this time in most years imports exceeded exports by from about 400,000 bags to 1,100,000 bags. Shipments to noncontiguous United States territory, not included in these figures, increased steadily from 189,000 bags during the 1929 crop-marketing season to 407,000 bags in the 1932 season.

The production of beans by classes for the year 1933 will not be known accurately before final estimates are available in December. Indications on October 1 were that the production of pea beans this year will be about 3,250,000 bags compared with 4,632,000 bags in 1932 and 2,991,000 average for the preceding 5 years. The carry-over on September 1 of this year, however, was about 300,000 bags greater than a year ago. A large percentage of the pea-bean crop in the United States is canned as baked beans or pork and beans. The quantity of beans used by canners decreased markedly from 1929 to 1931, according to figures published by the Bureau of Foreign and Domestic Commerce.

The indicated production of Great Northern beans, which is second in importance in the white bean group to pea beans, is about 1,550,000 bags. This is about 500,000 bags more than was produced in 1932 but about 100,000 bags less than the average for the 5 years 1927-31. A carry-over of 350,000 bags brings the total supply to 1,900,000 bags compared with a total supply of 1,540,000 bags a year ago.

The heavy accumulated carry-over of Pinto beans resulting from the unusually large crops of 1929 and 1930 has practically disappeared, as a result of the unusually low production of 844,000 bags in 1932. The indicated production this year is more nearly in line with the average annual disappearance, namely, 1,600,000 bags. The price of Pinto beans during the 1932-33 marketing season ranged somewhat higher than that for leading classes of white beans. Prices for this class are still somewhat higher than those prevailing for Pea beans.

The indicated production of 850,000 bags of Lima beans plus the small carry-over on September 1 of this year of 47,000 bags results in a total supply of this class much smaller than last year or the average of the preceding 5 years. Baby Lima production was increased from 322,000 bags in 1932 to an indicated production of 570,000 bags in 1933. A carry-over of 68,000 bags on September 1 brings the total supply of this class up to 638,000 bags. The record movement or disappearance of Baby Limas occurred during the 1932 crop-marketing season when 618,000 bags disappeared into trade channels. Indications are, therefore, that there is a surplus of Baby Limas which may result in lower prices for this class.

No official estimates are available for the other classes of beans produced largely in California. Trade estimates show a total supply of Blackeyes about 50,000 bags greater than that of a year ago. This supply does not appear burdensome but is sufficient for average requirements. The production of Pink beans is estimated to be somewhat larger than in 1932, but about equal to the average for the previous 5 years. The 1933 production plus the September 1 carry-over equals the record distribution in the 1929 crop-marketing season. The 1933 production of California Small Whites is estimated to be almost double that of the 1932 crop but about the same as that of 1931. The carry-over is not heavy and the total supply is estimated to be around 440,000 bags.

PEANUTS

PRICES

October prices to growers for peanuts harvested for nuts were about double the low average prices received for the 1932 crop and may, if maintained, tend to encourage excessive plantings, especially in the Southeast and Southwest. Prices in October were only about 65 percent of the 1926-30 average but production costs in 1933 were the lowest in many years. Even if Government contracts specifically require that acreage eliminated from cotton and other crops is not to be planted to crops to be marketed, there will be much land suitable for growing peanuts that will not be restricted by contracts. Very low prices were received for the large 1931 and 1932 crops. If production

is increased in 1934 over that of 1933 it would seem that lower relative prices than those existing in October 1933 will be obtained for the 1934 crop.

October prices for the 1933 crop would have been lower except for the activities of the Agricultural Adjustment Administration. Following the large 1931 and 1932 crops, consumption of peanuts and peanut products during the 1931-32 and 1932-33 seasons was the largest in years although takings by oil mills were relatively small and confined to the lowest grades. Carry-over of farmers' stock peanuts in producing regions into the 1933-34 season was small and materially reduced from the carry-over of a year earlier.

ACREAGE

The estimated 1,387,000 acres of peanuts to be harvested for nuts in 1933 is about 13 percent below the record acreage of 1932, but is about 11 percent above the average for the 5 years, 1927-31. The October estimated yield of about 640 pounds per acre slightly exceeds the low 1932 yield but is about 11 percent below the average for the previous 5 years. The preliminary estimated production of about 890,000,000 pounds is 112,000,000 pounds under the 1932 crop, and is 11,000,000 pounds below the average for the preceding 5 years. The 1933 acreage was decreased from the 1932 figure in both the Virginia-North Carolina and the southeastern sections, but was practically the same as the 1932 acreage in the southwestern States.

Virginia, North Carolina, and Tennessee, which produce principally large-podded or Virginia-type nuts, according to preliminary estimates have an acreage nearly 23 percent below that of 1932, and the indicated 1933 production is about 24 percent or 96,000,000 pounds smaller than the 1932 crop. The carry-over of farmers' stock peanuts in all hands into the 1933-34 season was only about 50 percent of the large carry-over of a year earlier and with the reduced 1933 crop of 309,000,000 pounds, supplies of peanuts for the 1933-34 season will be about 30 percent less than were the supplies for the previous season. New-crop peanuts will average smaller in size than those produced in 1932. Because of low prices, consumption of Virginia-type peanuts during the 1932-33 season was the heaviest on record. The trend in Virginia-type peanuts is sharply toward shelled goods, peanuts in the shell now representing only about 15 percent of the total movement from this area. The present acreage is 18 percent below the average of the last 5 years, and if kept near this figure should assist in maintaining prices for large-podded varieties. Growers of Virginia-type peanuts, however, face keener competition than formerly from Spanish and southeastern runner peanuts.

In the Southeastern States of Georgia, Alabama, Florida, South Carolina, and Mississippi, where both Spanish and runner types are grown, the acreage in 1933 was reduced 13 percent from the 1932 acreage. With an estimated yield per acre slightly higher than the low 1932 yield, the October estimate is for a crop about 20,000,000 pounds smaller than that of 1932. Although the movement of shelled goods from this area during the 1932-33 season was less than for the preceding season, it was sufficient to dispose of the crop, and the carry-over into the 1933-34 season was negligible. Because of favorable weather while the peanuts were being dug and cured, the quality of the 1933 crop is superior to that of the 1932 crop. More farmers than usual placed their peanuts in storage, in the expectation of receiving higher prices. The indicated 1933 acreage of about 802,000 acres harvested for nuts in the Southeast is about 13 percent less than the record 1932 acreage, but about 11 percent above the average acreage for the 5-year period 1928-32. The large peanut crops produced during the last two seasons were absorbed at prices that have been disastrous to growers. If peanut prices are to be materially improved it seems that an acreage equal to the average of the last 5 years would be adequate.

In the Southwestern States of Texas, Oklahoma, Arkansas, and Louisiana, where Spanish-type peanuts are grown, the 1933 acreage and production show very little change from those of 1932, according to early October estimates. The carry-over in this area was extremely small. The quality of this year's crop in the Southwest appears better than that of last year. The acreage planted for nuts in 1933 in the Southwest was 17 percent above that of the last 5 years. Although the Southwest has more favorable freight rates to markets in the Southwest, Central West, and Intermountain States, it is not believed that any material increase over the 1933 level of production is desirable.

In addition to peanuts harvested for nuts, about 730,000 acres of peanuts, mostly planted with corn, were grazed or hogged off in 1930 and 1931, and about 820,000 acres in 1932. Some decrease in such acreage probably occurred in 1933 but its extent has not been estimated. The spring pig crop of 1933 was 1 or 2 percent smaller than in 1932 in the peanut-producing States and the number of sows to farrow in those States in the fall of 1933 was reported in June at about 3 percent less than the number in 1932. The southern corn crop in 1933 is about 6 percent less than it was in 1932 and about equal to the average for the years 1927-31. The grain-sorghum crop of the Southwest is about equal to last year's and is much above the average size.

TOBACCO

Supplies of practically all kinds of tobacco produced in the United States for 1933-34 are larger than they were a year earlier, indicating the need for limiting production in 1934. Whereas the small 1932 crop of 1,000,000,000 pounds was around 200,000,000 pounds below last year's consumption, the estimated 1933 crop of 1,400,000,000 pounds is about 200,000,000 pounds above consumption. Even with the increased domestic consumption indicated for recent months' supplies (production plus carry-over) of most types are still excessive. They are particularly burdensome for burley and the cigar types and are materially above normal for Maryland, fire-cured, and the dark air-cured types. The estimated 1933 crop of flue-cured is about 20 percent larger than probable consumption, but because of last year's reduction of domestic and foreign carry-over the total supply is only slightly above normal.

Tobacco consumption in the United States has increased during the last several months along with the increase of pay rolls. From May to September, 1933, the manufacture of tobacco products, as shows by reports of the Commissioner of Internal Revenue, increased over that of a year earlier for the first time in 2 years. In comparison with the corresponding period of 1932, cigarettes increased 16 percent; large cigars, 5 percent; manufactured tobacco, 4 percent; and snuff, 8 percent. However, it appears that a considerable part of this increased production has not been consumed but has gone to increase inventories.

Foreign consumption of United States types of tobacco apparently is continuing to decline, owing largely to trade restrictions and substitutions of foreign-grown tobacco. The decreased foreign carry-over of United States types and the more favorable rates of exchange for the importing countries are expected to result in some increase of exports during the current year over those of the last 2 years. But for flue-cured tobacco, at least, the higher prices now prevailing in the United States may tend to have an offsetting influence.

Before next planting time it is probable that action will be taken by the Agricultural Adjustment Administration to control the 1934 production of all United States types of tobacco. Processing taxes are now being collected on all kinds of domestic and imported tobacco, effective October 1, at rates varying from 1.7 cents to 4.2 cents per pound. It is anticipated that the bulk of the revenue from these taxes, probably around \$25,000,000, will be used for production control.

FLUE-CURED, TYPES 11, 12, 13, AND 14

Agricultural Adjustment Administration activities already have influenced prices and prospective supplies of flue-cured tobacco. Ninety-five percent of the growers have signed contracts agreeing to reduce their production in 1934 and 1935 by an amount requested by the Secretary of Agriculture not to exceed 30 percent of the average 1931-33 production. The large domestic manufacturers have entered into a marketing agreement to establish an average minimum price for an agreed minimum quantity to be purchased from the 1933 crop.

Production of United States flue-cured tobacco in 1934 must be reduced below that of 1933 if a normal balance between supply and consumption is to be restored and maintained. This conclusion is based upon the following facts: (1) Production in 1933, according to the October 1 estimate, was almost twice as large as in 1932 (705,000,000 pounds, compared with 374,000,000 pounds); (2) total world supply of these types for 1933-34 is about 4 percent larger than total supply last year, and although it is smaller than the supply for other recent years, consumption is also smaller; (3) world consumption in 1933-34 probably will be no larger than in 1932-33, as foreign displacements are expected to continue, although United States exports for 1933-34 are likely to

be above those for either of the last 2 years, when they were below foreign consumption; (4) United States and foreign carry-over of these types is smaller than a year ago by about 18 percent, but, inasmuch as the estimated 1933 production was about 100,000,000 pounds larger than estimated world consumption, carry-over next July will be increased correspondingly; (5) if production in 1934 is limited to 500,000,000 pounds, as proposed by the Agricultural Adjustment Administration, world supply of the United States types for 1934-35 (production plus world carry-over) will be about 4 percent smaller than that of the present year. A crop as large as the one in 1933 would increase supply next year and bring it further out of line with consumption.

Opening prices for the 1933 crop averaged higher than those for 1932, but the increase in price was not in proportion to the increase in the quality of tobacco. Growers expressed much dissatisfaction, and on September 1 a market holiday was declared by the Governors of North Carolina and South Carolina. Following the production adjustment campaign of the Agricultural Adjustment Administration and the negotiations with buyers upon a marketing agreement, the markets reopened September 25 with prices at higher levels. If the prices now prevailing (Nov. 3) continue throughout the remainder of the season the farmers' income from the 1933 flue-cured crop will be about two and one half times the income from the small 1932 crop, and the purchasing power of the crop in terms of the commodities farmers buy will be greater than that of any of the last 4 years and above the average for the 10-year period 1919-28.

The 1933-34 world supply of United States flue-cured tobacco, which is estimated at 1,950,000,000 pounds (green weight), is about 4 percent larger than the world supply of last year and slightly above normal, as it is a little more than three times the estimated 1933-34 domestic and foreign consumption of these types of about 600,000,000 pounds (green weight). World carry-over next July is expected to be around 100,000,000 pounds larger than that of July 1933.

The domestic consumption of flue-cured tobacco, about two thirds of which is in cigarettes and one third in manufactured tobacco, was about the same in 1932-33 as a year earlier. For the year ended June 30, 1933, cigarette manufacture was about 3 percent larger than for 1931-32, with most of the increase in May and June. Manufactured tobacco showed a 4 percent decrease. (It will be recalled that the wholesale price of the so-called "standard" brands of cigarettes was reduced last spring from \$6.85 to \$5.50 per thousand.) A part of the increased cigarette output apparently did not move into consumption but went to increase inventories. With a continued increase of consumer buying-power, domestic consumption of flue-cured products in 1933-34 may be expected to show some increase over 1932-33.

Foreign consumption of United States flue-cured tobacco, which recently has been equal to about 60 percent of the total consumption, apparently continues to decline. Production of flue-cured tobacco in foreign countries in 1933 was the largest of record (probably as much as 200,000,000 pounds), with China and Japan each reporting record acreages of the flue-cured types. Imports of flue-cured tobacco from Empire countries into the United Kingdom again were increased in 1933, and although the British consumption of tobacco products has shown some increase in 1933 over 1932, the increase has practically all been in Empire tobacco. The consumption of United States types was practically unchanged. Flue-cured exports from the United States in 1932-33 of 270,000,000 pounds were below the small exports of 1931-32 and the smallest since 1924-25. The decreased foreign carry-over of these types, together with the more favorable exchange rates for importing countries, are expected to result in some increase of exports during the current year. However, the higher flue-cured prices now prevailing in the United States may have an offsetting influence.

BURLEY, TYPE 31

The total supply of Burley tobacco for 1933-34 is estimated to be 1,150,000,000 pounds (green weight). This is about 15 percent above the record supply of last year and more than 50 percent above the 1926-30 5-year average. The 1933-34 supply is equivalent to about 4 years' consumption at present rates, whereas the usual supply is equivalent to about 2½ years of consumption. Stocks on October 1, 1933, are estimated to be around 5 percent above the record stocks a year earlier and are themselves sufficient for about 2½ years of consumption requirements. With the estimated production for 1933 exceeding probable consumption by more than 100,000,000 pounds, it is expected that stocks

next October will be equivalent to about three times annual consumption, or considerably more than a normal supply. To this will be added whatever Burley is produced in 1934.

The 1933 crop of Burley, indicated October 1 at 424,000,000 pounds, is the second largest crop ever produced. It is more than 35 percent larger than the 1932 crop, which was considerably above consumption, and nearly 50 percent larger than the 5-year average production, 1926-30. This is the fourth consecutive year that production has exceeded consumption—which was between 280,000,000 pounds and 290,000,000 pounds each year.

With the present large supply of Burley tobacco it is evident that production must be considerably below consumption for 2 years, or more, if normal relationships between supply and consumption are to be restored.

MARYLAND, TYPE 32

The 1933 production of Maryland tobacco indicated on October 1 was 17,388,000 pounds, the smallest crop in many years. The reduction from 22,750,000 pounds produced in 1932 was mainly the result of crop damage, acreage having remained unchanged. Sales of the 1932 crop to October 1, 1933, averaged approximately 20 cents per pound, compared with an average of 18.5 cents for that part of the 1931 crop sold to the same date last year. Around three fourths of the 1932 crop was sold prior to October 1, but it is reported that a large part of the remainder consists of low grades.

Only about half the total production of Maryland tobacco is consumed in the United States, chiefly in the form of cigarettes, the remainder being exported. The trend of exports has been downward in recent years. The 1923-27 5-year average exports were 15,687,000 pounds, compared with an average of 9,993,000 pounds for 1928-32. The lowest annual total was 7,550,000 pounds in 1931. Exports to October 1 this year indicate that the total for 1933 may be little, if any, above that for 1931. Stocks of Maryland tobacco are the largest on record. Holdings of the grades known as "heavy crop" and "seconds" are extremely large.

Notwithstanding the high prices received for that portion of the 1932 crop sold to date, the present low rate of exports indicates that production in 1934 must be limited to not more than the quantity produced in 1933 if the continued accumulation of stocks is to be checked.

FIRE-CURED, TYPES 21, 22, 23, AND 24

Heavy world supplies, a further curtailment of world consumption, and a continued increase of competition from foreign tobacco are the outstanding features of the outlook for United States fire-cured tobacco. World supplies for 1933-34 are estimated to be about 500,000,000 pounds (green weight), 428,000,000 pounds of which are the Kentucky-Tennessee types and 72,000,000 pounds the Virginia type. This is approximately the same as the 1932-33 supply. But the estimated world consumption of 135,000,000 pounds is 10 percent below that of the previous year and 30 percent below world consumption of 4 years ago. Thus, the 1933-34 supply is relatively larger than that of 1932-33.

The October 1 forecast of the 1933 production of all fire-cured types was 134,000,000 pounds. This is 8,000,000 pounds larger than the 1932 crop and about the same as total world consumption estimated for the current year. The Kentucky-Tennessee types showed little change from 1932, but the production of Virginia fire cured increased about 8,000,000 pounds. Total world stocks of these types October 1, 1933, are estimated to be about 330,000,000 pounds (green weight). World stocks next October are expected to show little change from that figure.

In the United States fire-cured tobacco is consumed principally in the form of snuff. The consumption of snuff during the 10-year period, 1922-31, showed only minor fluctuations. During the crop year 1932-33 consumption of snuff was about 15 percent below the 10-year average. With the domestic consumption representing only 30 percent of the world consumption of these types it is evident that this decline has had only a small influence upon the present supply situation.

Nearly 90 percent of all United States fire-cured tobacco was consumed in foreign countries prior to 1923. Since that time foreign consumption has de-

clined about 50 percent. Exports have declined by more than 50 percent, since the reduction in foreign-stock requirements made it unnecessary to replace the total quantities withdrawn for consumption. Exports for the crop year ended September 30, 1933, were the lowest on record, being about 20 percent below the previous year. Exports of the Kentucky-Tennessee types have declined most. The consumption of competing foreign tobacco in Europe is estimated to have increased from 192,000,000 pounds to 297,000,000 pounds from 1924-32.

In view of the increasing substitution of foreign tobacco and the resulting low rate of fire-cured exports from the United States, it appears that production of these types will need to continue on a restricted basis.

DARK AIR-CURED, TYPES 35, 36, AND 37

The 1934 outlook for United States dark air-cured tobacco is characterized by large domestic stocks and continued reductions of world consumption. Total world supplies of these types for the crop year beginning October 1, 1933, are estimated at 125,000,000 pounds (green weight). This is slightly smaller than the 1932-33 supply, and about 20 percent below the 5-year average, 1926-30. However, the estimated 1932-33 world consumption of 42,000,000 pounds is more than 10 percent below the annual world consumption of 2 previous years, and about 30 percent below the 5-year average. Thus, in view of the reduced rate of consumption, present supplies are relatively larger than those for other recent years. The estimated 1933 production was approximately the same as the estimated consumption, so that stocks next October are expected to show little change from the large stocks of October 1933.

The October 1 forecast of the 1933 dark air-cured crop was 42,000,000 pounds. Of this amount 21,000,000 pounds was One Sucker, 19,000,000 pounds was Green River, and nearly 2,000,000 pounds was Virginia sun cured. This estimated production is slightly larger than the production of 1932, the reduction of 2,750,000 pounds in Green River being more than offset by increases in One Sucker and Virginia sun-cured. October 1 stocks of these types in the United States and foreign countries are estimated to be about 5 percent below the level of a year ago, owing to reductions in stocks of One Sucker and Virginia sun-cured. Except for 1932, however, the stocks at present are larger than for any year since 1928.

World consumption of United States dark air-cured tobacco has declined about 50 percent during the last decade. The rate of decline has been greater in foreign countries, but with about two thirds of this tobacco used domestically, the amount of the reduction has been greater for the United States. These types are used largely in the manufacture of chewing tobacco, and, to some extent, in smoking mixtures. They are exported as both rehandled and raw leaf tobacco. Exports of these types for the 1932-33 season were at record low levels.

World consumption of United States dark air-cured tobacco is expected to continue on a relatively low level. Production of these types must be kept on a restricted basis if supplies are to be brought into line with consumption.

CIGAR-LEAF: FILLER, BINDER, AND WRAPPER TYPES

The indicated quantity of cigar-type tobacco harvested in 1933 is somewhat less than annual consumption at present rates. This is the first year since 1930 that the crop has been smaller than consumption. The production indicated on the intended 1933 acreage of cigar tobacco would have been equivalent to more than 1 year's consumption. But this was reduced materially below consumption as a result of the program of the Agricultural Adjustment Administration, and stocks at the end of 1933-34 (including old tobacco held on farms) are expected to be correspondingly smaller. On October 1, 1933, they were equivalent to about 5 years' consumption at present rates, which is more than twice the ratio between supply and consumption that prevailed before 1929.

The rate of decline in cigar consumption has been reduced in recent months. Production of cigars for the first 8 months of 1933 was only 5 percent below the same period in 1932 as compared with more than 20 percent below the first 8 months of 1931. In June, July, August, and September 1933, cigar production was larger than for the same months of 1932. This is the first time since September 1929 that cigar production for any month has been appreciably larger than for the same month of the previous year. Some of this increase went to

increase the inventories of dealers and retailers, but a considerable part of it is reported to have moved into consumption.

Use of domestic tobacco in cigar manufacture in the United States in the last 5 years has not declined as much as that from foreign countries, Puerto Rico, and the Philippines. This has been due in part to low prices prevailing for domestic cigar-leaf and to reductions in cigar prices which necessitated lower costs of manufacture. The decline in cigar consumption has been much greater for cigars that retail at more than 5 cents each than for those retailing at 5 cents or less, partly because of a mark-down in the price of cigars that formerly sold above 5 cents. The rate of decline in total cigar consumption has undoubtedly been lessened by such price reduction.

If a normal balance between supply and the present low rates of consumption is to be restored, production of cigar tobacco must continue below consumption until considerable quantities of the present large stocks have been utilized. This is particularly true for the filler and binder types.

BROOMCORN

Prospective commercial requirements for broomcorn in 1934 appear to justify some increase in acreage over that harvested in 1933. The use of broomcorn is almost entirely limited to the making of brooms and since the requirements for domestic use and export have been satisfied in recent years at about 45,000 tons, a supply much greater or smaller than this results in a decided change in the price received. The 1933 short crop, the prospects for a small carry-over, if any, at the end of the 1933 season, and present high prices for broomcorn, may result in a greater expansion of broomcorn acreage in 1934 than is justified, especially in view of the interest being shown by growers in established districts, not now producing appreciable quantities.

The present outlook, based on the condition of the crop, is for a 1933 production of approximately 28,500 tons, which is about 23 percent below that of 1932. The acreage in 1933 was about 14 percent smaller than in 1932. Owing to an unfavorable growing season, the yield per acre was the lowest in more than a decade.

The indicated stocks of only 2,500 tons as of July 1, 1933, at country shipping points and on farms were the lowest in many years. This situation, together with the 1933 short crop, is likely to result in little, if any, carry-over into 1934. Should the prospects for depleted supplies at the end of the 1933-34 season, together with higher prices this year, encourage excessive broomcorn plantings in 1934 the price to growers for next year's crop is likely to be unfavorable, since broomcorn is particularly sensitive to an over or under supply.

A total of 300,000 acres of broomcorn in 1934 (which is 11 percent greater than the indicated acreage in 1933) with the 1928-32 average yield of 292 pounds per acre, would produce a crop of approximately 44,000 tons, which is slightly less than the average annual disappearance during the last 3 years. An acreage as high as 320,000, an increase of 20 percent, might produce an excessive supply for consumption, export, and carry-over.

The established broomcorn districts can produce an ample supply of broomcorn without appreciable decreases in the acreage of other crops. As buyers usually visit only established broomcorn districts, producers of broomcorn outside of established districts, unless they have a local market, are at a material disadvantage in marketing their crop. In addition, broomcorn production requires special equipment. Unless a grower has had experience in growing and handling the crop, he is likely to produce broomcorn brush of low quality which will not command a good price.

RICE

United States supplies of rice for the 1933-34 season are about 10 percent under those of a year earlier, largely as a result of a reduction in acreage. Should domestic utilization and shipments to Puerto Rico and Hawaii be as large as last season the quantity available for export would be less than a third of the 1932-33 exports. Both domestic utilization and exports, however, may be materially affected by marketing agreements now in effect both in the Southern States and in California. Minimum prices 75 to 80 percent higher than prevailed October 1 last season have been established for rough rice in the southern area and for milled rice in California.

SOUTHERN BELT

Supplies of southern rice for the 1933-34 season are nearly 15 percent below those of 1932-33 as a result of a materially reduced crop and a carry-over less than half as large as a year ago. The 1933 southern rice crop was estimated October 1 at 8,168,000 barrels (162 pounds). This is a reduction of 1,326,000 barrels from the 1932 outturn and of 2,114,000 barrels from the 1931 harvest. The smaller crop this season is largely the result of a reduction in acreage. The area harvested in the southern belt in 1933 was 661,000 acres as against 759,000 acres in 1932 and the 5-year average (1926-30) of 843,000 acres. The carry-over of rough rice from the 1932 crop totaled approximately 142,000 barrels or less than half of the large 1931 carry-over of 302,000 barrels. Adding crop and carry-over gives a total supply of rough rice in the Southern States for the 1933-34 season of 8,310,000 barrels compared with 9,636,000 barrels the previous year and 10,376,000 barrels 2 years ago. Allowing for average farm use for seed and feed (425,000 barrels) only about 7,485,000 barrels of rough rice are available in the Southern States for market during 1933-34 or for carry-over at the close of the season. This compares with about 9,200,000 barrels in 1932-33 and 9,482,000 in 1931-32.

In addition to the rough rice carried over August 1, 1933, milled-rice stocks at mills totaled 645,539 pockets (100 pounds each) or 352,213 pockets less than August 1, 1932. With the milled-rice stocks included, rice supplies for the 1933-34 season total the equivalent of 8,956,000 barrels compared with 10,634,000 barrels for the 1932-33 season. Although more rough rice moved to mills during August and September this year than last, less rice was milled and smaller quantities of milled rice were shipped into trade channels. Rough rice milled during the first 2 months of the season totaled 999,530 barrels compared with 1,093,468 last season. Production of milled rice during August and September 1933 totaled 1,017,611 pockets against 1,168,955 for the corresponding period last season. Shipments from mills totaled 1,663,170 pockets for the 2 months compared with 2,142,885 a year ago.

CALIFORNIA

The 1933 rice crop in California promises to be about 3,005,100 bags of 100 pounds each compared with 3,168,000 bags last year and an average of 3,474,000 bags for the 5 years 1926-30. A considerable part of the California crop may be utilized in the domestic market if prices are not fixed much above present levels. If California prices are advanced by any considerable amount the spread between middle quality at Tokyo and No. 1 Brown at San Francisco may be sufficient to permit importation of Japanese rice in Hawaii and California. The spread between these grades on October 13 was about the same as the import duty on brown rice.

The 1933 Japanese rice production was 20,622,000,000 pounds compared with 18,972,000,000 pounds in 1932. A record carry-over from the 1932 crop is in prospect. Chosen has a production considerably larger than last year, but Taiwan's first crop is about 6 percent under the unusually large harvest of last season. Japanese officials are reported to be concerned over the large rice supply in Japan proper. Reports state that the Government has proposed the purchase of unhulled rice after November 1 and a rice-acreage reduction policy for 1934 for Japan proper and the colonies. Prospects are for a 1933 Chinese crop somewhat below last year's production. The Yangtze Valley area anticipates a harvest nearly as large as last year's large crop but the crop of the southern Chinese provinces and the Manchurian crop are expected to be smaller. Stocks of old rice in the Yangtze Valley are large and merchants are reported as having difficulty in competing with southern Asia rice in southern China.

The 1933 rice crops in the principal producing countries of Europe—Spain and Italy—are smaller than in 1932. The 1933 Spanish crop of 404,000,000 pounds compares with the outturn of 433,000,000 pounds in the previous season. This season's Italian crop of 818,000,000 pounds is 8.5 percent under the 894,000,000 pounds of 1932.

The southern and the California rice-marketing agreements have brought the marketing of rice in the United States under the provisions of the Agricultural Adjustment Act and therefore under the review and direction of the Secretary

of Agriculture and under the immediate direction of the two control committees. The essential features of these agreements follow:

- (1) The price of rice to producers is fixed by the Secretary of Agriculture. It may be changed at his direction.
- (2) All millers are obliged to conform to the fair-trading practices outlined in these agreements.
- (3) Surpluses are to be avoided, but should stocks inadvertently begin to accumulate, machinery is available for their prompt disposal. A fund is accumulated to pay the costs involved.
- (4) Rough rice is to be graded prior to sale in California, by an appraisal committee composed of representatives of both millers and producers. In the South, the grading of the farmer's rice by millers is subject to review by the Federal-State grading office in case of dispute.
- (5) The control of production is recognized as a prerequisite to the maintenance of prices. In California, producers have created an organization to keep production at approximately a 3,000,000-bag level. Participation in the plan is voluntary but the inducements offered to participate are thought to be sufficiently large to cause all growers to cooperate in the control program. A plan for crop control in the South is now being worked out.

FARM FAMILY LIVING

In view of the favorable prospects for further advance in the level of farm prices, the income of farm families may be expected to increase during 1934, and there are reasons for anticipating that this increase will somewhat more than offset the probable advance in the level of prices of the commodities that farmers buy.

Even if there should be considerable improvement in farmers' purchasing power, the income of a large proportion of farm families will probably remain at too low a level to permit expenditures beyond the bare essentials of living. In many homes payments on debts, taxes, and other obligations will absorb a large share of the increase in income during the coming year. Where some cash surplus is available over the immediate requirements of everyday living, it will frequently be needed for replenishing severely depleted reserves of clothing, house furnishings, and other items, and for purchasing goods and services formerly considered essential but necessarily neglected during the last few years. In most sections of the country home-production programs of emergency proportions will still be required, as a means of reducing the demands upon the cash income.

INCOME FROM FARM PRODUCTION

The downward trend of farm income that occurred from 1929 to 1932 has been checked during 1933 mainly because of the marked rise in the prices of farm products during the spring and early summer. During the 3 years following 1929, gross income from farm production declined to 43 percent of its former level. Since the farmer's costs of production fell much more slowly during this period, the balance of income left as a return for the operator's labor, capital, and management was even more sharply reduced. In 1929 this balance averaged about \$880 per farm; by the end of 1932 it had shrunk to less than one fourth of this sum. These figures, moreover, include the value of food and fuel supplied by the farm for family use, as well as the cash income from farm products sold. If this income "in kind", which has formed an increasingly important part of the farm family's income during the last few years, is deducted, the cash balance available for family maintenance shows a still more striking decline.

Corresponding figures for 1933 are not yet available, but present prospects are that gross income for the year, including rental and benefit payments made to farmers by the Agricultural Adjustment Administration, will show an increase of about 24 percent over 1932. A somewhat greater percentage gain may be expected in the balance of income available for family maintenance, since farm-production costs during 1933 have not increased as rapidly as has gross income. From March to October the average prices paid by farmers for commodities used in production advanced 12 percent. During this same period, however, average prices received by farmers for all farm products increased 40 percent over the abnormally low levels that existed last March.

Other costs of production, including wages, rent, interest, and taxes, have shown, on the average, little advance in 1933 over the preceding year.

Income estimates by States have not yet been made for 1933, but the changes in prices of various farm products and in volume of production indicate that some areas are benefiting much more than others. Probably the greatest improvement in income is occurring in the Southern States, where farmers are not only obtaining higher prices for cotton but also are receiving substantial payments for reducing the acreage of cotton this year. Income to farmers producing wheat, potatoes, tobacco, truck crops, and fruits will also be somewhat higher in 1933 than in 1932. On the other hand, incomes of those farmers who depend primarily upon receipts from livestock will probably not be greatly different in 1933 than in the preceding year, as prices of many kinds of livestock and livestock products so far during 1933 have averaged below the 1932 prices.

Income from farm production in 1934 will depend in large measure on the trend in the level of farm prices. This level will, in turn, be influenced by the stocks and production of agricultural products, by changes in consumer buying power, and by governmental action with regard to monetary and credit policies. On the whole, farm prices in 1934 are likely to average above those of 1933 and total farm income will probably also be somewhat higher.

INCOME FROM NONAGRICULTURAL SOURCES

Incomes received by farm families from sources other than agriculture will probably show a slight increase during the latter months of 1933. In a large proportion of farm homes in the more industrialized sections, especially in New England and in the Atlantic States, earnings from employment in nonagricultural industries will probably form an important part of the family income during 1934.

It is probable, however, that the number of persons desiring such employment will remain considerably in excess of the opportunities available during 1934. The blocking of the migration from farm to town of young people in search of jobs during the last 3 years and the shift of urban population back to farms has appreciably increased the number of adults in the farm population and enlarged the need for opportunities for gainful employment in nonagricultural lines.

The sale of household products through roadside stands and curb markets and through women's cooperative marketing associations will continue to form an important supplement to farm family incomes during 1934. As general recovery proceeds, some increase in the volume and value of such sales, as well as in income from the tourist trade, may be expected.

RETAIL PRICES OF COMMODITIES BOUGHT FOR FAMILY USE

The real income of farmers during 1934 will depend not only on the trend in cash income from farm production and other sources, but also on the movement of prices of commodities that farmers buy for family use. The level of retail prices for these commodities declined steadily from 1929 to March 1933, and in March were 99 percent of the 1910-14 average. But since that month the trend has been sharply upward, and by October the prices paid by farmers for commodities bought for family maintenance had returned to 119 percent of the pre-war average. Prices for all groups of commodities advanced, the most marked increases occurring in prices of food and clothing.

Several factors account for this unusual advance in the prices paid by farmers during the last 7 months. Sharp advances in the prices of many farm products since the early months of the year have been reflected in retail prices farmers must pay for food and clothing. Increases in wages in certain industries have increased prices of many consumption goods. The introduction of the processing taxes on wheat and cotton has also had some effect, although the amount of increase attributable to this cause is smaller than many consumers realize.

Although prices of farm products have shown some decline since about the middle of July, prices of commodities purchased by farmers for family use have continued to advance. Some further increase in these retail prices can probably be expected during the coming months.

This higher price level of commodities purchased for family living will offset to some extent the increase in farm incomes during 1933. The real income of farmers in this year will nevertheless be larger than in the preceding year, as

the prices paid for these commodities for 1933 as a whole will probably average only about 3 percent higher than for 1932. The amount of increase in real income in 1934 cannot be estimated at the present time, but there are reasons to believe that the trend will be upward.

ADJUSTMENTS IN FAMILY EXPENDITURES

Although most farm families will probably have more money at their disposal in 1934 than in 1933, a large proportion of them will be unable to purchase much beyond the bare essentials of living. Expenditures for food, clothing, fuel, and household supplies will continue to require about two thirds of the total cash outlay. This will be the case even in the face of greatly expanded live-at-home programs.

The kind and amount of other purchases will be affected of course by the economies of the last few years. Subnormal expenditures since 1930 have meant greatly depleted reserves of clothing and household furnishings in most farm homes, and many families have been obliged to postpone repairs to the house and to defer dental treatment and other preventive medical care. As money for family use increases, expenditures for these and other neglected items will undoubtedly be made. In many cases also, some of the additional funds will be spent for automobile operation, repair, and replacement. Probably the purchase of new household equipment and other durable consumption goods, and improvements and repairs on the house, will be among the last to receive attention. But where cash is available for repairs and improvements some farmers will doubtless buy lumber, paint, and other building materials as soon as possible, in order to anticipate a possible further rise in retail prices of these commodities.

For large numbers of families the payment of obligations to neighbors, and the payment of store bills, back taxes, interest, and other debts will have first claim on any increase in income. Demands of this nature may be of such magnitude as to allow no more free choice in expenditures in 1934 than in 1933.

ADJUSTMENTS IN BUYING

The effort of farm families to stretch the buying power of their dollars through cooperative purchasing will probably continue during 1934. Reports as of July 1, 1933, show 1,648 farmers' cooperative purchasing associations with a membership of 543,000. Although the dollar value of goods handled by these associations declined during 1933, the volume of trade was well maintained. Three fourths of these associations are reported as cooperative stores, and a large number sell home as well as farm supplies. Oil and gasoline are the principal items bought cooperatively for family use, but purchases of groceries, coal, clothing, and household textiles, through cooperative associations are increasing.

The use of barter as a means of obtaining needed goods and services without cash outlay may also be expected to continue during the coming year.

The low incomes that prevailed during last year and the rapid changes in retail prices have combined to emphasize the need for more adequate purchasing information for household buyers. The Consumers' Counsel of the Agricultural Adjustment Administration began in September to issue a biweekly Consumers' Guide to aid housewives and other consumers in understanding changes in prices of farm products and other commodities and in making wise, economical purchases. This service will be continued during the winter of 1933-34.

The interests of the consumer are also being guarded by the Consumers' Advisory Board of the National Recovery Administration. This board is advising on the codes submitted by the various industries in respect to provisions affecting price and quality of over-the-counter consumer goods; it also has committees at work on the determination of reasonable price increases, on consumer credit, and on the development, through Government aid, of improved standards for consumer goods.

Through the work of the various governmental and private agencies interested in consumer standards, some progress will undoubtedly be made during the coming year in the program for the grading and accurate labeling of foods and other commodities sold at retail.

THE HOME PRODUCTION PROGRAM

During 1933 farm families continued their efforts to be as self-sufficient as possible with respect to food. The pressure of taxes, debts, and other demands on the small amounts of available cash made this an advisable, and in many cases a necessary, procedure. Many individual families enlarged and coordinated their live-at-home programs, building on the experience of preceding years and making use of the carefully planned yearly food budgets which are now available. A marked increase has been apparent during the summer and fall in the output of farm gardens and in the quantity of food preserved by canning, drying, and brining, and by storage in cellars and pits. The home slaughtering of meat animals has been increased. The home manufacture of many food products formerly purchased has also been prevalent. The home milling of flour and cereals is an outstanding example. Most farm families have been accustomed to producing from 40 to 60 percent of their food supply, and advancing this proportion to 75 or 90 percent, as has been done in many communities, represents an emergency measure.

In addition to live-at-home planning on individual farms, cooperative-garden and food-preservation programs have been developed with relief agencies in most States. One result has been the increase in small, supervised canning centers; in one State alone 175 such centers were in operation this fall. Milling of flour and cereals is an outstanding example. Most farm families especially on large plantations using Negro labor. In some cases these efforts were supplemented by large-scale plantation gardens and centralized production of milk and pork for tenants.

Next to food production, the activities of greatest importance in most live-at-home programs are the provision of fuel and the making, remodeling, and cleaning of clothing. More of this work was done in 1933 than in previous years. Of other home-produced commodities, the most important were cleaning supplies, especially laundry soap. Comforters and rugs, manufactured in some cases from home-produced cotton and wool, were made to a considerable extent for home use and in some localities were made for sale.

Most of the work of this character (except the provision of fuel) was done, as usual, chiefly by the farm women. Under continued necessity of keeping down cash expenditures in this way, the farm woman's load was probably greater during 1933 than in some years past, notwithstanding the assistance she received from the men and older boys and girls of the family.

A live-at-home program of emergency proportions will still be required during 1934. This program will be facilitated, however, by the unusually large proportion of adults now living on farms and by the labor released by acreage reduction of cash crops. Until incomes are greatly increased, a heavy volume of home production must be expected.

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THE AGRICULTURAL OUTLOOK FOR 1935

Prepared by the Staff of the Bureau of Agricultural Economics

Assisted by Representatives of the Agricultural Adjustment Administration, the Extension Service,
 and the State agricultural colleges and extension services

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THE SCOPE OF THIS REPORT

This report presents a summary of facts bearing upon the present situation and probable developments with respect to agricultural production and marketing in 1935. The best available information has been assembled and carefully studied before preparing statements designed to help farmers in making decisions for the next year's operations. These statements were prepared by the staff of Bureau of Agricultural Economics and have been considered in detail and revised in conference with agricultural economists from the agricultural colleges, experiment stations, and extension services of the States, as well as others representing other bureaus of the Department of Agriculture, the Agricultural Adjustment Administration, and the Farm Credit Administration. The conclusion, therefore, presents a composite result of the best judgment of the representatives of these several agencies.

In the preparation of these reports, the workers had available information contained in the several reports on the drought, prepared by the Bureau, the facts regarding the results of the various adjustment and marketing agreement programs, as well as a large amount of special data assembled for use in planning these activities. The facts concerning foreign competition and demand were also more comprehensive than have been available at any time in the past, as a result of the numerous special studies which are being made on general subjects relating to foreign-trade agreements.

A section of the report, on the outlook for farm-family living, has been prepared in cooperation with representatives of the Bureau of Home Economics and the Extension Service for the last 3 years. Home economic workers from the States attended the Outlook Conference for the first time this year, there being 33 representatives present from 26 States. The Bureau of Home Economics and the Extension Service conducted a conference on farm-family living considering such phases as the income and purchasing power of farm families, adjustment of food supplies, and the home-production program.

This report presents, therefore, a summary of the outlook based upon more complete information than has heretofore been available for use in appraising the probable trends of agriculture.

This report for 1935 will be the only report issued by this Bureau until the summer of 1935, when the usual summer outlook reports will appear, if there is no change in the outlook program. This report represents the national viewpoint primarily. Most of the State agricultural colleges and extension services will prepare reports, applying particularly to conditions in their respective States, for the use of their extension workers. Any farmer who receives a copy of this, the Federal report, is urged to secure a copy of any reports that may be distributed by his State extension service for consideration in connection with his individual problems.

DOMESTIC AND FOREIGN DEMAND

The outlook for domestic demand for farm products in the first half of 1935, as indicated by the prospects for industrial production and consumers' income, is for a level slightly higher than the present level but probably not greatly different from that of the first half of 1934. The possibility of further improvement in the last half of 1935 depends primarily upon further recovery in the durable-goods industries, where the decline in employment and production during the depression was most pronounced. Any further expansion of construction either through the medium of federally sponsored projects not now a part of the program or through private construction would tend to raise the level of industrial activity somewhat higher than seems probable at the present time.

The foreign demand for American farm products is expected to be less favorable in 1935 than in 1934. A marked reduction in the exports to Germany is expected to result from the severe restrictions on German imports arising from Germany's adverse foreign-trade balance. Prospects are also less favorable in France, where deflation is still proceeding, and in China, which has been adversely affected by fluctuations in foreign-exchange rates. These unfavorable factors appear to outweigh moderate improvement in industrial activity in the United Kingdom, Canada, and Japan. Trade barriers continue to restrict agricultural exports. Bilateral trade agreements are increasing, whereby foreign countries seek to balance their trade individually with other countries. This tendency is unfavorable to the United States, which has an excess of commodity exports to important agricultural-deficit countries. The tariff-bargaining program of the United States, which adheres to the most-favored-nation treatment and is not strictly bilateral, is proceeding rapidly, but trade agreements with the countries which represent our principal markets for agricultural exports may not be concluded in time to be effective during the remainder of the 1934-35 marketing season.

With the greatly reduced supplies of most agricultural products and with some improvement in domestic consumers' purchasing power in prospect, it appears that the level of farm prices will tend to rise during the first half of 1935, despite the prospective decline in the foreign demand for American agricultural products. Since agricultural production in 1935 is likely to be larger than the unusually small production of 1934, it may be anticipated that the average level of farm-commodity prices will tend to readjust itself to the increased supplies in the later months of 1935, but the larger marketings will probably maintain the level of farm income. The relation of farm prices to nonagricultural prices may show some further improvement during the first half of 1935. The extent to which this occurs will be influenced by the extent to which price-fixing policies in many of the industrial codes are modified.

DOMESTIC DEMAND

CONSUMER INCOMES

Incomes of industrial workers as well as of farmers have shown marked improvement since the low level reached in the spring of 1933. During the first 3 months of 1933 an index of the income of workers engaged in factories and mines, and on railroads, averaged only 39 percent of the period 1924-29. The marked improvement in industrial activity during the summer of 1933 was accompanied by an increase in these pay rolls to 55 percent of the 1924-29 average in September. After declining to 51 percent in December, pay rolls again increased to 63 percent in May and have since declined to only slightly above the high point of last year. This improvement in the income of industrial workers may be attributed partly to the improvement in industrial output and partly to the increase in the average weekly wage rates. Any increase in industrial production from present levels should be accompanied by a further increase in the incomes of industrial workers.

The increased incomes of industrial workers have been supplemented by increased incomes of other consumers. Farm income during 1934, including rental and benefit payments, is expected to average 19 percent higher than in 1933. The refinancing program of the Farm Credit Administration and the Home Owners' Loan Corporation has resulted in the consolidation of a large volume of indebtedness into long-term obligations requiring, on the average, smaller annual payments for interest and the curtailment of principal, thus allowing a larger proportion of the borrower's income to be spent for current purchases. At the same time, private creditors, whose loans have been refinanced under these programs, have been placed in an improved financial condition, with increased purchasing power.

Furthermore, continued employment for a large group of consumers who were unemployed in the first half of 1933 and prior thereto, has resulted in the gradual repayment of accumulated debt obligations, which will make an increasing proportion of consumers' incomes available for current purchases.

The incomes of consumers also are being supplemented by the emergency expenditures of the Federal Government, which in 1934 will apparently total about \$3,700,000,000. Of this, approximately \$1,750,000,000 was spent in the first half of the year, and \$1,950,000,000 will be spent in the second half. These expenditures include disbursements of the Civil Works Administration, Federal Emergency Relief Administration, Federal Surplus Relief Corporation, and expenditures for public works and emergency conservation. It now appears probable that emergency expenditures will continue large throughout 1935 and will be an important factor in sustaining the demand for farm products, although the importance of this factor may decline in the latter part of the year unless the emergency programs are extended.

The increase in consumer incomes is being offset, to some extent, by higher prices of things consumers buy. In September 1934 prices paid by farmers were 26 percent higher than in March 1933 and 9 percent higher than in September 1933. The cost of living for industrial workers has also increased during the past year, particularly prices of foods. In September 1934 food prices were 9 percent, housing 4 percent, clothing prices 3 percent, and fuel prices 2 percent higher than in September 1933.

INDUSTRIAL PRODUCTION

Industrial production in the United States has been on an uptrend since March 1933, but has been marked by pronounced advances and declines. The Federal Reserve Board's index of industrial production increased from 59 percent of the 1923-25 average in March 1933 to 99 percent in July and then declined to 72 in November. During the following 6 months the index of industrial production increased to 86 percent of the base period, but from May to September declined to 71 percent. These wide fluctuations in industrial production have been much more pronounced in the industries that produce durable goods, such as iron, steel, automobiles, and building materials, than in the non-durable-goods industries which are primarily engaged in producing commodities for immediate consumption.

The production of durable goods declined much more during the period 1929-33 than did the production of nondurable goods. The index of production of

durable goods (with 1923-25=100) declined from a peak of 134 in June 1929 to 25 in August 1932. Little improvement occurred until after March 1933. Since March 1933 improvement has been more marked in the production of durable goods than in the production of nondurable goods, but the level of production in this group of industries is still unusually low relative to the level of production in the non-durable-goods industries. During the first 9 months of 1934 the level of production in the durable-goods industries was 58 percent of 1923-25. The index of production of nondurable goods declined from 120 in June 1929 to 80 in June 1932, and with the exception of a marked rise and fall in the summer of 1933 has continued slightly below the level prevailing in 1923-25. During the first 9 months of 1934 the level of production in the non-durable-goods industries was 96 percent of the 1923-25 average.

NON-DURABLE-GOODS INDUSTRIES

Under normal conditions textile production accounts for about 40 percent of the manufacturing activity in the non-durable-goods industries, paper and printing 22 percent, food 20 percent, leather 8 percent, petroleum and rubber 4 percent each, and tobacco 2 percent. Nearly all of these industries use agricultural products as raw materials, and their prospective production depends partly on the production of agricultural products and partly on the incomes of consumers.

Activity in the cotton-textile industry was unusually low during the 4 months from June to September because of enforced restrictions and labor difficulties. During this period unfilled orders increased and manufacturers' stocks of unsold goods declined, so that cotton consumption is expected to be materially higher during the fall and winter months than during the summer months. Domestic cotton consumption during the first 2 months of the 1934-35 season was nearly 400,000 bales less than a year earlier. Although consumption during the remainder of the season is expected to compare more favorably with that of last season than in the first 2 months, it is doubtful if domestic consumption for the season as a whole will exceed, and may be somewhat less than, the 5,700,000 bales consumed last season. The great rush of activity in the wool-textile industry in the summer months of 1933 has been followed by one of the longest periods of decline experienced by the industry. The declining trend of activity during the past year has been accompanied by increased consumer buying power and has probably resulted in a considerable reduction of stocks of finished goods. It thus seems probable that the consumption of raw wool in 1935 will be considerably larger than in 1934.

Production of foods, which depends largely upon the marketings of farm products, has been temporarily stimulated by the large emergency sales of cattle in the drought area. This is likely to be followed, however, by unusually low marketings of cattle during the spring and summer of 1935, and this, together with the decrease of about 33 percent in hog production in 1934, will result in a marked decline in production in the meat-packing industry during the coming year.

Flour production by merchant mills has shown only a moderate improvement during the past year as the relatively high prices of wheat, an increase in custom millings, and the loss of the export market for flour have tended to curtail production. As these same factors will continue to affect production during the coming year, the outlook is for but little improvement in activity in this industry.

Production of leather goods continued at high levels until the spring of 1934, but production of boots and shoes declined somewhat during the summer months, and is now running about 10 percent below that of a year ago. Stocks of shoes have been increased to more nearly normal proportions and a sharp increase in production such as occurred in the summer of 1933 and the spring of 1934 does not seem probable during the next few months.

A review of the outlook for production in the more important industries producing nondurable products indicates but little increase in the level of production in this group of industries in the coming year over that of last year. Consequently if there is to be any marked improvement in industrial production in 1935 it is likely to come primarily from industries that produce the more durable goods. In this group of industries iron and steel and their products normally account for about 60 percent of the total production, and building materials 25 percent, and the remaining 15 percent of production is accounted for by the nonferrous metals, shipbuilding, and coke-manufacturing industries.

The outlook for steel production can best be appraised after examining the outlook for the principal users of steel and steel products. Although the automobile, building, and railroad industries, which have been the principal users of iron and steel, have accounted for a smaller proportion of the total consumption in recent years, these industries are still major consumers of steel.

DURABLE-GOODS INDUSTRY

Total registrations of motor vehicles at the end of 1933 were about 4,700,000 in excess of registrations of new cars during the 7 years 1927-33. Doubtless some of the new cars registered within the 7-year period had been scrapped, thus indicating that at the beginning of 1934 more than 4,700,000 cars were over 7 years of age. A similar comparison indicates that over 7,500,000 cars were at least 6 years of age and that over 11,000,000 cars were at least 5 years old at the beginning of 1934. Although automobile production has increased from slightly below 1,500,000 in 1932 to about 2,000,000 in 1933 and is expected to reach about 2,800,000 in 1934, production is still running under the necessary replacements to maintain the present registration of automobiles.

The average life of automobiles has increased from 7 years in 1923 to 7½ years in 1933. In view of the large number of old cars now in use it is probable that the number of cars scrapped will increase considerably in the next few years unless the average life of automobiles is to increase very rapidly. It is thus evident that, unless the total number of cars registered is to decline sharply, there is a large potential market for automobiles in the next few years but the extent to which this market will be filled depends largely upon the level of consumer purchasing power and the ability of consumers to finance new-car purchases. Foreign sales of American automobiles have increased at even a more rapid rate in the last 2 years than have domestic sales. Any further improvement in industrial activity in many of the countries that are the major users of American automobiles should result in still further increases in exports.

Improvement in building and construction since the spring of 1933, outside of public-works construction, has been much less marked than the improvement in industrial production. During the first 9 months of 1934, the monthly average of residential construction, as measured by the value of contracts awarded, averaged only 12 percent of the monthly average during the years 1923-25. In 1933, the monthly average was 11 percent of the period 1923-25. Owing to the large amount of building financed by the Public Works Administration, the value of all contracts awarded during the first 9 months of 1934 averaged 33 percent of the monthly average of 1923-25 compared with 25 percent in 1933. Practically all of the funds available for the Public Works program had been allotted by September 1934, but not all of the approved projects have yet been started. As many of the projects started under this program will require many months for completion, the stimulus to the construction industry will continue for some time, and it is expected that expenditures for construction under auspices of the Public Works program will be somewhat larger in 1935 than in 1934.

During the autumn some stimulus has been given to residential building by the Federal Housing Administration program for home modernization and repair. The effects of this program will probably have an important bearing on the amount of residential building work done throughout 1935. In addition to this improvement program, the Federal Housing Administration is preparing to insure mortgages on homes. As this program is still in the formative stage it is impossible to appraise the amount of new building it will stimulate. In view of the unusually low level of residential construction any additional activity is of especial importance because of long-continued unemployment in this field. The progress of this program will be influenced by a continuation of the present higher level of building costs and hesitancy on the part of prospective home owners to mortgage future incomes. Another factor is the relationship between building costs and rents; building costs have declined relatively less than rents during the depression and have since advanced, while rents have risen very little.

Privately financed nonresidential building has shown little improvement since the low levels reached during the spring of 1933. The supply of office space and industrial plants still remains somewhat in excess of requirements and little improvement in this type of building is in prospect until existing facilities are more fully utilized. The building of schools and other social

institutions has also continued at low levels owing to financing difficulties and to the low levels of consumer incomes.

The expenditures of railroads during the coming year for equipment and rails will depend to a large extent upon the amount of their net railway-operating income and upon loans from the Government. On the whole, it does not seem probable that railway traffic will increase more rapidly than industrial activity during the coming year. Agricultural traffic, which comprises about 14 percent of the tonnage and more of the ton mileage, will probably be reduced from now until the beginning of the new-crop season in 1935 in view of the prospective reductions in crop and livestock marketings. The net operating revenue of railroads has been declining since the summer of 1933 and unless traffic improves it is probable that the margin between revenue from traffic and the costs of moving traffic will be further narrowed during the coming year, as the higher cost of raw materials and the increases in wage rates of railroad employees are serving to increase railroad costs. Although the amount of money available from revenue to be used for capital expenditures may be lower in the coming year than in the past year, money from the Public Works Administration will continue to be available for railroad equipment and expenditures. Most of the \$198,000,000 allotted to railroads has been contracted for by them, but as of July 15 only \$96,000,000 had been paid out to them and presumably less had actually been spent.

The outlook for the automobile, building, and railroad industries does not indicate much of an increase in the consumption of steel by these industries in the coming year as compared with the past year unless there should be a large increase in building activity. Prospects of activity in some of the industries which are relatively less important but still consume large quantities of steel such as the shipbuilding industry, the electrical industry, and the agricultural-implement industry, point to some increase in steel consumption by those industries in 1935. There has been a considerable increase in naval construction and this is expected to continue through 1935. In the electrical industry, sales of household appliances have held up fairly well during the past year but sales in the heavier industries have been restricted by the low level of expenditures by railroads and the hesitancy of public utilities to make further outlays in the face of declining net revenues. An increase in crop production in 1935 would no doubt be accompanied by a further increase in agricultural-equipment sales. On the whole, however, it seems that the output of steel will show but a moderate improvement in 1935 over that of 1934.

In September 1934 the level of production in the durable-goods industries was about equal to the low point reached in November 1933. As automobile production for 1935 gains in volume and the spring upturn in building activity gets under way the level of activity in these industries will improve, but the improvement in the spring months of 1935 may not be so marked as in the spring months of 1934, when large stocks were being accumulated. However, the level of business activity in the summer and fall months of 1935 may be maintained at more nearly that of the spring months than in the same months of 1934.

FINANCIAL CONDITIONS

Low interest rates and the large surplus reserves of commercial banks continue as favorable factors for the further expansion of bank credit. In general, money rates have been declining and, for highly liquid loans such as acceptances, commercial loans, and United States obligations, funds are ample and rates are exceptionally low. For ordinary commercial borrowing, however, the continued hesitancy on the part of the borrowers and on the part of lenders to enter into new commitments has resulted in a relatively small increase notwithstanding some decline in rates charged customers, and the fact that member-bank reserves are now approximately \$1,900,000,000 in excess of legal requirements.

Since the acute stringency of the banking holiday, there has been a substantial expansion in member-bank credit. This increase has been largely accounted for by increased purchases of United States securities, return of currency from circulation, gold imports, and Treasury disbursements of cash funds. Net demand deposits of member banks since April 1933 have been increasing at the average rate of about \$275,000,000 per month, and during this period have increased from \$13,078,000,000 to \$17,490,000,000 in August 1934, or about 34 percent; but this increase in deposits has not been accompanied by a corresponding increase in loans and investments, as more than half of this increase represents

either the accumulation of excess reserves at the Federal Reserve banks or funds used to repay indebtedness at the Federal Reserve banks. With a smaller proportion of outstanding deposits represented by loans and advances there has been a reduced rate of turn-over of such deposits. Should the volume of loans and investments be substantially expanded or should the rate of turn-over of deposits increase, or both, the volume of domestic purchasing power would be substantially increased.

Prices of high-grade bonds have registered an unusually rapid recovery in the past year, increasing from 82.6 percent of par in November 1933 to 99.3 in July 1934, as measured by one well-known index. After declining from the latter part of July to the middle of September bond prices have again started an upward trend. In the first 9 months of 1934 the total volume of new security issues amounted to about \$1,033,000,000, as compared with \$518,000,000 in the same period in 1933. The total for the current year, however, included approximately \$250,000,000 of Government-guaranteed bonds. Most of the additional offerings represent increased issues of State and municipal bonds. Although the volume in the current year is approximately twice that of the abnormally low year of 1933, it is only about one-fifth of the average amount issued in the years 1925 to 1928. Until the security markets are in a position to absorb a substantial volume of new security issues, it does not seem probable that the issuance of non-Federal securities will afford much stimulus to the heavy industries, the recovery of which is so essential to bring about a sustained improvement in industrial activity, employment, and pay rolls.

FOREIGN DEMAND

Slightly improved demand in several foreign countries appears to be outweighed by adverse developments in others, particularly Germany, where the policy of self-sufficiency is restricting important agricultural imports. As measured by industrial activity, foreign demand appears to be less in those countries, such as France and China, where currencies have not been devalued recently, and slightly better than a year ago in those countries, such as the United Kingdom, Canada, and Japan, where currencies have been devalued in relation to gold. However, our participation in the present expansion of foreign demand in the latter countries may be hampered because of curtailed production in the United States, increased production abroad, and less favorable price relationships with foreign competitive supplies. Moreover, little progress was made in 1934 toward the reduction of trade barriers.

In Germany the recent improvement in industrial activity has been due in large measure to direct governmental stimulation of production and employment. Government expenditures for public works and subsidies for house repairs have stimulated activity in the production-goods industries, but the foreign-trade balance has been allowed to fall into serious disequilibrium. This has given rise to severe restrictions on imports of agricultural products.

In France business conditions have continued to decline and unemployment to increase. Unemployment figures are slightly larger than last year for Belgium and Poland, while in Italy, the Netherlands, and Czechoslovakia there is only slightly less unemployment. In China, which is an important market for cotton and tobacco, business conditions are definitely worse.

In the United Kingdom business activity has continued to expand and unemployment to decline. Industrial production, through the first part of 1934, reached the highest level since 1930 and exceeded that of 1928. Similar improvement is reported in the Scandinavian countries. In Japan, industrial activity has assumed the proportions of a business boom. Textile production in particular has shown marked expansion, and 95 percent of our exports to Japan in 1933 consisted of cotton.

PRICE TRENDS IN FOREIGN COUNTRIES

A combined index of wholesale prices in the moneys of eight foreign countries which take about 75 percent of our agricultural exports was practically unchanged during the year ended last August at about 69 percent of the 1926 average. Wholesale prices in France, Italy, Belgium, Switzerland, and Poland have declined further during the past year to the lowest levels of recent years. Prices in the Netherlands, Austria, Hungary, and Yugoslavia are but slightly higher than a year ago. Prices in Japan have declined a little during the past year, whereas prices in the British Empire generally, and in Egypt particularly,

have increased somewhat. Prices in Germany, Argentina, and the Scandinavian countries have increased substantially since a year ago.

Monetary exchange rates of the major commercial nations outside of the so-called "gold block" have declined only slightly in relation to gold during the past year in contrast to numerous marked declines in 1933. In the year ended August 1934 the decline in exchange rates in relation to gold parity amounted to about 5 percent or less in the United States, British Empire, Scandinavia, Japan, Brazil, and Argentina (official rate). In September, however, the English pound declined somewhat in relation to gold and the dollar. Chinese exchange declined from January to May 1934, but has since more than regained this loss with the rise in silver prices.

TRADE-BARRIER TENDENCIES

In the *Agricultural Outlook Report* for 1934 reference was made to certain tendencies in the field of international trade barriers which pointed to the maintenance of severe restrictions on the movement of goods in international trade. These tendencies included the continued growth of economic nationalism, the development of regional arrangements between groups of countries closely associated economically and politically, and a disposition on the part of some countries to increase their barriers to imports in anticipation of future tariff-bargaining programs. The lack of stability in foreign exchange was pointed to as a further obstacle to trade-barrier reductions.

These tendencies and obstacles continue to operate in the direction of the maintenance of high import duties and severe quantitative restrictions on imports in all parts of the world. There have been few developments in 1934 that point definitely toward trade-barrier reductions, whereas there have been many specific instances of increases in the handicap to trade. Prominent among the latter may be mentioned the development of the German policy of governmental control over imports. The exhaustion of foreign-exchange holdings and gold reserves has brought the German Government to a position at which it is forced to hold imports down to the level of its export possibilities. Germany's export possibilities appear to be slowly but steadily dwindling because of relatively high internal prices, its curtailment of imports from countries important as export outlets, and the continued maintenance of high trade barriers in the foreign markets for German goods.

The German policy of restricting imports is particularly onerous with respect to American exports since the balance of trade between the United States and Germany has become increasingly unfavorable to the latter country during the last year. The result is that imports from the United States, in particular, are being greatly reduced and, to the fullest extent possible, such imports are being diverted to other countries which offer better opportunities as markets for German goods.

The movement toward increased import duties in China, which has become an important outlet for certain American agricultural products, furnishes another example of increased trade restrictions. During the last year China increased its duty on raw cotton, partly for the purpose of increasing its revenue but also for the purpose of providing additional protection for its cotton-growing industry. The duty on cotton now amounts to the equivalent of 1½ cents per pound, compared with the former small revenue duty of about one-half cent in December 1933. China also increased its duty on wheat flour to 73 cents per barrel, which has proven to be a serious impediment to exports of wheat flour into that country.

The development of barter arrangements between countries gained new impetus during the year. Although this tendency has been noticeable since the beginning of the depression, it has been most evident during 1934. Many instances can be cited of arrangements between governments looking toward the direct exchange of goods, thus relieving the acute exchange situation in certain important European countries. A few specific instances will best illustrate this development. Poland has entered into an agreement with Egypt to use a certain percentage of Egyptian cotton in exchange for Egypt's agreement to buy Polish goods, including cotton textiles. Germany has arranged for an exchange of soybeans from Japan to be compensated by the purchase of German fertilizers and other products. Arrangements of this sort between Germany, Czechoslovakia, and Austria, with the agricultural-surplus countries of the Danube Basin are numerous. Austria and Hungary, in particular, have made and continue to make many such arrangements.

The tendency toward bilateral trade arrangements, in connection with which many countries are setting out deliberately to balance trade individually with other countries, if continued, will work to the great disadvantage of American export trade. This is true because the United States has customarily had a large excess of merchandise exports to important agricultural deficit countries. In fact, the only important exception to this rule is Japan. Obviously it will be impossible for most countries to arrive at anything like a balance of trade bilaterally with other individual countries, but it is clear that the United States stands to lose perhaps more than any other agricultural-exporting country from such a tendency. It is increasingly clear that the most effective means of combating such developments, so far as the United States is concerned, would be to explore every means of increasing the importation of goods from foreign countries which in the past have offered important outlets for our agricultural products.

The one significant development looking toward relaxation in world-trade barriers is found in the tariff-bargaining program of the United States. The work on foreign trade agreements is being vigorously prosecuted. At the present time, announcements have been made of intentions to enter into negotiations with 12 foreign countries. From the viewpoint of American agricultural exports it is significant that none of these countries is a major outlet for agricultural products. Consideration is being given to the possibilities of agreements with such countries but it does not appear probable that trade agreements that would result in a substantial expansion in our agricultural exports are likely to be concluded with the major agricultural-deficit countries in time to be effective during the remainder of the 1934-35 marketing season. It is too early to forecast the possibilities of concluding arrangements favorably affecting the marketing of the 1935 crops. The most that can be said at present is that experience to date indicates that progress in opening outlets through the tariff-bargaining program will be slow.

PRICES

During the past year wholesale prices of the several groups of commodities have moved into a more balanced relationship. Prices of agricultural products have advanced relative to the prices of nonagricultural products. At the same time prices of many other commodities which had advanced markedly during 1933, notably textiles and leather products, have declined in 1934.

Wholesale prices in the United States increased from 104 percent of the 1910-14 average in October 1933 to about 112 percent in late October this year. This rise has been accounted for almost wholly by advances in prices of farm products and foods, as prices of nonagricultural products combined (other than farm and food) have been practically unchanged since October 1933. Wholesale prices of farm products, which declined further than prices of other groups of commodities prior to March 1933, have since had the greatest advance. The disparity between prices of farm products and non-farm products has thus been markedly reduced, especially since December 1933. Despite the marked advance from the low point of the depression, prices of farm products in percentage of the pre-war average are still the lowest of any specified group of products whereas prices of building materials, house furnishings, fuel, and lighting products, are the highest.

From April 1933 to the end of January 1934, when the dollar was revalued, there was a substantial difference in the rate of increase in the prices of those export and import commodities which are influenced by international market conditions as contrasted with the increase in the prices of commodities which are influenced primarily by domestic conditions. During this period, the prices of international commodities fluctuated closely with the foreign-exchange value of the dollar, and at the time the dollar was revalued were approximately 70 percent above the level of March and the first half of April 1933. The index of the Bureau of Labor Statistics (which, although including these international commodities, is heavily weighted with domestic commodities, including a large proportion of finished goods) advanced only about 25 percent during the same period. Since February 1934 there has been a further advance in average prices of international commodities. The Bureau of Labor Statistics index has also advanced slightly owing chiefly to the rise in prices of farm products occasioned by reduced supplies.

There still continues a wide disparity between the prices of international and domestic commodities in the United States. This situation is of particular

interest to agricultural producers because the relatively higher prices for international commodities, such as cotton and wheat, may afford an additional stimulus to their production in countries that have depreciated currencies. Although the rise in prices of many of these commodities only restores the relationship that existed between such commodities and the wholesale price level prior to the beginning of this depression, the difference that exists between these prices will be an important factor in stimulating production and/or in reducing consumption of some of the export and import commodities.

Judging from the experience of European countries in the post-war period, it may be anticipated that a considerable disparity will continue to exist for a long period after revaluation. As long as this disparity continues, the higher level of prices for international commodities tends, in varying degree (1) to encourage the production of export commodities, (2) to discourage the consumption of imported commodities, and (3) to encourage the substitution of domestic for imported goods. These forces tend to bring about a relative increase in world supplies of international commodities. Such increased supplies tend to lower prices of international commodities relative to domestic commodities and are factors tending toward a reduction of the disparity between the two groups of prices.

The forces that tend toward the elimination of this disparity through a rise in domestic prices are usually more prompt in bringing about a readjustment than are the forces tending toward a reduction in international commodity prices. Usually the devaluation of a nation's currency is effective in raising domestic prices through (1) increasing the prices to producers of export food products and raw materials, (2) increasing industrial production for the export market as a result of the competitive advantage accruing to manufacturers of finished and semifinished goods through a reduction in gold prices, and (3) increasing the incomes, through higher prices and increased output, of producers of domestic goods that can be substituted for imported commodities.

In the post-war period, when European currencies were depreciating, there was a continued upward movement of industrial production, stimulated by the competitive advantage in the export field, which tended to remove much of the price disparity between the two groups of prices. At present, however, import quotas and other trade barriers are so restricting our export outlets for manufactures that the usual stimulus from a devalued currency has not been fully effective in increasing domestic purchasing power through increased industrial production for export. At the same time, producers, particularly agricultural producers, of export commodities have utilized a considerable portion of their increased income for the repayment of debts and accumulated obligations. Such repayments have not been offset fully by new advances, and as a consequence the higher income to export producers has not been reflected in a corresponding increase in the demand for domestic commodities. Urban consumer incomes have also been affected by the higher prices paid for imported commodities. Inasmuch as the United States has imported approximately as much as it has exported since April 1933, much of the stimulus that comes from currency devaluation has been absent.

Any change in foreign monetary policies during 1935 would be a factor affecting the demand for agricultural products. Should the currencies of the present gold-standard countries decline moderately, relative to the dollar, such developments, insofar as they result in increased industrial activity within those countries, will tend to increase the world demand for foodstuffs and raw materials. With the present rigid import quotas and rationing of foreign exchange, increased trade balances would make more foreign-exchange funds available for the purchasing of imports, and would tend to offset, at least temporarily, the higher currency prices of imported commodities in those countries depreciating their currencies. If the currencies of countries competing with this country in the field of industrial exports are depreciated materially below the exchange values existing immediately prior to 1931, it would adversely affect our industrial exports and would react upon urban consumer purchasing power.

AGRICULTURAL CREDIT

Except in the worst 1934 drought areas, the credit situation in 1935 should be materially better than it has been for several years. Even in these drought areas, credit should be reasonably ample for those who have security to offer. The new as well as the older Government-sponsored credit agencies are now well equipped to supplement the private agencies. The number of drought-

stricken farmers without security for loans, other than their prospective crops, will doubtless be exceptionally large. These farmers will require special consideration if their credit needs are to be met.

For the country as a whole, the demand for production credit in 1935 probably will exceed somewhat the demand in 1934. The prices of goods purchased by farmers may be expected to be somewhat higher than last season, particularly when prices for feed and seed are included. The accumulated needs for equipment, repairs, and improvements are exceptionally great. Manufacturers of fertilizer anticipate slightly larger sales on credit in 1935 than in 1934. These manufacturers also expect that their lines of credit will average materially higher for the coming year. Although the farmers, outside of the worst drought areas, will enter the 1935 season in a cash position materially improved over that of a year earlier, their demand for short-term credit is likely to be relatively large.

Feed shortages of farmers in some of the more important feeding sections will result in their placing fewer cattle than normally in their feed lots during the coming winter. The decreased feeding in these sections will be offset to a considerable extent by increased feeding activities in other areas. The meager 1934 crops in the drought areas will mean, on the other hand, an increased demand for credit during the coming winter for feed to maintain breeding herds and for credit to produce the 1935 crop. Should there be an ample supply of feed next fall in these 1934 drought areas, there will doubtless be a substantial demand for credit to restock the farms and ranges.

The demand for farm-mortgage credit probably will be somewhat smaller in 1935 than it was in 1934. Through the Farm Credit Administration a large amount of refinancing of farm mortgages has already taken place, coupled with a substantial amount of funding of unwieldy short-term personal and collateral debts into long-term mortgage debts. Much of the land that is most likely to seek an early market is held by loan agencies as the result of foreclosures, and such agencies may be expected, in the main, themselves to finance the sale of their farms. Such sales would add, therefore, to the outstanding mortgage debt but without calling for any large amount of advances of new loanable funds.

ADJUSTMENT PAYMENTS

The need of farmers for credit will undoubtedly be affected materially by the agricultural-adjustment payments. The following payments are expected to be made during the remaining months of 1934 and the early part of 1935.

About \$72,500,000 is now being distributed to cotton growers. With the continuation of some form of cotton-adjustment program, as recently announced, additional sums will be paid to cotton growers as rental or benefit payments during 1935. Information on the nature and probable amount of these payments must await further development of the program.

On wheat, the second payment for the 1933 crop and the first payment for the 1934 crop, now being disbursed, will amount to a total of approximately \$100,000,000. The smaller second payment for 1934, following proof of reduction for 1935, will probably be disbursed prior to next year's harvest.

The corn-and-hog payments up to December 1, 1934, will amount to approximately \$200,000,000. Additional corn-and-hog payments on 1934 contracts, in the amount of about \$130,000,000, are expected to be made prior to May 1935.

Payments to tobacco growers, it is estimated, will be about as follows: Last quarter of 1934, \$11,652,000; first quarter of 1935, \$12,605,000; second quarter of 1935, \$8,956,000; and third quarter of 1935, \$2,980,000.

COUNTRY BANKS

The substantial improvement in the condition of country banks, excluding those in the most unfortunate drought areas, should result in more bank credit being available to farmers in 1935. The deposits of country banks are substantially higher than a year ago. Total time and demand deposits of licensed member banks of the Federal Reserve System, located in places of less than 15,000 population in 20 of the leading agricultural States, rose 21.2 percent from September 1933 to September 1934. The rise in the Cotton Belt States was 28.1 percent and in the Corn Belt States 33.5 percent. The number of licensed banks on September 26, 1934, was 15,154 as against 14,163 on October 25, 1933—an increase of 7 percent.

Licensed country banks that are members of the Federal Reserve System held cash reserves and United States securities on June 30, 1934, in the abnormally high proportion of 44 percent of their deposits. With the improvement that has occurred in farm income, except in areas most severely affected by the drought, the credit status of farmers has been materially raised. These conditions, together with a change in the attitude of bankers toward local loans, suggest that in virtually all parts of the country, except the worst drought areas, a larger part of the farmers' short-term credit needs will be met by local-bank loans in 1935 than in any of the preceding 3 years.

FEDERALLY SPONSORED PRODUCTION CREDIT AGENCIES

The increased capacity of the institutions now operating under the Farm Credit Administration to supply short-term and intermediate credit is indicated by the fact that during the first 9 months of 1934 these institutions advanced such credit to a total amount of more than \$320,000,000 as compared with \$260,000,000 during the year 1933 and \$240,000,000 during 1932. Of the short-term credit extended during the first 9 months of 1934, approximately \$75,000,000 represented loans by the newly organized production-credit associations, \$110,000,000 by the regional agricultural-credit corporations, \$50,000,000 by the emergency crop- and feed-loan offices, including feed loans in drought areas, and \$85,000,000 by the Federal intermediate credit banks to private financing institutions outside the Farm Credit Administration.

Whatever may be expected in later years from rural credit unions that now may be organized under a Federal law administered by the Farm Credit Administration, or from those already existing, or those that may be organized under State laws, such institutions are not likely to become a very significant source of farm credit during 1935. Many closely knit rural communities and organized rural groups, however, may find such institutions of real value, particularly in localities that do not have satisfactory banking facilities. Hitherto credit unions in the United States, as agencies for savings and loans, have appealed primarily to groups of urban wage earners.

The Federal intermediate credit banks are continuing to offer an almost unlimited line of credit at low discount rates to the production-credit associations and other local financing institutions. By reason of the highly favorable market for their debentures these banks were able to drop their discount rate to 2 percent last May, and this rate is still in effect. Under present conditions the maximum interest rate to farmers on loans discounted with the Federal intermediate credit banks is 5 percent.

The production-credit associations now number more than 600. These associations, organized under the 12 Federal production-credit corporations, cover every agricultural county in the United States and the island of Puerto Rico. As most of the associations were not in operation until the late spring months of 1934, it is expected that the amount of loans by these associations during 1935 will be materially increased.

Since the spring of 1934, the regional agricultural-credit corporations have been in process of orderly liquidation, and credit is being extended by these corporations only in connection with the liquidation of existing loans.

The number and relative importance of agricultural-credit corporations and livestock-loan companies, all but one of which are incorporated under State laws, and which discount with the intermediate credit banks, will probably decline further in 1935. In some districts, however, the reduction in number of these corporations may be offset by an increased business of those remaining in operation. The outstanding discounts on September 30, for these institutions, were \$63,000,000 in 1934, against \$71,000,000 in 1933, and \$81,000,000 in 1932.

The existing abundance of strictly short-term credit is indicated by the rates quoted in the central money markets (October 1934); one-eighth to three-sixteenths percent on acceptances, 1 percent on call loans, and three-fourths to 1 percent on commercial paper. How long these low rates will prevail is uncertain. Any appreciable expansion in bank credit occasioned by increased commercial demand would normally be expected to bring about an increase in these open-market interest rates.

CREDIT FOR COOPERATIVES

Credit for farmers' cooperative associations promises to be available in ample amounts and on favorable terms during 1935. Loans to cooperative associa-

tions by Federal farm-credit agencies during the first 9 months of 1934 amounted to nearly \$60,000,000, as compared with the same amount for the entire year of 1933, and approximately \$125,000,000 during 1932. Of the loans during 1934, nearly \$25,000,000 was extended by the Federal intermediate-credit banks, more than \$30,000,000 by the banks for cooperatives, and \$5,000,000 from the revolving fund of the Agricultural Marketing Act.

COMMODITY CREDIT CORPORATION

The amount of funds advanced to farmers by the Commodity Credit Corporation will have a substantial bearing on the credit needed from other sources for 1935. Corn loans, based upon a loanable value of 55 cents a bushel, will be made to farmers in Ohio, Indiana, Illinois, Missouri, Iowa, Minnesota, Kansas, Nebraska, South Dakota, and Colorado. It is estimated that from \$30,000,000 to \$50,000,000 of such loans will be made on 1934 corn and that approximately \$20,000,000 of loans on 1933 corn will be renewed. About \$121,000,000 was loaned on 1933 corn during last winter and spring. These loans were based on a loanable value of 45 cents a bushel.

It is estimated that approximately \$200,000,000 of new loans will be made on stored cotton by this corporation, on the basis of 12 cents a pound. Such loans on cotton of the previous crop totaled about \$101,000,000 and were made on the basis of 10 cents a pound. Part of the latter loans will be renewed or extended and may be increased to 12 cents a pound.

MORTGAGE CREDIT AGENCIES

The supply of farm-mortgage credit in 1935, as in the recent past, will be primarily dependent upon the agencies of the Farm Credit Administration. The volume of new loans made by private agencies during the year may be expected to remain relatively small. Reports from mortgage bankers indicate, however, a slightly larger volume of loans made in 1934 than in 1933 and a moderate continued increase in the supply of mortgage credit from this source. Difficulty in finding a market outlet for new mortgage loans is given as a partial explanation of the relative inactivity of these agencies. The volume of new loans made by life-insurance companies has been smaller in 1934 than in 1933.

The refinancing program of the Farm Credit Administration during the last year and a half has aided greatly in improving the farm-mortgage debt situation. The continued large volume of pending loan applications and the facilities of the Farm Credit Administration indicate that a substantial number of additional farmers will have their mortgage terms and conditions improved during the coming year.

The new farm-mortgage loans made by the Federal land banks and the Land Bank Commissioner during the period from June 1, 1933, through September 30, 1934, totaled nearly \$1,275,000,000, of which about \$525,000,000 was in the form of Commissioner loans and \$750,000,000 in the form of Federal land bank loans. Of these loans, about 70 percent was used to refinance existing mortgage debt and 20 percent to refinance short-term debt and to pay taxes. Only about 10 percent was used for purposes other than refinancing. The amount of "scale-down" of debt in connection with this refinancing has been equal to approximately one-fourth of the prior indebtedness of borrowers that obtained scale-downs, or nearly 5 percent of the total amount loaned. Hence the actual increase in farm-mortgage debt as a result of these loans does not exceed 5 percent of the prior indebtedness of the borrowers.

The Federal Farm Mortgage Corporation was established during the early months of 1934 to provide additional funds for making Commissioner loans and to provide a market for Federal land bank bonds during the period of urgent demand for refinancing of existing debt. The corporation is authorized to issue \$2,000,000,000 of bonds guaranteed as to interest and principal payments by the Federal Government. Not to exceed \$600,000,000 of these bonds, or the proceeds from their sale, may be used for making Commissioner loans to supplement the \$200,000,000 authorized in 1933 for this purpose. Approximately \$525,000,000 of Commissioner loans have been made out of the authorized total of \$800,000,000.

During the period from May 1, 1933, through September 30, 1934, the Federal land banks received more than 800,000 applications for approximately \$3,500,000,000 of Federal land bank and Commissioner loans. The monthly receipts of applications, however, have shown a marked decline during the last 12 months.

As compared with more than 75,000 applications during October 1933, the receipts of new applications had dropped to less than 25,000 per month by May 1934.

DEBT DELINQUENCIES

The reduction in the amount and the frequency of delinquent loans that has occurred during 1934 may be expected to be even more pronounced during the coming year, except in those areas that were most severely affected by the drought. The amount of Federal land bank loans upon which installments were delinquent reached a peak of over 60 percent in May 1933. By August 1934 such delinquent loans had dropped to 35 percent of the total loans outstanding. Although a part of this decrease in the percentage of delinquency was due to the large volume of recently refinanced loans, there was a decrease during the 15-month period of nearly 10 percent in the actual amount of loans with delinquent installments. This decline in delinquencies was relatively large in the Southern and Pacific States and even larger in the New England and Middle Atlantic States, but it was slight in the North Central States, especially in the areas affected by the drought. Reports from mortgage bankers indicate that delinquencies on private loans also declined slightly during the year. These bankers estimate the loans in foreclosure as approximately the same as a year ago.

TAXES AND TAX DELINQUENCIES

The farm-tax situation, like the debt situation, has recently shown some improvement. Farm real-estate taxes per acre levied in 1933 were about 14 percent less than those levied in 1932. A further decrease in these taxes of 5 to 10 percent seems probable in the 1934 levies, with the benefits to farmers from this decrease partially offset by substitute taxes. Most of the 1934 levies will be payable during the 1934-35 crop-marketing season. It is anticipated that the delinquencies of current levies will be fewer and payments on old delinquencies will be greater than during recent years. In certain localities some tax delinquencies are being settled by compromise payments. The decrease in property taxes is being accomplished in part by substitution of sales taxes or other sources of revenue, and in part by reduction in expenditures.

FARM-DEBT ADJUSTMENTS

Voluntary local committees for handling cases of overburdensome farm debts are operating in 43 States. These committees provide an informal means of adjusting debt differences between creditors and farm debtors. In all, more than 2,500 county committees have been formed, and it is estimated that these committees have aided in the adjustment of more than 30,000 farm-debt cases involving indebtedness in excess of \$200,000,000. The work of these committees has been an important factor in reducing the number of foreclosures. They have attempted to adjust excessive farm-debt cases through the scaling down of the indebtedness. In other instances, they have kept the farmer on his farm by means of an extension agreement which gives him an opportunity to improve his financial condition.

The recent amendments to the Bankruptcy Act providing for the appointment of debt-conciliation commissioners in every agricultural county, and for more liberal terms in retaining farm ownership under the jurisdiction of the bankruptcy laws, should also have some effect in reducing the number of forced dispossessions. As yet, however, the number of farmers availing themselves of these new bankruptcy privileges has not been significantly large.

FARM LABOR, EQUIPMENT, AND FERTILIZER

The price of commodities and services used in agricultural production probably will average somewhat higher in 1935 than in 1934. The sharp advances in feed and seed prices since June have raised these indexes about 34 and 36 percent, respectively, above those prevailing in the spring of 1934. Prices of feed and seed will continue to be relatively high, at least until the 1935 crops are harvested. Wage rates are expected to be higher in 1935. Farm-machinery prices also are likely to show a slight advance. Prices of equipment, supplies, and fertilizer probably will average about the same during the spring of 1935 as a year earlier, but prices of building materials may be slightly lower.

The general level of prices paid by farmers for commodities used in production and for farm wages advanced from 107 percent of the pre-war average in September 1933 to 120 percent in September 1934. Farm wages, based on the October 1 report, advanced from 86 to 93 during the same period, mainly because of the decreased supply of farm workers available. Feed prices rose sharply during last year from 90 to 122 owing to the extremely poor yields of feed crops in drought-stricken areas. Prices of seed advanced even more sharply from 111 to 162. Prices paid for farm machinery, fertilizer, and building materials advanced between 5 and 7 percent from their September 1933 levels principally as the result of increased costs of materials and labor in manufacturing industries, while costs of equipment and general supplies rose moderately from 106 to 109 percent of the 1910-14 average. All major commodities purchased by farmers during 1934 showed some increase in price over their 1933 levels.

FARM LABOR AND WAGE RATES

The supply of farm workers available for hire should remain approximately the same next year as in 1934. The demand for hired farm workers probably will be greater as a result of higher total cash incomes and prospective increases in crop production. In view of the anticipated increase in the demand for farm labor, farm-wage rates in 1935 should average higher than in 1934.

Farm-wage rates increased slightly more than seasonally during 1934, the index rising from 81 percent of pre-war on January 1 to 93 percent in October, the highest point reached since April 1932. The October 1 index was 7 points higher than a year earlier. The index rose 9 percent from January 1 to April 1, as compared with an average seasonal increase of 3 percent during the same period in the predepression years, 1925-29. From April to July the index rose only 2 percent, or half the usual seasonal amount, while from July to October twice the average seasonal advance, or 3 percent, was recorded. The weighted average index for the first 9 months of 1934 was 91, an increase of 10 points over the average for the corresponding period of 1933.

The supply of farm labor available for hire reached the high level of 127 percent of normal in January 1933. It has declined at a fairly constant rate since that time. On October 1, 1933, the farm-labor supply was reported by crop correspondents at 111 percent of normal. On October 1, 1934, the supply was only 5 percent above normal. The reduction in supply has been due to increased industrial activity since the first quarter of 1933, and the absorption of many surplus farm workers by Federal work and relief projects. Very little further decline in labor supply is anticipated for next year. The extent of decline will depend upon the degree of improvement in business activity. If business activity improves materially, surplus farm workers will be attracted to nonagricultural pursuits, because of the relatively higher level of wage rates in these industries. Closer investigation of persons on relief rolls, and the ruling that those refusing offers of work will be dropped therefrom, may result on the other hand in an increased supply of farm labor. In communities where farm wages are below a subsistence scale, however, there may be an inclination to continue families on relief.

The demand for farm labor was practically the same in October 1933 and October 1934, the index on the latter date standing at 68.5 percent of normal. In April and July the index was somewhat higher, being 69.4 in April and 70 in July. The decline since July followed, as a result of reduced labor requirements in the drought areas, and was most marked in the West South Central, West North Central, and Mountain regions. The demand for farm labor in the New England and East North Central States increased from July to October as a result of the improvement in the level of prices for farm products. Should climatic conditions be more nearly normal, requirements for farm labor throughout the United States will be greater in 1935 than in 1934. Crop-adjustment programs probably will allow some increases in acreages above those planted last year. This is also likely to result in a moderate increase in labor requirements.

BUILDING MATERIALS

Prices paid by farmers for building materials probably will average lower during the first 6 months of next year than in the first half of 1934. To date, wholesale prices of lumber have been reduced substantially from the relatively high levels prevailing in December 1933. If the usual lag between wholesale and retail prices is maintained, these reductions will not be fully reflected in

prices paid by farmers until the middle of 1935. Since lumber is the principal building material used by farmers, the cost of all materials probably will tend downward although other building-material prices are expected to show but little change from present levels. Further reductions in retail prices of all building materials may occur in the latter half of 1935 if price-maintenance provisions are modified in present lumber codes. Labor costs of building on farms are likely to show the same relative changes as farm-wage rates. Wages for carpenters and other craftsmen in rural areas, although usually higher than general farm-wage rates, ordinarily are not governed by union wage scales.

The index of prices paid by farmers for building materials advanced from 119 percent of the 1910-14 average in March 1933 to 149 percent on June 15, 1934. Wholesale prices of building materials advanced sharply from March to December 1933, but have remained practically unchanged since that time. The wholesale price of lumber advanced from 58 percent of the 1926 price level in March 1933 to 88 percent in December. The decline in the wholesale lumber price index from 88 to 82, which occurred from December 1933 to September 1934, offset advances in wholesale prices for structural steel, plumbing and heating supplies, brick and tile, cement, and wire and nails. The combined wholesale price index for building materials hence remained practically the same. From June 1934 to September, however, the index of prices farmers pay declined 4 points to 145 percent of the pre-war base. This decline followed the course of wholesale lumber prices downward, but lagged in time by approximately 6 months.

FARM MACHINERY AND EQUIPMENT

Prices paid by farmers for farm machinery are likely to advance slightly in 1935. Advances in retail prices of machinery, however, should be slight, since prices of these items declined less than those for any other group from 1929 to 1933. Higher wage rates and higher material costs were followed by an advance of about 9 percent in wholesale prices of farm machinery during the spring and summer of 1934. Retail prices have shown an increase of 3 percent during the same period. The industry appears to have an improved outlook as evidenced by large production schedules planned by several of the companies, particularly in the manufacture of tractors, and the pick-up in fall sales of equipment. It is estimated that sales in 1934 will be 55 percent greater than sales in 1933.

The demand for electricity for agricultural purposes continues to increase. The calendar year 1933 registered an increase of 4,109 farms receiving electrical service, bringing the total up to 713,558 farms as of December 31, 1933, or 11.5 percent of the total farms in the United States. During the 1932 calendar year, 6,289 farms obtaining this service were added to the previous year's total. Further improvement in farm income is likely to be accompanied by a continuation of this trend and an increased use of electrical equipment on farms.

FERTILIZER

Retail prices of mixed fertilizers in the spring of 1935 will probably be about the same as in the spring of 1934. Prices of potash salts and tankage will be lower, of mineral ammoniates about the same or somewhat lower, but prices of cottonseed meal and superphosphate will be higher than a year earlier. The advance in prices of farm products last year indicates an increase in fertilizer consumption in 1935. The increase will depend in part on the extent of the modification of present acreage-control measures of the Agricultural Adjustment Administration.

During the first 9 months of 1934 wholesale prices of fertilizer materials averaged 4 percent higher than in 1933, but prices paid by farmers for fertilizer were 11 percent higher. In 1933 wholesale prices of fertilizers were often below cost, and the margin between retail prices and cost of materials averaged very low. In 1934 under the fertilizer code a more nearly normal margin was maintained, and as a result retail prices rose more than the price of materials. With the general tendency to modify the price-fixing features in codes, it is possible that the margin might be reduced during the coming season.

Wholesale prices of potash salts were maintained at about their predepression levels from 1930 to the middle of 1934. In the third quarter of 1934, however, wholesale prices declined about 40 percent, but up to September 1934 only a part of this decline had been reflected in retail prices.

The heavy slaughter of livestock has resulted in a marked increase in the production of tannage and prices have declined sharply. Prices in August and September were less than half as high as in 1934. Cottonseed meal, however, is decidedly higher in price compared with a year ago. There have been only small changes in prices of mineral ammoniates in the last year, while superphosphate prices have increased.

THE FARM-FAMILY LIVING

[A report of a joint committee representing the Bureau of Home Economics, the Bureau of Agricultural Economics, the Agricultural Adjustment Administration, and the Extension Service]

The total cash income available to farm families for living expenses has shown a distinct advance from 1933 to 1934, and some further improvement, but of smaller magnitude, may probably be expected in 1935. This increase in income will probably be offset only in part by a rise in the average level of prices of commodities farmers buy for family use. Although some further rise in the level of food prices may be looked for during the coming year, the prices of other goods purchased for family living will probably continue at about their present levels. A small improvement, therefore, in the purchasing power of farm families may, in general, be expected. In the areas severely affected by the drought, however, cash incomes during 1935 will be extremely low, at least until the new crops are marketed, and the number of farm families on relief will undoubtedly continue to increase.

Throughout all of the drought-stricken areas the supplies of home-grown foods will be lower than in many years, and expenditures for purchased foods will absorb an unusually large share of the cash available for living expenses. The quantities of vegetables and fruits canned and stored for winter use are far below normal, and in many homes shortages will also be felt in milk, butter, and eggs provided by the farm. Supplies of home-canned or home-cured meats, however, will be abundant, owing to the unusually large slaughter of cattle, hogs, and poultry for home use. In areas not affected by the drought many farm families are entering the winter with a very generous food supply as a result of the extensive program of home-food production and conservation carried on during 1934 by the Extension Service and by relief agencies.

Those families who will enjoy some leeway in cash expenditures, after the cost of food and other necessities of living have been met, may increase somewhat their expenditures for clothing and for home furnishings during 1935 in order to replace articles that have seen some years of wear. Additional expenditures may also be expected for the repair and running of the family automobile, and some increase may appear, especially during the spring months, in expenditures for repairs and improvements on the house in response to the stimulus of the Federal housing program. In many farm homes the increased funds available for family living will probably be devoted, as in 1934, to sending the young people to college. In a large proportion of homes, however, payments on debts and other obligations will continue to absorb a large part of the surplus of cash over essential living expenses.

CASH INCOME RECEIVED FROM AGRICULTURE

The cash income received by farm families from Agriculture during 1934 has continued the upward trend which began during the first half of 1933. The improvement is due in part to the advance in the prices of agricultural products and in part to the rental and benefit payments made by the Agricultural Adjustment Administration and to income from the emergency sale of cattle, sheep, and goats to the Government. But to the extent that the increased income this year resulting from emergency sales of livestock represents a reduction in livestock inventories below what normally would have taken place, farmers have gained in current receipts by sacrificing assets. Those farmers who have been forced to a severe liquidation of livestock will be in a weakened economic position until their livestock numbers are restored.

Preliminary estimates place the total cash income from the sale of farm products, including payments by the A. A. A., at approximately \$6,000,000,000 for the calendar year 1934. This figure represents an increase of 19 percent over the figure of \$5,051,000,000 for 1933 and 39 percent over the low level

reached in 1932. It is still, however, only 59 percent as large as the average annual cash income received from farm marketings during the 5 years preceding 1930.

This increase of almost \$1,000,000,000 in cash income for 1934 has been partly offset by an increase in production expenditures of farmers. During 1933 these expenditures, on the whole, were slightly lower than in 1932, continuing the decline of the preceding 3 years. For 1934, expenditures for interest and taxes are somewhat lower than in 1933, but commodity prices and farm wages are noticeably higher. The prices paid by farmers for commodities used in production averaged 16 percent higher during the first 9 months of 1934 than in the same months in 1933, and wages paid to hired labor have averaged about 14 percent higher. The increase in total expenditures for production during 1934, however, is not as large as the increase in cash income, and the balance of income available for family living and for improvements and savings will probably show a distinct gain over 1933.

Income estimates by States for 1934 are not yet available, but the principal increases over 1933 incomes may be expected in the dairy and tobacco sections and in those regions in which crop production has been fairly good, especially in the States east of the Mississippi River and in the Pacific Coast States.

The seasonal decline in farm income from the fall peak in October may be slightly greater than usual, unless cattle marketings continue large this winter. The level of income during the first half of 1935, however, is expected to average higher than that of a year earlier. If crop production in 1935 is more nearly normal, farm marketings of crops will increase and farm prices are likely to readjust themselves to the larger supplies. But increased marketings of crops will tend to maintain the level of gross farm income, especially if the level of domestic demand through the year averages higher than in 1934.

The income that farmers will receive during 1935 from rental and benefit payments cannot be estimated at this time, as the amount will depend upon whether part of the payments on programs now in operation is made after the beginning of the new calendar year and upon the new provisions that are adopted for 1935 programs. Present indications are that income from the sale of farm products, plus rental and benefit payments, may show some advance over the 1934 level, but it is not probable that this increase will be as large as the increase from 1933 to 1934.

CASH INCOME RECEIVED FROM NONAGRICULTURAL SOURCES

Receipts from sources other than agriculture, such as outside employment, the tourist trade, and the sale of home-made products, have continued to form an important part of farm-family income during 1934. For many farm families, in fact, these sources have supplied practically all of the cash available for living expenses during the year.

Earnings from employment in nonagricultural industries by members of farm families have probably shown a slight gain over 1933, and employment in civil works, public works, and work-relief projects has further supplemented incomes in many farm homes. It is difficult to estimate the probable trend in employment during 1935, but there seems to be little reason to anticipate an increase in farm-family incomes from this source during the year, unless additional opportunities are opened up as a result of new public works and relief programs.

Income from the sale of baked goods, canned goods, and other home-made products through women's cooperative associations, curb markets, and roadside stands has also advanced somewhat during 1934. The interest of farm women in these enterprises as a direct source of cash is leading to improvements in marketing methods and facilities and to better standards of quality for the products prepared for sale. The growth of this movement may be expected to continue during 1935, and the income received from this source may be somewhat greater than in preceding years.

The income received by farm families in some sections of the country from tourists may have increased somewhat during 1934, since travel within the country has been stimulated by the improvement in national income and by unfavorable exchange rates for foreign travel. Some further increase in receipts from tourists may appear next spring and summer, if further improvement occurs in the incomes of urban families.

Although there has been a general improvement in the incomes received by farm families during 1934, a considerable proportion of the farm population has been unable to earn sufficient cash to meet essential living expenses, either

through the sale of farm products or through other sources of income. Some of these families have managed to finance themselves by drawing on past savings and investments or by borrowing, but many have had to turn to relief agencies for support. The number of farm families on relief rolls in the fall of 1933 was estimated as about 600,000. Although the total relief load has remained practically the same during the last 12 months, the number of farm families on relief has increased in proportion to the total number of families on relief. In the areas affected by the drought this increase has been especially evident during recent months and will undoubtedly continue into 1935 until the new crop is marketed.

HOME PRODUCTION FOR FAMILY USE

In addition to their cash incomes from the sale of farm products, and from other sources, farm families derive an income in "kind" of very substantial proportions in the farm products retained for family use. In more than half of the 62 studies of farm-family living made in this country since 1922 in which information was given on home-produced goods, the value attributed to these goods was from 30 to 50 percent of the value of all goods and services purchased for family living.

Of the farm-furnished goods, food ranks first in value. In 23 of the studies just mentioned the home-produced food was considered worth from one-fourth to one-third as much as all goods and services purchased for family living, and in 30 others home-produced food was considered worth from one-third to two-thirds as much. A conservative estimate of the average value of home-produced food is approximately \$65 per person per year (values between farm and retail prices adjusted to September 1934 levels by the Bureau of Labor Statistics food index). During recent years, however, many farm families have produced much more food than is indicated by the above figure; low cash incomes and the disparity between farm and retail prices have fostered extensive home-production programs.

Extension programs for 1934 reemphasized the economic and health value of an annual plan for procuring with a small cash outlay a food supply suited to the nutritional needs of the family. Such plans were put into operation by many self-supporting farm families all over the country. In addition, most States made large-scale plans for home gardens for relief families, for community acreages cultivated as work projects, and for food conservation in community-canning plants in which the work was done by relief labor. Had normal weather conditions prevailed, farm families throughout the country would have enjoyed a generous food supply, not only during the summer of 1934, but also during the winter and spring of 1935. As it has turned out, those living in the South Atlantic and in the East South Central States probably have a more abundant food supply than for many years, whereas families in the drought-stricken Central and Mountain States are entering the winter with a very scanty and unbalanced home-produced food supply.

The drought of 1934 put 1,187 counties in 24 States on the emergency list, and over a wider area the drought damaged more or less seriously grains, pastures, field and truck crops, and home gardens. Well-laid plans for home food production were disrupted. Shortage of feed and water forced the sale or premature slaughter of large numbers of cattle, hogs, and poultry for home use, although some meat animals have been held over for early slaughter in cold weather. As a result, farm families in these areas will have an abundance of home-canned or home-cured meats. On the other hand, short supplies and relatively high prices of feed will probably result in a somewhat less plentiful supply of milk, butter, poultry, and eggs than usual, after the pasture season is over. Fortunately, late rains and mild weather over a considerable area have made possible some good fall gardens and some late canning. Nevertheless, in most drought areas pantry shelves and cellars are unusually bare of vegetables and fruit. In the New England and Middle Atlantic States the severe weather in early 1934 greatly reduced the peach and apple crops, so that farm-home supplies of these fruits are far below normal.

Throughout the United States home production of items other than food was maintained at a high level in 1934. During the coming year farm families may be expected to continue to make, clean, and repair clothing, bedding, rugs, and furniture and to prepare many of their own cleaning supplies.

Hence in 1935, as in 1934, an extensive and well-considered home-production program in food and in many other items is likely to continue. Its scope and content will differ from area to area and from farm to farm, and will be deter-

mined by many factors. Among these factors may be mentioned the cash income available for family living, the land and labor available for home production, the information and skill of family members, and the need for conserving cash to meet fixed obligations and to secure goods and services not easily provided by the farm and family.

ADJUSTMENTS IN FAMILY EXPENDITURES

The improvement in cash incomes received by farm families in 1934 has been only partially reflected in increased purchasing power, for the prices which farm families have had to pay for commodities bought for family use have also shown some advance over 1933 levels. Retail prices for these commodities rose sharply from the low point of March 1933 to September 1933. Since then the rise has been very slight, amounting to only 5 percent for all groups of commodities combined up to September 1934. For the first 9 months of 1934 the average level of these prices was 15 percent higher than in the same months in 1933, and for the full calendar years the difference will probably be about 13 percent. This increase in retail prices, however, has not kept pace with the advance in the level of farm income from 1933 to 1934, and there has been, on the whole, a distinct gain in purchasing power.

For many farm families this increase in real income in 1934 has afforded more choice in expenditures than during the last few years. Some families also have more leeway this year than last because they have been able to make long-term plans for debt payments, thus releasing more cash for other items in the family budget. But in the drought areas most of the money available for family living, especially during the last few months, has been needed for the bare necessities of life, and this situation will probably continue until a new crop comes along.

Farm-family disbursements for food usually amount to one-fifth or more of total cash expenditures for family living, but often demand 30 percent or more. For many farm families expenditures for food will be higher than usual during the coming year—in part because of the increased quantities of fruits, vegetables, and other items that must be purchased and in part because of increased prices.

According to the Bureau of Agricultural Economics, food prices were about 16 percent higher during the first 9 months of 1934 than in the corresponding period of 1933, with the September 1934 prices about 9 percent higher than the prices of the previous September. The prices of most foods have increased during the year. Since early summer meat prices, particularly those of pork, have advanced more rapidly than those of most other commodities. The advance in food prices since June, however, has been partly seasonal. A further moderate advance is likely to occur before the end of the year. The general level of retail prices of food in 1935 is almost certain to be above that of 1934, with the rise most pronounced in meat prices.

Since about 15 percent of farm-family expenditures for food usually goes for meat, this rise in meat prices is expected to result in considerable readjustment in these expenditures. When meat prices become too high for the farm-family purse there is likely to be an increasing demand for fish, particularly for canned salmon, of which there was a very large pack this year, with correspondingly low prices. Probably, too, the dried legumes will feature more largely than usual in many farm-family diets.

There is nothing in the present situation to indicate any substantial increase during the coming months in the prices of most staples, such as bread, flour, sugar, and miscellaneous items—articles for which the farm family usually spends about half of its food money. Corn meal, however, will probably advance considerably in price during the next few months. For the many farm families that usually depend on a home-produced supply of this food, but whose crop was insufficient this year, these price increases will add considerably to the food budget.

Supplies of late fruits that are now being marketed, or will be marketed during the fall, winter, and early spring months, are only slightly below those of last year, while supplies of late vegetables are about one-fifth larger than a year ago. Citrus fruits probably will be in abundance, and so will cabbage, carrots, tomatoes, and lettuce. Hence there is no reason to anticipate much, if any, price increase. In the drought areas, however, farm families may need to buy two or three times the quantities they usually purchase if they are to maintain their dietary standards.

Farm families in the past have spent from \$17 to \$60 per person per year for food (values adjusted to September 1934 levels), depending on the scope of their home-production program. Probably \$40 per person per year represents a fair average. Expenditures for food may be considerably reduced by families who produced more than the usual quantities for home use. But in the drought-stricken areas food expenditures will probably need to be increased by as much as 30 percent if the usual dietary level is to be maintained.

Cash expenditures for clothing will probably increase, as many farm families find it necessary to replace outer clothing that has now seen several years of wear. These replacements will cost little more than did such materials a year ago, as clothing prices have advanced only 4 percent from September 1933 to September 1934, according to the Bureau of Agricultural Economics, and it is probable that they will remain fairly stable during 1935.

The need for house repairs is also urgent, and it is expected that the interest aroused in good housing by the rural housing survey of the Civil Works Administration and by the activities of the Federal Housing Administration will influence some farm families to spend more cash on home improvements this coming year.

Some families will undoubtedly spend more money for household furnishings and equipment during the coming year. The retail prices of furniture and household furnishings advanced about 4 percent between September 1933 and September 1934. These prices also will probably continue fairly stable during 1935.

Families who can afford it will spend more money than last year for the repair and care of the family automobile, and will make a somewhat freer use of cash for gasoline to take family recreational and educational trips. More money will probably be spent for recreation than last year, although families will continue to rely largely on home and community resources for recreation at small or no cash expense. More money will also be allocated to education by families with children of college age. There was a decided increase in college enrollment this fall.

ADJUSTMENTS IN PURCHASING METHODS

As cash incomes increased during last year, self-supporting farm families tended to use barter to a lesser extent than in 1933 as a means of securing goods and services. This tendency seems likely to continue in 1935. Many families on relief, however, were encouraged by relief agencies to employ barter to a greater extent than previously, and this effort to increase the level of living without cash outlay seems likely to continue.

In an effort to augment their buying power, farm families have continued during 1934 to buy somewhat more goods through cooperative purchasing associations. In addition to commodities used for farm production, many cooperative associations are now handling such supplies as gas and oil, coal, general merchandise, plumbing and electrical equipment, tires and inner tubes, clothing, and household furnishings. An increasing number of cooperative associations are selling soap, bread, and some other products under their own brands. Cooperative associations located in large centers are developing the business of serving members with home supplies by mail or through warehouses. The number of cooperative wholesale units developed to serve the cooperative buying associations also increased last year.

CONSUMER INFORMATION AND PROTECTION

Interest in consumer-buying information increased substantially during last year. Many schools and colleges, and the home economics extension service, are including this subject in their programs. This development of interest in consumer problems has been greatly stimulated by three governmental agencies: the Consumers' Counsel of the A. A. A., the Consumers' Advisory Board of the N. R. A., and the recently established Consumers' Division of the National Emergency Council. Those agencies will continue during 1935 to examine the operation of codes, marketing agreements, and licenses, from the standpoint of consumer interests and to represent the consumer in the formulation of new policies in the recovery program.

The demand for quality grading and informative labeling for consumer goods has continued during the year, and plans are now being completed for the adoption of uniform methods of grading and labeling canned foods and several

other products. It is probable that 1935 will see a further development of this program.

WHEAT

Since the spring of 1933 wheat prices in the United States have been maintained at unusually high levels relative to world prices. This has been largely the result of two successive years of low production due to poor yields and heavy abandonment of wheat in the United States, but acreage reduction and the removal of surplus wheat from the Pacific Northwest through governmental aid have also tended to increase United States prices relative to world prices. Unless abandonment is heavy and yields are again below average next year, the new crop will provide an export surplus and it is to be expected that prices in the United States may be but little above an export basis during most of the 1935-36 season.

Although prices seem likely to be close to an export basis, by no means all of the gains of the last 2 years will be lost. There has been some improvement in the world wheat situation. Supplies are smaller than last year, and at Liverpool wheat prices in terms of gold are above their levels of last spring. Part of this improvement may be carried over into the next crop season. Furthermore, in terms of the revalued dollar, prices would be increased by about 70 percent even in the absence of any increase in prices in terms of gold. During the latter part of October at Liverpool, December wheat futures were selling for about 75 cents per bushel in terms of United States currency, while at Chicago prices were about 20 cents per bushel above Liverpool. Prices at Chicago during the 1935-36 season may reasonably be expected to average somewhat below Liverpool rather than above. It is to be recognized, however, that so long as United States supplies do not greatly exceed probable domestic utilization plus a moderate carry-over, small changes in the prospect for supplies may cause comparatively large changes in the margin between prices in the United States and Liverpool. Similarly under such conditions, price relationships may be materially altered by any governmental action that may be taken to dispose of surplus wheat.

ACREAGE

Such downward readjustment of acreage as has been made since wheat prices began their rapid decline in 1928 has occurred primarily in the United States. Reductions have also taken place in Canada, Argentina, and Australia, whereas Europe as a whole has greatly increased acreage. The increase of acreage in the normally importing countries of Europe has been the result of wheat prices that have been high relative to prices in exporting countries and in the freely importing markets of the world. The relatively high levels in these countries have been due primarily to high tariffs, to the establishment of import and milling quotas, and to other measures that restrict the use of foreign wheat in those countries.

The harvested acreage of wheat in the world, excluding Russia and China, for the crop year 1933-34 amounted to 247,000,000 acres, compared with a high point of 260,000,000 acres in 1930-31, and 259,000,000 in 1932-33. The reduction from 1932-33 to 1933-34 was due almost entirely to the 10,000,000-acre reduction in the wheat area of the United States. In the United States the area harvested has been reduced from a high point of 63,300,000 acres in 1929 to 47,500,000 in 1933, and 44,900,000 acres in 1934. The area planted in the United States declined from 71,137,000 acres for the 1928 crop to 66,511,000 for 1933 and 58,700,000 acres for 1934. Meanwhile, the Canadian acreage harvested declined from a high point of 25,300,000 acres in 1929 to 24,000,000 in 1934; the Australian area harvested, from a high of 18,200,000 acres in 1930-31 to 13,000,000 in 1934-35, and the Argentine acreage sown from a high point of 22,800,000 in 1928-29 to 18,500,000 (preliminary estimate) in 1934-35. Importing countries of Europe, on the other hand, have increased their wheat area from 51,900,000 acres in 1929 to 57,300,000 in 1934, while in the lower Danube Basin the area has remained practically constant at between 19,000,000 and 20,000,000 acres.

The Russian wheat area, which recovered rapidly in the last decade and reached 92,100,000 acres in 1931, has been somewhat lower in the last 3 years. It amounted to 85,500,000 acres in 1932 and 82,100,000 in 1933. The harvested area for the current season is not yet known, but the sown area is indicated to be about the same as in 1932, 89,000,000 acres. Most of the increase constituted a recovery to pre-war levels, furthermore the increase in Russian wheat

production which has accompanied the extension of acreage has been absorbed largely within Russia and has had relatively little effect on world markets as compared with the effect that a similar increase in another exporting country would have had.

THE WORLD WHEAT AGREEMENT

The World Wheat Agreement, signed in August 1933, is in essence a plan to prevent further increase of acreage in the wheat-importing countries and to bring about a reduction of wheat acreage in the leading wheat-exporting countries for the crops harvested in 1934. The agreement, at the same time, provided for the division of the estimated world import requirements of wheat among the several exporting countries, through the allocation of export quotas for the two seasons 1933-34 and 1934-35. The export quota provisions of the agreement did not succeed in restraining exports of wheat in the manner hoped for. This was chiefly because world demand proved less than was assumed in determining the quotas, with resultant subsidized competition for the existing markets, particularly in the last half of 1933; and because of an unexpectedly large crop in Argentina, which led that country after unsuccessful negotiations to increase its quota, to ship a large quantity in excess of the agreed figure for the season 1933-34. Negotiations among the countries that are party to the agreement, aiming at prolonging and strengthening the plan and making it more flexible, are in progress; some agreement may be reached at the next meeting of the advisory committee in the November 1934 conference of these countries at Budapest.

CARRY-OVER

The world carry-over of wheat into the current season appears to have been somewhat larger than that of a year earlier, although the quantities available for export or carry-over of the principal non-European countries, together with United Kingdom port stocks and quantities afloat, are about 38,000,000 bushels less than a year earlier. This was more than offset by an increase of about 60,000,000 bushels in the carry-over of continental European countries. The United States and Canada were the only important exporting countries for which there was a decrease. The United States carry-over was indicated to be about 100,000,000 bushels smaller than on July 1, 1933, whereas the Canadian carry-over was decreased by only about 20,000,000 bushels. Argentina had an increase of about 46,000,000 bushels and Australia 35,000,000.

As a result of a smaller world crop in 1934-35, it seems probable that world stocks may be reduced to a considerably lower level on July 1, 1935, but they are not likely to be reduced to what may be considered a normal level unless, because of the shortage of feed grains, there is very heavy feeding of wheat during the current season in the United States and Europe.

PRICES

Under normal conditions the spread between United States prices and world prices is closely related to the quantity of wheat the United States exports. Over short periods the quantity exported is determined primarily by the price spread, whereas over long periods the quantity that needs to be exported largely determines how high United States prices are compared with world prices—the larger the surplus the lower the United States price. In almost every year prices in some regions of the United States are on an export basis for at least a part of the year, and this usually means that Chicago prices must be about 10 to 20 cents per bushel (assuming present-day freight rates) below Liverpool during such periods. In exceptional years, such as 1925-26, 1930-31, 1933-34, and thus far during the current year, United States prices have been far above an export basis throughout a large part or all of the year.

In 1925-26 this fact was due to the extremely short crop of United States winter wheat harvested that year. During the latter half of 1930-31 it was due primarily to the operations of the Grain Stabilization Corporation. In 1933-34 relatively high United States prices were due partly to the very short crop of wheat, a crop which was below domestic consumption by about 75,000,000 bushels, but this influence was reinforced by prospective acreage reduction under the agricultural adjustment program and by the governmental aid given to exporting in the Pacific Northwest. During July 1933 the expectation of further depreciation of the dollar was also an important contributing factor.

In the current season production in the United States was even smaller than in 1933, and with a smaller carry-over at the beginning of the year prospects are that the United States carry-over as of July 1, 1935, will be reduced to about a normal level, even though some Durum and Hard Red Spring wheats are imported. In consequence of these short supplies, United States prices have been held at a level little below an import basis for nonpremium wheats.

Prices of wheat in the unprotected markets of the world began to fall rapidly in the latter half of 1929 and continued to do so with little interruption until the late summer of 1931. In Great Britain prices advanced rapidly in the fall of 1931 as a result of the depreciation of the pound sterling, but in terms of the currencies of gold-standard countries prices declined somewhat further in the two following years and reached their lowest levels in the spring of 1934. There was some improvement during the late spring and summer months, but Liverpool futures in terms of our former gold dollar are now a little less than 50 cents per bushel. The rise that has taken place in Liverpool prices since the beginning of 1933, when converted to terms of United States currency, has been due primarily to the depreciation of the dollar.

Even as there has been but little improvement in world wheat prices when measured in terms of gold there has been but little improvement in the world wheat situation. The pressure of surplus stocks has been considerably relieved by 2 successive years of low yields in the United States and Canada, but acreage sown for the world, excluding Russia and China, has declined only a little. Decreases of the wheat area in the United States, and to a lesser extent in Canada, Argentina, and Australia, have been largely offset by increases in Europe, and import barriers against wheat remain very high in most continental European countries. Further improvement in the world wheat situation may be expected, but it will presumably be slow, as will also the further recovery of world prices.

AMERICAN PROSPECTS

For the current season, although total supplies of wheat are equal to ordinary domestic utilization plus about a normal carry-over, supplies of some classes are far below usual utilization. This is particularly true of durum wheat of a type suitable for semolina, and hard red spring supplies are also short. For the last week of October, No. 2 Hard Winter at Kansas City and No. 2 Red Winter at St. Louis were both about \$1 per bushel. No. 1 Dark Northern Spring wheat at Minneapolis was about 15 cents per bushel more, and No. 2 Amber Durum at the same market, about 40 cents more. At Seattle, on the other hand, No. 1 Western White was about 20 cents per bushel under No. 2 Hard Winter at Kansas City. The North Pacific region is the only one where the pressure of surplus supplies has been keeping prices far below an import basis. Prices in that region are so low relative to prices east of the Rockies as to result in some eastward shipment from the coast. Likewise the relatively low prices in the Pacific Northwest have tended to divert the flow of grain from producing regions of western Montana and parts of Idaho away from the West.

The unusually high prices of semolina-type durum wheat will tend to result in an increase of durum relative to hard red spring acreage in the northern Great Plains if seed is available. During the 3-year period 1930-32 the sown area of durum averaged 4,372,000 acres. In 1933 only 3,142,000 acres were sown and 2,310,000 harvested, while for 1934 the areas sown and harvested were about 2,000,000 and 1,061,000 acres, respectively. High prices for well-adapted varieties of seed may prove to be a limiting factor to any material increase of acreage. With a view to meeting the seed-shortage situation, dealers and elevator men have pledged themselves to secure substantial supplies. Such supplies may be supplemented in areas where they are inadequate by seed supplied by the Agricultural Adjustment Administration. Up to October 16 the Administration had acquired 837,440 bushels toward a possible total of around 1,000,000 bushels of durum for such use.

If there should be an expansion of durum plantings to levels approaching those of 1933, it is to be expected that durum prices during 1935-36 would be much lower relative to other wheats than is the case this season. While durum supplies will be held down by a very small carry-over, average yields on an area of 3,000,000 acres would result in a new crop ample for domestic requirements and carry-over. A further increase of acreage, or yields above average, would result in a considerable surplus for export.

No estimates are yet available of the total United States wheat acreage sown or to be sown for harvest in 1935. The average acreage sown for the years 1930 to 1932, inclusive, the base period most used in the wheat contracts for the program of the Agricultural Adjustment Administration is 65,958,000 acres. Acreage-reduction contracts covering 79 percent of this acreage were signed, and cooperating farmers were required to reduce their acreage for harvest in 1934 by 15 percent. Unfavorable seeding conditions, however, reduced spring wheat seedings below the permitted area. The contracts also covered seedings for 1935, but the required reduction for the coming year is 10 percent instead of 15 percent. This represents an increase of about 2,600,000 acres in the permitted area of contract signers.

The estimated acreage planted for the 1933 crop was 66,511,000 acres and for 1934, 58,700,000 acres. The estimated acreage seeded for the 1934 crop, therefore, represents a reduction of 11.0 percent from the base period 1930-32. Part of the reduction in acreage for the 1934 crop was due to unfavorable seeding conditions. The extent to which reduction from the base period of acreage under contract will be offset by increased plantings on the part of nonsigners has not yet been determined. There is some indication, however, of intentions to increase the wheat acreage, especially in the eastern Wheat Belt, where a much smaller proportion of the farmers signed wheat contracts than in the Great Plains and Western States. The need for additional fall and winter pastures due to short feed crops has also stimulated seeding.

It would seem from an examination of all of the factors that the acreage which has been, and will be, planted for harvest next year is likely to be 5 or 6 percent less than the acreage sown for the base period 1930-32, but above that seeded for harvest in 1934. This would indicate an area to be sown for harvest in 1935 of somewhere around 62,000,000 acres. This acreage, with average abandonment and yields, would result in a crop of approximately 790,000,000 bushels. Such a crop would exceed probable domestic utilization for the crop year 1935-36 by about 165,000,000 bushels. There is only one chance in three that the divergence of abandonment and yields from their average will result in a crop more than about 100,000,000 bushels above or below that suggested by the averages.

The actual situation will, of course, depend largely upon yields in 1935. However, the above reasoning indicates that the chances are good that the United States will have a considerable export surplus of wheat in 1935-36. In the absence of any special measures (such as governmental aid to exports and storage) to relieve its pressure on the market, such a surplus would probably result in the United States prices both west and east of the Rockies being on an export basis at some time during the year and in an average level of prices not much above an export basis.

Owing to the large supplies of wheat in the exporting countries and to the restrictions placed on the use and importation of foreign wheat in most of the importing countries, combined with the fact that the wheat produced in the importing countries is generally of weak quality, the import demand will be mainly for high-grade strong-quality wheats. Premiums, consequently, will continue to be paid in world markets for high-grade strong wheats. A somewhat similar situation also prevails in the domestic market of the United States. With available supplies of wheat considerably in excess of requirements, millers will be more particular as to their purchases. Consequently, the best market prices will be obtained by farmers who plant only those high-quality varieties which sell at a premium.

FLAXSEED

World supplies of flaxseed for the 1934-35 season will probably exceed the small supplies of 1933-34 by about 10 percent and may be approximately equal to the average of the 5 preceding years. World demand during the 1934-35 season, as indicated by building activity, may be expected to be better than in any of the last 3 years. Compared with 1933-34, world supply is larger, but this is approximately offset by the higher level of building activity; therefore, the seasonal average price of flaxseed in domestic markets during 1934-35 is not expected to be greatly different from 1933-34 when No. 1 flaxseed at Minneapolis was \$1.91 per bushel.

WORLD SUPPLIES

Another season of short domestic flaxseed supplies is in prospect. The October 1 estimate of the United States flaxseed crop was 5,228,000 bushels, compared with 6,806,000 bushels in 1933, and 18,664,000 bushels as the 5-year (1927-31) average. The seeded acreage of 1934 of 1,628,000 acres was under that of 1933, when 1,742,000 acres were planted, but drought and excessive temperatures in July and early August, followed by frosts in the later month, damaged the crop so severely that it did not respond to the favorable September weather. The October 1 condition suggested a yield of 4.6 bushels per acre, the lowest on record, and compares with the 10-year average of 7.3 bushels. A feature of the present domestic situation was the seeding of 12,000 acres in California, which produced 240,000 bushels, making that State the fourth largest flax producer this year. The 1934 North Dakota and South Dakota crops were only 11 and 2 percent of average (1927-31), respectively, Montana 7 percent, and Minnesota 56 percent; in the minor producing States of Wisconsin, Iowa, Missouri, Nebraska, Kansas, and Wyoming, the crop was about three-fourths of average.

Further increases in acreage and production in the minor producing States are in prospect. On account of the shortage of irrigation water in the Imperial Valley, the 1935 acreage may not be so large as intended earlier this fall, but will be about equal to or slightly larger than the 1934 acreage. Unless the Agricultural Adjustment Administration develops a program to increase the flaxseed acreage, the prospective seeded acreage in 1935 may not be greatly different from the seeded acreage of 1934 (1,628,000 acres). Weather conditions at planting time will be important factors determining whether there will be an increase or decrease from 1934. Average yields on the 1934 acreage would produce a crop materially below prospective 1935-36 requirements. Prospects indicate that the United States will remain as usual on an import basis in 1934-35 and in 1935-36. The extent of imports during the last half of the 1934-35 season will be influenced by the acreage seeded, the condition of the 1935 crop, and changes in demand for linseed oil both in the United States and in Europe.

The 1934 flaxseed acreage in Canada was further reduced, being only 226,000 acres, but on account of fairly good yields the crop has been placed at 1,096,000 bushels, compared with only 632,000 bushels in 1933 and 2,719,000 bushels in 1932. New-crop Argentine seed will not become available until January 1935. Remaining Argentine supplies from the 1933-34 crop on October 1 may be placed at about 6,200,000 bushels compared with 10,669,000 bushels a year earlier. The acreage seeded in the summer of 1934 was 7,215,000, a gain of 5.3 percent over that of the previous year. Trade advices suggest that at least average yields may be expected. Losses from frost or grasshopper damage are not expected to be serious. Average yields on the above acreage would give a crop of 70,566,000 bushels compared with the actual out-turn of 56,690,000 bushels in 1933-34, and 74,036,000 bushels—the 5-year (1926-27 to 1930-31) average. The 1934-35 world acreage seeded to flaxseed in 17 countries, which in the previous season accounted for 92 percent of the total world acreage, is 17,536,000, or 98 percent of the 1933-34 acreage. Production statistics are not so readily available as are acreage data, but enough material is available to indicate a larger world crop than the 120,800,000 bushels of 1933-34.

WORLD DEMAND

World demand for flaxseed, as indicated by building activity, may be expected to be better than that in any of the last 3 years when it was unusually low. Building activity has shown more improvement in Europe in the last 3 years than in the United States.

Domestic demand for flaxseed and flaxseed products during the remainder of the 1934-35 season will be slightly improved over that of 1933-34 when it was greatly below the predepression level. Total building activity (based upon square-feet in contracts awarded), a measure of demand for linseed oil, has shown but little improvement since the low point reached in the spring of 1933. Government financed building under the Public Works program has about reached a peak. Efforts of the Federal Housing Administration may increase the utilization of linseed oil from present levels since the funds used for the purchase of paints in refuishing, interior decorating, and remodeling will be a large proportion of the total money used. Building costs as compared with monetary returns in the form of rents for buildings are unfavorable to an early expansion of new construction in this country.

Taking European imports of flaxseed as being indicative of European consumption, average consumption in Europe in the 5 years preceding 1929 was 59,000,000 bushels, compared with 43,000,000 bushels crushed and used for seed in the United States. In the 4 years since 1929 the European imports averaged 66,000,000 bushels, as against 26,000,000 bushels used in the United States. Residential building in the United Kingdom increased 80 percent in the first 7 months of 1934 over the low point reached in 1931. German activity has more than doubled from the 1932 low. Italy has shown an upward trend in building since 1932, with continued gains in the first half of 1934. France is an exception, having shown a downward trend since 1930 and no upturn in the first 7 months of this year. Giving each of the above countries, and also the United States, a weight proportional to its population, the weighted average index of building activity for the five countries reach a low of 51 percent of the base period (1928=100) in 1932. The weighted average in 1933 was 57.5 percent and in the first half of 1934 was 72.5 percent. Based upon reports from Europe and the above comments on the domestic situation, average building activity for 1934-35 may not be greatly different from that for the first half of 1934.

Feed crops in the United States are so short as to place unusual importance upon the use of high-protein feeds, including linseed meal. Europe is also short of feed. Linseed meal available for domestic use will remain relatively high priced compared with other feedstuffs because of the unusually short supplies of this feed, although some linseed meal, normally shipped by eastern crushers to foreign countries in order to secure a drawback, may be kept in the United States. Farm income during 1934-35, which may be considered indicative of the level of demand for straight and commercial feeds, is expected to be somewhat greater than during 1933-34.

Although the above analysis leaves little to be attributed to the competition afforded domestic linseed oil by substitute drying oils, some consideration should be given to the marked increase in imports of perilla oil. Imports in 1928 totaled only 2,000,000 pounds, but in 1933 aggregated nearly 23,000,000 pounds. During the first 8 months of 1934, imports of perilla oil totaled about 24,000,000 pounds. Since this oil has noticeably stronger drying power than commercial linseed oil, it has become the practice to mix perilla oil with other oils, including Russian sunflower-seed oil and domestic soybean oil, and use the mixture instead of linseed oil. Other oils are also extensively used as substitutes for linseed oil, including imported and domestic tung oil, soybean oil, hempseed oil, and menhaden oil. The price of linseed oil should remain relatively low, compared with the price of substitute oils, in order to maintain the present economic position of linseed oil in the field of drying oils.

February 1933 saw the depression low for domestic flaxseed prices, with No. 1 flaxseed at Minneapolis averaging \$1.10 per bushel for that month. The October 1934 average was \$1.90. The value of linseed meal per bushel has increased relatively more than the value of linseed oil per bushel. The margin taken by crushers for costs of operations and profits has been lower than in the preceding year. Reduced operating margins of crushers have been passed on to consumers in lower prices for linseed products or to the producers in higher prices for flaxseed than would otherwise have prevailed. Prices of flaxseed in world markets weakened sharply in the latter part of September because of favorable reports on the growing condition of the Argentine and Indian crops and an upward revision in the estimates of remaining supplies of old-crop seed in Argentina.

UNITED STATES ACREAGE IN 1935

The United States flax acreage seeded in 1935 is not likely to exceed an acreage which at average yields would produce more flaxseed than the normal proportion between domestically produced flaxseed and normal crushings. Prior to 1930, annual fluctuations in the flaxseed acreage in the principal producing States—Minnesota, North Dakota, South Dakota, and Montana—were largely a response to relative per-acre returns of spring wheat and flaxseed the preceding year and prospective returns for the current year.

The flax acreage seeded has declined during recent years in spite of favorable price relationships. Unfavorable weather at seeding time has been an important factor. If the weather at planting time is favorable, the flaxseed acreage may be increased somewhat over that of last year, but if not favorable the acreage may be slightly less. Land in summer fallow and pastures ruined by the drought provide sufficient acreage for an increase. A shortage of seed flax is not likely to develop in the spring of 1935. Reserves have been accumu-

lated by country elevators, seedsmen, crushers, and the Federal Seed Stocks Committee, the latter having purchased and set aside 417,000 bushels of "Bison" seed.

COTTON

SUMMARY

The world supply of all cotton for the 1934-35 season will probably be 5 to 10 percent smaller than the record supply of 1933-34, but considerably larger than for any year prior to 1931-32, according to information available in late October. The indicated world supply of American cotton in 1934-35 is about 18 percent less than in 1933-34 and about equal to the average for the 10-year period ended 1932-33, while the expected supply of foreign-grown cotton in 1934-35 is 5 to 10 percent larger than the unusually large supply of 1933-34 and is in the neighborhood of 25 percent larger than the average for the 10-year period ended 1932-33.

World mill consumption of all cotton in 1933-34 was about 3 percent larger than in 1932-33 and was the largest since 1929-30. Total consumption of American cotton declined about 4 percent, whereas consumption of foreign-grown cotton increased 13 percent. Most of the decline in the consumption of American cotton occurred in the United States, where there was a decline of 7 percent from the previous season. Consumption of American cotton in foreign countries declined only 182,000 bales or 2 percent.

Domestic mill consumption during the first 2 months of the 1934-35 season was exceptionally low, partly as a result of the textile strike. Although sales of domestic manufacturers apparently exceeded somewhat the greatly restricted output during this period, stocks continued large. The rather large stocks of cotton goods, the low level of sales and unfilled orders, the higher retail prices of cotton goods, and the small consumption during the first part of the season indicate that domestic consumption in 1934-35 may be no more than and probably will be less than in 1933-34.

The reduced mill consumption in Europe during the first part of the season, along with the acute currency and exchange situation in Germany, Italy, and Poland, indicates that total consumption of all cotton in Europe during 1934-35 may be somewhat less than the relatively high consumption during the previous season. With mill activity in Japan and exports of cotton cloth from Japan during the first part of the 1934-35 season considerably higher than a year earlier, and with continued efforts to expand its cloth markets further, along with the possibility of a continuation of the high rate of mill activity in China, the total consumption of all cotton in the Orient during the season 1934-35 may equal or slightly exceed that of the previous season. With the present outlook for decreased total mill activity in foreign countries, the decrease in supplies of American cotton and the increase in supplies of foreign cotton, along with the relatively high prices of American cotton, point to a further reduction in consumption of American cotton in foreign countries in 1934-35. This probability is indicated though in no sense measured by the lag in exports which for the first 3 months of this season were in the neighborhood of 1,300,000 bales or about 53 percent of the corresponding period last year and 60 percent of the 10-year average for the period.

Cotton prices in the United States continued the upward trend throughout most of the 1933-34 season and in August 1934 were at the highest levels reached since June 1930. Domestic market prices of cotton in 1933-34 averaged 51 percent higher than in the previous season, and including the processing tax the cost of raw cotton to domestic manufacturers was about twice as high as in 1932-33, although in September it bore about the same relation to wholesale prices of unfinished cotton goods as in the 5 years ended 1929-30. Prices of American cotton in Liverpool during 1933-34 in terms of British currency were higher than a year earlier, while Liverpool prices of most foreign growths were somewhat lower than in 1932-33. Prices of American cotton increased still further relative to foreign cotton during the early part of the present season.

The probabilities of further expansion in cotton production in foreign countries during the next few years over present high levels vary materially from one country to another. In Egypt no very great increase is expected within the near future in view of its long-established system of crop rotation designed to maintain the fertility of the soil and the necessity for devoting much of the land to the production of food crops, unless more of the country's food requirements are imported. There seems to be little likelihood of much expansion in

cotton production in other parts of Africa where production and marketing costs are high and the natives (most of whom lead a very primitive life) are not particularly interested in cash incomes or in changing their methods of living. It seems probable that further expansion in cotton production in Russia in the immediate future will be slow. The emphasis now being placed on the development of consumption-goods industries and the plan for a marked increase in the output of cotton textiles suggests that Russia may increase its imports of raw cotton rather than export significant quantities to compete with American cotton in foreign markets.

The Chinese Government is making special efforts to encourage the development of its cotton production, but inadequate transportation facilities, the great need for food and feed crops, and in some sections the lack of rainfall tend to restrict expansion. The low per-acre yields of cotton and other crops, and the need for utilizing the land for the production of food and feed crops seem likely to retard expansion in cotton production in India. The availability of suitable land and the efforts of the Brazilian Government to encourage cotton production indicate that some further expansion in cotton production in Brazil over the present high level may occur during the next few years, although the production increases in this and the preceding season have been partly due to extraordinarily favorable weather. However, cotton production in northern Brazil is limited by scarcity of labor, inadequate transportation facilities, and uncertainty of adequate rainfall, and in southern Brazil by the competition of cotton and coffee for the limited labor supply.

SUPPLY

ALL COTTON

Information available in late October indicates that, although the world supply of foreign cotton in the 1934-35 cotton season will be considerably larger than in the previous season, the total supply of all cotton will be materially smaller, owing to a decline of about 4,550,000 bales in the supply of American cotton. Should the tentative estimate of total foreign production in the 1934-35 prove to be approximately correct, the supply of foreign cotton for the season will be around 1,600,000 bales (of approximately 478 pounds) larger than the previous season, about 1,000,000 bales of which are accounted for by an increase in the carry-over at the beginning of this season. The total supply of all cotton seems likely to be in the neighborhood of 39,200,000 bales, compared with slightly more than 42,100,000 bales in the previous season and an average for the 10 years ended July 31, 1933, of slightly less than 35,700,000 bales.

AMERICAN COTTON

The world supply of American cotton is now down to about average, the indicated supply for the 1934-35 season being slightly less than 20,100,000 bales, compared with an average for the 10 years ended 1932-33 of about 20,400,000 bales. This supply for the current season is approximately 4,550,000 bales less than the 1933-34 supply and nearly 5,900,000 bales below the extremely large supply in each of the two seasons 1931-32 and 1932-33. The sharp decline in the world supply of American cotton since 1932-33 reflects both the reduction in production and a larger consumption in the last two seasons than in the three preceding seasons.

The indicated world supply of American cotton for the current season is made up of an estimated carry-over of 10,600,000 bales, and a crop which as of October 1 was estimated at nearly 9,450,000 bales. The estimated production is 3,600,000 bales less than the previous crop, about 5,200,000 bales less than average production in the 5-year period 1928-32, and accounts for the greater part of the decline in the current season's supply. This year's domestic crop, as estimated in October, is the smallest, with the exception of 1921, since 1899. The unusually small crop is the result both of the smallest indicated acreage for harvest since 1901 (due to the voluntary cotton-adjustment program and the Bankhead Act), and of extremely low yields in the western part of the Cotton Belt resulting from the drought.

The indicated area for harvest in 1934 of 27,241,000 acres is 9 percent less than the acreage harvested in 1933, 13,313,000 acres or 33 percent less than the average for the 5-year period 1928-32 and the smallest since 1901. Without the cotton-adjustment program or the Bankhead Act in 1934, the cotton acreage

in this year would probably have equaled or exceeded the 40,852,000 acres planted in 1933, since cotton prices in the latter part of 1933 and early 1934 were materially higher both actually and relative to competing crops and to costs than in earlier months, largely owing to the depreciation in the foreign exchange value of the dollar and the 1933 adjustment program.

Prospects as to the supply of American cotton in the 1935-36 season depend to a considerable extent upon the plans and accomplishments under the Agricultural Adjustment Administration in the control of the acreage planted in the spring of 1935. As yet no announcement has been made of the acreage to which it is planned to adjust plantings. There will be an increase in the acreage planted in 1935 over that of 1934, as the adjustment contracts which cover both years provide for a maximum reduction in 1935 of 25 percent from the grower's base acreage, whereas in 1934 the contract signers planted 38 percent less acreage than during the base period. Although conditions in late October indicate that world consumption of American cotton in the current season will be considerably lower than during the 1933-34 season, the carry-over on August 1, 1935, will be materially lower than a year earlier. The 1935 crop, therefore, could be substantially increased without any increase in the supply of American cotton for the 1935-36 season.

FOREIGN COTTON

Although the present (late October) estimate of total foreign cotton production in 1934-35 is only tentative, it seems probable that the new crop will be larger than the record 1933-34 crop by something like 600,000 bales (of 478 pounds). This would give a total crop in foreign countries of slightly more than 13,600,000 bales. The amount of the expected increase in the total foreign production is due largely to an estimated increase of 200,000 bales in China, 300,000 bales in India, 300,000 bales in northern Brazil, and small increases in some minor producing countries, with decreases in Egypt and Russia and elsewhere. With the carry-over of foreign cotton on August 1, 1934, something like 1,000,000 bales larger than at the beginning of last season, the indications are that the 1934-35 supply of foreign cotton will be around 1,600,000 bales larger than the record supply of the previous season and something like 3,900,000 bales, or 25 percent, larger than the average for the 10 years ended 1932-33.

The world supply of Indian cotton, the most important competitor of American cotton, for the 1934-35 season will probably be around 750,000 bales larger than in 1933-34, when the supply totaled nearly 6,700,000 bales. The indicated supply of Indian cotton for the 1934-35 season is the largest for 6 years and something like 600,000 bales, or 9 percent, larger than the average for the 10 years ended 1932-33. Although it is too early to know very definitely what the 1934-35 Indian crop will be, the consensus of opinion of the members of the Bombay cotton trade, and other information, indicate that it will be possibly 300,000 bales larger than the previous crop. The official estimate of plantings up to October 1 showed an increase over plantings to the same date last year of 3 percent. Stocks of Indian cotton at the beginning of the 1934-35 season were larger by nearly 450,000 bales, or 18 percent, than at the beginning of the previous season and were 600,000 bales larger than the 10-year average.

The indications in late October were that the world supply of Egyptian cotton for the 1934-35 season of about 2,700,000 bales will be slightly less than that of the previous season, which was the second largest on record. The carry-over at the beginning of the current season was about the same as a year earlier, and the official estimate of the 1934 crop was about 100,000 bales less than the record crop of 1933, although ginnings up to October 1 were 74 percent larger than for the corresponding period a year earlier.

Late October estimates were that the 1934-35 Chinese cotton crop would be equivalent to about 2,900,000 bales. This is 200,000 bales larger than the previous crop and 800,000 bales larger than the average production during the 10 years ended 1932-33. With stocks of Chinese cotton in consuming establishments and in ports in China at the beginning of the 1934-35 season larger than a year earlier, the indications in late October were that the supply for the season would be considerably larger than for the 1933-34 season.

The 1934 crop in Russia in late October was expected to be somewhat smaller than in the previous season, but stocks of Russian cotton held by mills at the beginning of the present season were estimated by the International Federation at nearly 200,000 bales larger than a year earlier. The total supply of Russian cotton, therefore, may not be greatly different from that of the 1933-34 season.

No estimate of the 1934 crop has yet been received but such information as is available indicates that the crop may be as small as 1,700,000 bales. This compares with the latest official estimate of 1933 of nearly 1,900,000 bales, and an average for the 10 years ended, 1932-33, of 1,100,000 bales. Since 1931, when the Russian crop was estimated at 1,800,000 bales, production in Russia has remained fairly constant.

The first estimate of the 1934-35 crop in northern Brazil placed the production in those States at about 750,000 bales. This represented an increase of about 60 percent over that of 1933-34, and nearly 90 percent over the average for the 5 years ended 1932-33. No estimate has been received of the acreage in cotton in the northern States in 1934-35, but there must have been a considerable increase, as it does not seem probable that the marked increase in production was due entirely to increased yields per acre since yields per acre were fairly large the previous season. The 1934-35 Brazilian crop produced in the southern States of Brazil, where cotton is planted in September, October, and November, will not be harvested until the latter part of the 1934-35 cotton season. There is little information available, therefore, as to the probable crop in these States, although some increases in acreage over the record acreage of last season is expected. Yields per acre in these States were unusually large in 1933-34.

CONSUMPTION

WORLD

The total world mill consumption of cotton of all growths during the cotton season ended July 31, 1934, amounted to 25,094,000 running bales, according to data released by the International Federation of Master Cotton Spinners' and Manufacturers' Associations. This represented an increase of 741,000 bales, or 3 percent, over the 24,353,000 bales reported for the 1932-33 season, and was the largest since 1929-30, when 25,201,000 bales were consumed. The increase of 1,373,000 bales (13 percent) in total foreign-grown cotton more than counterbalanced the decline of 632,000 bales in the consumption of American cotton. Consumption of sundry cottons (all foreign growths other than Indian and Egyptian) increased 649,000 bales, Indian 550,000 bales, and Egyptian 174,000 bales.

Most of the decline that occurred in the consumption of American cotton last year as compared with 1932-33 is accounted for by a decline of 450,000 bales, or 7 percent, in the United States. Consumption of American cotton outside the United States declined 182,000 bales, or 2 percent. A decrease of about 331,000 bales in China and smaller declines in India, Italy, and France were only partly offset by increases in Germany, United Kingdom, Russia, and Japan. Practically all the increase that occurred in the consumption of foreign cotton took place outside the United States, largely as a result of substantial increases in the supplies of foreign cotton, a decrease in the world supply of American cotton, and increased mill activity in most foreign countries. The marked increase in the domestic prices of cotton goods due to much higher cotton prices and increases in other costs of manufacturing goods tended to restrict domestic cotton consumption in 1933-34, while foreign consumers had to pay only slightly more for cotton and cotton goods in 1933-34 than in the previous season.

Total world consumption of American cotton in the 1933-34 season was reported at 13,539,000 bales. Although this was 632,000 bales less than that of 1932-33, it was the largest with the exception of that season since 1928-29, and was slightly larger than the average for the 10 years, 1923-24 to 1932-33. The prospective increase in the 1934-35 supply of foreign cotton and the much smaller supply of American cotton, along with the relatively higher prices of American, point to further decreases in the proportion of American to foreign cotton consumed during the 1934-35 season. This, together with present prospects for little if any increase in the total world consumption of all cotton during the current season, indicates a further reduction in the world consumption of American cotton in 1934-35.

The world mill consumption of Indian cotton during the 12 months ended July 31, 1934, was reported at 4,770,000 running bales of approximately 400 pounds each. This represented an increase of 550,000 bales over that of the previous season, but it was with that exception less than in any season since 1927-28. The average world consumption of Indian cotton during the last 10 years was 5,236,000 bales. The increase in the world consumption of Indian

in 1933-34 occurred despite the fact that consumption in India declined about 2 percent. The increase in the consumption in other countries was equivalent to about 30 percent. A substantial part of the increase in consumption of Indian cotton occurred in Japan. Total mill consumption in Japan increased about 350,000 bales and the proportion of Indian to the total increased, while the proportion of American declined. There was also an increase in consumption of Indian cotton in Europe owing both to the higher level of mill activity and to an increase in the proportion of Indian to the total. The indicated larger supply of Indian cotton for the current season and a smaller supply of American point to a further increase in the ratio of Indian cotton to the total mill consumption this season.

The world consumption of Egyptian cotton in 1933-34 increased about 19 percent over that of 1932-33 and was larger than in any other year. The peak consumption of Egyptian cotton reached in 1933-34 is accounted for by an increased demand for longer staple cotton, and the marked increase in Egyptian cotton production due in part to the modification of the acreage-restriction law. In some of the earlier years of record supplies, consumption of Egyptian cotton was curtailed by the Egyptian Government's policy of holding large quantities of cotton off the market in an attempt to strengthen prices, whereas in the last 2 or 3 years the Egyptian Government has been disposing of this cotton on rather favorable terms, and allowing current crops to move freely into consumption.

During the 1933-34 season, world mill consumption of sundry cottons amounted to 5,677,000 running bales, which was 649,000 bales or approximately 13 percent larger than for the previous season and was the largest on record. The largest mill consumption of sundries previously reported by the federation was in 1929-30 when it amounted to 5,162,000 bales. The increased consumption of sundry cottons in 1933-34 is largely accounted for by increased consumption of Russian, Chinese, Brazilian, and Mexican cotton within these countries, along with some increases of sundries in other European countries, in Japan, and in India. With an indicated increase in the 1934-35 supplies of sundry cottons, particularly Chinese and Brazilian, and the smaller supply and relatively higher prices of American, it is reasonable to expect that the ratio of the consumption of sundries to the consumption of American will increase in 1934-35.

The unfavorable situation for the consumption of American cotton in foreign countries accounts in part for the unusually low exports of American cotton during the first quarter of 1934-35. Exports of American cotton unofficially reported for the first 3 months of the 1934-35 season at about 1,300,000 bales were less by about 1,150,000 bales, or, say, 47 percent, than for the corresponding period a year earlier, and about 900,000 bales, or about 40 percent, less than the average for the 10-year period ended 1932-33. Total exports during the 1933-34 season amounted to 7,534,000 bales, or 10 percent less than for the previous season, and were slightly less than the average for the 10-year period ended 1932-33.

Exports so far this season have been retarded by a combination of unfavorable circumstances. With the marked increase in their supplies, foreign cottons are generally available at prices which, with the shortened supply and restrained marketings in this country, are relatively cheap as compared with prices of American cotton. In Germany, and to a lesser extent in certain other European countries, acute shortages of foreign exchange have limited purchases. Moreover, futures-spot price relationships have discouraged the accumulation of stocks of American cotton abroad to the extent usually expected in the months of heavy crop movement and tended to put foreign importing on a hand-to-mouth basis. That consumption of American cotton in other countries has proceeded, however, at a more nearly normal rate than exports is indicated by the fact that the season's takings of American cotton by mills abroad up to the last week of October were but 37 percent below the total at the same time last year. There is also some reason to believe that mills have tended to use up their stocks of American cotton in the fall months more rapidly than they have replenished them, although definite figures are not yet available.

UNITED STATES

After increasing sharply during the previous season, mill consumption of cotton in the United States declined about 7 percent during 1933-34. Total

mill consumption in that year amounted to 5,670,000 running bales, as compared with 6,110,000 bales during 1932-33 and 4,844,000 in 1931-32. Consumption during 1932-33 was about equal to the average annual consumption during the 10-year period ended with that year and was larger than for any other year since 1928-29.

The unusually large production of cotton goods during the 3 months prior to the beginning of the 1933-34 season was about equal to sales, so that there was no accumulation of excessive stocks of cloth in cotton mills during this period. Cloth production continued at a comparatively high rate during the first 4 months of the 1933-34 season, but production exceeded sales, and the total stocks of cloth in cotton mills in December were nearly double those at the beginning of the season. As a consequence of this accumulation of stocks mill activity was curtailed during December in accordance with an order of the Cotton Textile Code Authority, and mill consumption that month dropped to only 350,000 bales. Mill consumption rebounded to high levels from January through May, but, except during January and part of February, production continued to exceed sales resulting in a further accumulation of stocks, and mill activity during the last 2 months of the 1933-34 season was again curtailed.

Domestic mill consumption in September 1934 was unusually low, largely as a result of the textile strike, and during the first 2 months of the 1934-35 season averaged only about 350,000 bales, as compared with 544,000 bales for the corresponding months the year before and over 448,000 bales 2 years before, and was the lowest for the period on record. Although cloth stocks were less burdensome after the strike than before and mill activity during October was only a little less than for the corresponding month a year ago, sales of unfinished cotton goods continued rather small. During the first 3 months of the current season manufacturers' sales of cotton goods were somewhat above the restricted output, but stocks continued very large. The dollar volume of retail sales of cotton clothing and household goods was maintained at a level above that for a year ago during the early months of the current season, but retail prices have advanced substantially and have probably increased the tendency to substitute products made from other fibers for those made of cotton. Sales of cotton fabrics to industrial users have been retarded by the recession in industrial activity which has continued into the fall months, and by an accumulation of stocks of certain finished goods such as automobile tires and artificial leather which contain considerable quantities of cotton. Thus the indications are that the domestic consumption of cotton in the 1934-35 season will probably be no more and possibly somewhat less than in the previous season. Any material improvement in business activity, however, would doubtless stimulate cotton consumption by increased consumer purchasing power and by the increased use of cotton fabrics for industrial purposes.

EUROPE

Mill activity for Europe as a whole was higher in 1933-34 than in any season since 1929-30. Total consumption of all cotton last season amounted to 9,943,000 running bales, an increase of slightly more than 1,000,000 bales over that of the previous season. The average consumption in Europe for the 10 years ended July 31, 1933, was about 9,700,000 bales. Most of the principal European countries showed some increase in mill activity in 1933-34 compared with the previous season, but the greatest increase among the more important countries occurred in Germany, where total consumption was the largest, with one exception, since the World War. Consumption of American cotton in Europe for the year ended July 31, 1934, amounted to 5,441,000 bales, which was a slight increase over the previous year and the largest since 1929-30. Europe's consumption of Indian cotton was larger than in either of the two previous seasons, and the consumption of Egyptian was the largest in history. Consumption of sundry cottons in Europe was larger than in any other year for which data are available, with the exception of 1929-30.

Total consumption in Great Britain last season amounted to 2,470,000 bales. This represented an increase of 222,000 bales over the previous season and was slightly larger than in any other season since 1928-29. This increase reflects the improvement in general demand conditions within Great Britain as exports of cotton goods from Great Britain, which are roughly equal to about one-half of its output, were less than during either of the three previous seasons. Con-

sumption of American cotton in Great Britain was reported at 1,461,000 bales. This was 61,000 bales larger than a year earlier and about equal to that of 1929-30. Consumption of Indian cotton increased from 126,000 bales in 1932-33 to 234,000 bales last season. Egyptian increased 65,000 bales and totaled 366,000 bales. Consumption of all other types of cotton totaled 409,000 bales, which was slightly lower than a year earlier and the lowest since 1928-29.

Consumption on the Continent of Europe during the 1933-34 season again increased, and was also the highest since 1929-30. Germany, the most important consumer of cotton in the Continent, consumed a total of 1,524,000 bales. This compares with 1,212,000 bales the previous season, and was only 61,000 bales less than in 1927-28, when Germany's consumption reached its post-war peak. Consumption of American cotton in Germany in 1933-34 amounted to 1,056,000 bales, an increase of 133,000 bales over 1932-33 and was the largest, with the exception of 1926-27 and 1927-28, since the World War. In France and Italy total cotton consumption showed a slight increase during 1933-34, but in both countries there was a small decline in the consumption of American cotton. Consumption of Indian, Egyptian, and sundry cottons all showed increases in France and consumption of Indian and Egyptian increased in Italy.

Total consumption of cotton in Russia increased in both 1932-33 and 1933-34 after reaching a comparatively low level in 1931-32, and the consumption of sundry cottons (mainly Russian) was higher than in any other year. The estimated consumption of all cotton in Russia in 1933-34 was 1,885,000 bales, of which 1,792,000 bales (reported as sundries) were mainly of Russian growth, and 60,000 bales of American. During the period 1922-23 to 1929-30, Russia consumed on the average slightly more than 300,000 bales of American cotton, but since that time has used comparatively little. This is accounted for by the fact that in the last 4 years Russia's production of raw cotton has been two and one-half times as large as the average from 1922 to 1929.

With enforced restrictions on mill activity in Germany and curtailment of operations now in effect in Italy, parts of France, and other European countries, and with prices of cotton goods high, relative to prices of other textiles, it seems probable that cotton consumption in Europe during the 1934-35 season will be below that of last season. Monthly cotton consumption in Germany is now restricted, by a decree, to a level about 25 to 30 percent below the average for the 1933-34 season. This restriction is the result of Germany's inability to obtain foreign exchange with which to buy raw cotton. A continuation of this rate of curtailment throughout the season would result in a total cotton consumption in Germany of about 500,000 bales smaller than last season. Germany is undertaking to negotiate exchange agreements with other countries for raw cotton and is encouraging the use of artificial fibers which may reduce the consumption of American cotton. Italy and Poland are also having considerable difficulty in obtaining foreign exchange and are also contemplating trade agreements with cotton-producing countries and in Italy the substitution of artificial fibers for cotton is also being encouraged. These factors, plus the relatively high prices of American cotton as compared with other cottons, point to a considerable decline in consumption of American cotton in Europe during 1934-35.

ORIENT

Total consumption in Japan amounted to 3,252,000 bales during 1933-34, or an increase of 352,000 bales over the previous season, and was larger than in any other year. Consumption of American cotton, however, remained practically the same, the gain in Indian accounting for most of the total increase, although consumption of sundry growths more than doubled, increasing from 79,000 to 189,000 bales. The high level of consumption in Japan in 1933-34, as in the season before, was accounted for by increased exports of cotton textiles. Total exports of cotton cloth from Japan during the 12 months ended July 31, 1934, amounted to almost 2,400,000,000 square yards, compared with 2,200,000,000 square yards the year before, and was the largest on record. Japan's high level of exports in 1933-34, as well as the year before, followed the marked depreciation of the Japanese currency in the latter part of 1931, which was an important factor making it possible for Japanese goods to undersell similar products in most of the import markets of the world. In addition, special efforts were made, both by the Government and by exporters, to expand and develop markets for Japanese goods. Japan's marked expansion in exports of cotton goods has been to a considerable degree at the expense of Great

Britain. During the 1933-34 season, Great Britain exported less than 2,000,000 square yards of cloth, whereas during the middle 1920's its average exports per season were more than 4,000,000,000 square yards.

Mill activity and cloth exports were at very high levels during the first part of the present season, and Japanese exporters, with the aid of the Government, were continuing their efforts to expand their cloth markets. Information in late October indicates that Japan may be able to continue to export large quantities of cotton goods, and it is possible that total mill consumption in Japan for the 1934-35 season may again show some increase. Japanese spinners are now using relatively more foreign-grown cotton, particularly Indian, in place of American, and as a result it is expected that consumption of American cotton in Japan will possibly be about the same as or somewhat less than in 1933-34.

Cotton textile-mill activity in China during last season declined somewhat from the high level reached in 1932-33, but with that exception was higher than in any other season. Total mill consumption in 1933-34 amounted to 2,383,000 bales (reported as of 500 pounds) compared with 2,601,000 bales the previous season, and an average for the 10 years ended 1932-33 of slightly more than 2,000,000 bales. Despite the decline in total consumption, the consumption of sundry cottons, largely Chinese, increased 116,000 bales, the decline in the total being due to a drop of 331,000 bales in the consumption of American cotton. Consumption of American cotton, which amounted to 417,000 bales, was larger, however, than in any season prior to 1931-32. With the new Chinese crop expected to be still larger than that of 1933-34, it seems reasonable to expect that consumption of American cotton in China during the present season will again decline despite the fact that reports indicate that total mill consumption may be equal to that of 1933-34.

Mill activity in India during the last season was slightly less than in either of the two previous seasons, but was equal to or larger than in any other season. The total consumption in 1933-34 amounted to 2,514,000 bales, which was 121,000 bales less than in the previous season and 186,000 bales less than the peak consumption of 1931-32. The greatest decline occurred in the consumption of American, which dropped from 135,000 to 40,000 bales. Consumption of Indian declined slightly despite the larger supplies of this cotton, and consumption of Egyptian and sundry growths was about the same as in 1932-33.

PRICES

Throughout most of the 1933-34 season cotton prices in domestic markets showed a rather constant upward trend. The lowest daily average of Midling $\frac{3}{8}$ -inch cotton in the 10 designated markets during the season was 8.32 cents, which occurred in August, the first month of the season, and the highest price of 13.05 cents occurred in July, the last month of the season. The average for the entire season was 10.81 cents, which was 3.66 cents, or 51 percent higher than the average in these markets during 1932-33, and almost twice as high as the average for 1931-32 of 5.89 cents. The weighted average farm price of cotton in 1933-34 amounted to 9.7 cents, compared with 6.5 cents the season before, 5.7 cents in 1931-32, and was the highest since 1929-30. It is estimated that farmers who cooperated in the 1933 adjustment program produced about 3,386,000 bales. In return for their cooperation they received rental and benefit payments and estimated profits on options totaling about \$164,600,000, or the equivalent of about 3.9 cents per pound for the cotton they produced. This, plus the weighted average farm price of 9.7 cents, gave the cooperating producers the equivalent of about 13.6 cents per pound for their cotton during the 1933-34 season. The total farm value of the 1933 crops, plus the payments (including estimated profits on options) received for cooperating in the adjustment program and the estimated income from cottonseed, was nearly \$850,000,000, compared with the estimated total farm income from cotton and cottonseed in 1932-33 of about \$464,000,000.

The principal factors responsible for the advancing prices throughout the 1933-34 season were the declining supplies of American cotton and the depreciation in the foreign-exchange value of the dollar. The effects of these factors were sufficient to cause cotton prices to advance rather steadily despite larger supplies of foreign cotton, with a shifting from American to other growths in foreign consuming countries and a decline in domestic consumption.

From the peak reached the first few days of the current season to the end of October domestic cotton prices declined about $1\frac{1}{4}$ cents per pound. But

during this period Middling $\frac{7}{8}$ -inch cotton in the 10 designated spot markets averaged about 12 $\frac{3}{4}$ cents per pound, compared with an average of 10.81 cents for the 1933-34 season and 7.15 cents the season before, and was the highest since the spring of 1930. The average United States farm price during August, September, and October was about 12.9 cents. It is estimated that the total payments to producers for cooperating in the 1934 adjustment program will amount to about \$116,000,000. This is equivalent to about 2.9 cents per pound on the estimated production of the cooperating farmers, and this, plus the average price received during the first 3 months of the current season, is equivalent to 15.8 cents per pound. On the basis of prices received during the first 3 months of the current season for cotton and cottonseed and the October estimate of production it is estimated that the farm value of the 1934-35 domestic cotton crop plus payments for cooperating in the adjustment program is somewhat less than in 1933-34, but the largest with that exception since 1929-30.

The average domestic price of Middling $\frac{7}{8}$ -inch cotton in 1933-34 was about 51 percent higher than in the previous season and 84 percent higher than in 1931-32. Including the processing tax the cost of cotton to domestic mills was about twice as high last season as the season before and 150 percent higher than in 1931-32, but in September the cost of cotton represented about the same proportion of the wholesale prices of unfinished goods as in the 5 years ended 1929-30. The average price of American Middling in Liverpool in terms of British currency in 1933-34 was only 7 percent higher than the previous season and 25 percent higher than two seasons earlier. The increase in 1933-34 as compared with 1932-33 in the price of American cotton in most other countries was also much less than that which occurred in the United States, since a substantial part of the increase in domestic prices was due to the decline in the foreign-exchange value of the dollar. Prices of foreign cotton in most foreign countries did not advance as much over the previous two seasons as did American. In Liverpool three of the principal types of Indian cotton in 1933-34 averaged respectively 9 percent lower and 2 percent higher than in the previous season and the season before, while Egyptian Sakellaridis averaged 4 and 19 percent higher, respectively, and Egyptian Uppers averaged 5 percent lower and 17 percent higher. In China, native Chinese cotton was 6 percent lower than in the previous season. The fact that foreign consumers had to pay considerably less for cotton and cotton goods relative to the previous season than did consumers in this country accounts in part for the increase in foreign cotton consumption as contrasted to the decrease in this country.

During the 1933-34 season the price of three types of Indian cotton at Liverpool averaged 74 percent of the price of American Middling and Low Middling. This compares with 87 and 89 percent in 1932-33 and 1931-32 and a 10-year average ended 1932-33 of 81 percent. During the first 2 months of the 1934-35 season the three types of Indian average 67 percent of the price of the two grades of American which was the lowest since the summer of 1930 and much lower than the 10-year average. The prices of American relative to Egyptian, Chinese, and other foreign growths were also much more favorable to the use of foreign growths than during other recent years.

To a large extent the relatively lower prices of foreign cotton as compared with American are due to larger supplies of foreign cotton and smaller supplies of American. However, another factor also contributing to the relatively high prices of American cotton is the strong holding movement resulting, in part, from the Commodity Credit Corporation's 12-cent loan.

STAPLE SITUATION

Premiums in cents per pound for staples longer than seven-eighths inch cotton, after reaching a low point in 1932, widened as prices advanced during the last part of 1932-33 and during 1933-34. Since August 1, 1934, premiums for staples fifteen-sixteenths to one and one-sixteenth inches, inclusive, have widened somewhat, whereas premiums for staples one and one-eighth inches and longer have narrowed. Discounts for staples thirteen-sixteenths inch, after reaching a narrow point in 1932-33, widened as prices advanced, and in September 1934 were wider than at any other time since 1931. When expressed as percentages of the middling seven-eighths inch, price premiums for the longer staples and discounts for the shorter staples narrowed during the season 1933-34, and in August and September 1934 were slightly narrower, for the most part, than during the corresponding periods in 1932 and in 1933.

The indicated domestic supply of American cotton with staples seven-eighth inch and shorter for the season 1934-35 is approximately 1,000,000 bales less than a year earlier, about 2,600,000 bales less than in 1932-33, nearly 4,000,000 bales less than in 1931-32, and considerably less than for any other season since records became available in 1928-29. The influence of this decrease in supply of these shorter staples in the United States on prices is counterbalanced to some extent at least by an increase in the supply of Indian and Chinese cotton, most of which is seven-eighths inch and shorter in staple.

The domestic supply of the medium staples (fifteen-sixteenths inch to one and three thirty-seconds inches, inclusive) in 1934-35 is apparently about 2,800,000 bales less than for either of the two preceding seasons. This decrease was due in part to the smaller total 1934 crop and in part to the smaller proportion of the medium staples in the 1934 crop, resulting to some extent from the drought.

The domestic supply of cotton with staples one and one-eighth inches and longer, for the season 1934-35, is apparently slightly larger than that for the 1933-34 season and considerably larger than for any other season since records became available in 1928-29. This increase in supply of the longer staple American cotton is supplemented by an increase in supply of these lengths produced in foreign countries, due largely to an increase in the supply of Brazilian cotton, a considerable proportion of which is of staples one and one-eighth inches and longer.

POTENTIAL COTTON PRODUCTION IN FOREIGN COUNTRIES

The question of potential cotton production in foreign countries is of very great importance to American cotton growers, particularly in view of the present cotton-adjustment program in the United States. Cotton production in foreign countries in 1933-34 was about 25 percent above the recent low point reached in 1931-32, about 6 percent above the previous high point reached in 1928-29, and about 18 percent higher than the average for the 10 years ended 1932-33. Cotton acreage in foreign countries in 1933-34 was about 9 percent higher than the recent low point reached in 1932-33, about 5 percent higher than the previous high point reached in 1925-26, and 10 percent greater than the 10-year average. In considering acreage and production in the United States and abroad, it should be borne in mind that the long-time trend has been upward in foreign countries as well as in the United States, and that expansion in the United States could again take place probably with as great rapidity as did the reductions of recent years. The new peak in acreage and in production reached in 1933-34 is largely accounted for by the fact that Russia's cotton acreage and production in recent years have been at much higher levels than in previous years and by the fact that acreage and/or production were about equal to or higher than that of any previous year in China, Brazil, Egypt, and a few less important cotton-producing countries, and by the return to more normal production in some other countries, notably India. The probabilities of further expansion can best be indicated by an examination of conditions in specific countries.

INDIA

Although cotton production in India in 1933-34 was about 23 percent higher than the small crop of 1931-32, production was still about 20 percent and acreage about 16 percent below the peak year of 1925-26. From the standpoint of land suitable for cotton production, it would appear that India has ample room for expanding its cotton-growing industry. But this expansion is limited by the requirements of land for the production of food crops to support the dense population, particularly in view of the very low yields per acre and the fact that in some sections of India transportation facilities are inadequate. Although there are possibilities of extending the area in crops and/or of increasing yields per acre by means of irrigation, any material expansion in cotton production in India in the immediate future would probably replace large areas of land used in the production of food crops. With average yields in India of only about 80 pounds of lint cotton per acre, an expansion in area necessary to increase the total production of Indian cotton by 1,000,000 bales would reduce the area available for food and other crops by about 6,000,000 acres. Although the low per acre yields and the increasing population re-

quiring additional land for food are important factors limiting further expansion of cotton production in that country, it is believed that favorable prices for cotton relative to other crops might result in a considerable further expansion in cotton production in India.

CHINA

Cotton acreage and production in China have continued to expand during recent years and in 1933-34 were considerably greater than for any recent year and both were about 30 percent above the average for the 10-year period ended 1932-33. China, with the exception of India, is the largest foreign cotton-producing country although not a large exporter of cotton. Like India, this country has considerable areas of land fairly well suited to cotton growing, but the production of cotton is decidedly limited in many sections of China by land requirements for food crops and by inadequate transportation facilities.

The northern Provinces appear to possess the greatest possibilities for expanding cotton acreage. The Chinese Government, by an increased tariff on raw cotton, the providing of production credit, the distribution of cottonseed, and other means, is making an effort to stimulate production and improve marketing facilities in this area, but rainfall in some of the leading cotton districts of the northern Provinces is very irregular and yields fluctuate considerably from season to season. Expansion in other Chinese areas appears to be limited by transportation, rainfall, and the requirements of food and feed crops. There are several large areas in China where cotton is now grown and where the expansion of production might be expected if adequate transportation facilities were available. But until these areas are open to domestic commerce it is not probable that they will produce much cotton beyond that required for consumption in local areas. There are also possibilities of increasing yields in the areas in which cotton is now produced and of bringing into production new lands by the construction of irrigation works. Although these conditions indicate the possibilities of considerable further expansion in cotton production in China, the extent to which further expansion will probably occur within the next few years is likely to be determined to a considerable extent by the success of the cotton program of the Chinese Government and by developments within the cotton-textile industry in China. The low level of per-capita cotton consumption in China suggests the possibility of considerable increase in the consumption of cotton there if the reforms in agricultural conditions now contemplated are successful.

EGYPT

The marked expansion in cotton acreage in Egypt in 1933-34 over the restricted acreage the previous year represented a return to more normal acreage for that country. The 1933-34 acreage was about 5 percent above the average for the 10-year period ended 1932-33, but was somewhat less than that of 1925-26, 1929-30, and 1930-31. Production in 1933-34 was the highest on record owing in part to unusually high yields and was about 22 percent above the average for the 10-year period ended 1932-33.

It is thought that the Egyptian cotton acreage is not likely, within the near future, to exceed materially that of the previous maximum. The reasons are physical as well as economic. Egypt has an area of about 8,500,000 acres, of which about 5,500,000 acres are under cultivation. The population of 15,000,000 people existing on this 5,500,000 acres makes it necessary that much of the land be devoted to food crops. In addition to the requirement of land for food, there is a definite system of rotation designed to maintain soil fertility. This tends to prevent the planting of cotton more than 1 year in succession upon the same land. Any permanent increase above the past maximum acreage will necessitate the reclaiming of additional land, which is very expensive, and/or a further substitution of cotton for food crops, which, unless cotton prices advance materially either actually or relatively, is not likely to take place.

Although much expansion in the cotton acreage in Egypt during the next few years does not appear probable, there is a tendency to replace the extra long staple, lower-yielding varieties with shorter-staple, higher-yielding varieties more nearly comparable in quality with the long-staple upland cotton produced in the United States. If this shift continues, it will tend to increase the average yield per acre, the total production, and the quantity of cotton similar to the long-staple upland varieties of the United States.

AFRICA OUTSIDE OF EGYPT

The principal African cotton areas outside of Egypt are the Anglo-Egyptian Sudan, Uganda, the Belgian Congo, Nigeria, and a few other small areas. All of these countries are comparatively new in the production of cotton, and, from the standpoint of suitable land, some apparently have possibilities for considerable expansion in cotton production. But conditions in most of these countries indicate difficulties in connection with further expansion. Chief of these are the lack of transportation facilities, the scarcity of efficient labor, and diseases and insect pests. In the Anglo-Egyptian Sudan, cotton production depends to a considerable extent upon governmental policy. Little further expansion is thought possible without the expenditure of a considerable amount of money for irrigation or transportation facilities, or both. In the regions of the Sudan in which cotton is grown by rainfall the country is exceedingly dry for half the year, and the native cotton growers are compelled to move their villages from the plains to the rivers and watering places. The primitive life of the natives and their utter lack of interest in changing their methods of living throughout the whole of the African district tend to retard cotton production. In some of the areas of Africa where cotton is produced it is carried for miles on the heads of the native growers to gins, then transported for several hundred miles by river boat, by animal pack train, or by rail at high freight rates. Cotton prices are not sufficient under ordinary conditions to stimulate production in these countries, where the population is not particularly interested in cash incomes and where transportation costs are very high.

RUSSIA

Following the marked expansion from 1921-22 to 1931-32 cotton acreage and production in Russia have remained at relatively high levels, and in 1933-34 production was about 71 percent larger than the average for the 10-year period ended 1932-33 and 73 percent higher than the average for the 5 years ended 1916-17. Russia has experienced many difficulties in the last few years in its attempts at further expansion, and it seems probable that further expansion in the next few years will be slow. In 1930 and 1931 the Russian acreage increased 50 and 35 percent, respectively, yet production increased by only 24 and 16 percent, respectively. During the 3 years ended 1933-34 yields per acre averaged nearly 30 percent less than the average for the 5 years ended 1929-30. Through larger acreages and improved yields, Russia plans that its cotton production by 1937, the end of the second 5-year period, will be 70 percent larger than the approximately 1,778,000 bales produced in 1932-33.

On the other hand, the second 5-Year Plan calls for an expansion in production of cotton textiles from 2,459,000,000 meters (2,689,000,000 yards) in 1932 to 5,100,000,000 meters (5,577,000,000 yards) in 1937, or an increase of 107 percent, along with the erection of 15 new cotton-spinning mills with a total capacity of 3,000,000 spindles. From the low per-capita consumption of cotton in Russia and the increased emphasis on the development of consumption-goods industries it would appear improbable that Russia's production of raw cotton will exceed its domestic requirements, even if the Government's second 5-Year Plan, as regards cotton production, should succeed to a considerable extent. In fact, the plan for a greater expansion in its textile industry than in its raw-cotton production suggests that Russia may even increase its imports of raw cotton.

SOUTH AMERICA

Large undeveloped areas of South America appear to be suitable for cotton production. Much of the land is now in forest, however, and a heavy outlay of labor and capital will be required to place it under cultivation. Inadequate transportation facilities and the lack of sufficient labor are important factors restricting expansion of cotton production in South America.

Although considerable cotton is produced in Argentina and in Peru, Brazil is the principal cotton-producing country in South America. Cotton production in Brazil has increased rather steadily in the last few seasons. The 1933-34 crop, estimated at about 969,000 bales (of 478 pounds) is the largest crop on record and is about 76 percent larger than the average for the 10-year period ended 1932-33.

In northeastern Brazil cotton production is limited, however, to a considerable extent by the amount and distribution of rainfall. In the interior, where perennial cottons are grown, insufficient rainfall during the early planting season limits new plantings and reduces the yields. Cotton production in northeastern Brazil in 1932-33 amounted to only 226,000 bales, but the following year, with good rains, yields per acre were 73 percent larger, and the total production more than doubled that of the previous year. During the current season the most favorable growing conditions known have prevailed and the first official estimate of the 1934-35 crop is 750,000 bales.

In the southern district of Brazil, where American upland varieties are grown, the indications are that cotton acreage depends to a considerable extent on cotton prices relative to coffee prices. During several years prior to 1925-26 cotton prices in relation to coffee prices were high and cotton production in these areas increased, but from 1925-26 to 1930-31 coffee prices were relatively high and cotton production declined. With the decline in coffee prices in 1930, cotton again became relatively more profitable and production increased. The recent increases have taken place during a period of unusually low coffee prices. Coffee requires a large amount of labor and competes with cotton during the harvesting season. This condition, unless overcome by an increased labor supply, will tend to retard the expansion of one or both of these leading crops.

There was a very substantial increase in Brazil's total production in 1933-34, and a still further increase in the 1934-35 crop in the northeastern States, and in view of the large amount of available land and the efforts of the Brazilian Government to encourage production and the relatively high cotton prices in Brazil in the last year or two indicate that some further expansion in its cotton production may occur during the next few years. However, increases in production in Brazil are limited by scarcity of labor, inadequate transportation facilities, and uncertainty of adequate rainfall in the northeastern States, and by the competition of cotton and coffee for the limited labor supply in the southern States.

COTTONSEED

During the 1933-34 cotton season the average United States farm price of cottonseed on the 15th of each month showed a steady advance, from \$12.11 per ton in September to \$22.30 in July. During August, September, and October 1934 cottonseed prices made an additional marked advance, and on October 15 the average United States farm price was \$35.62—the highest since June 1929. The October 15 price was nearly 2½ times as high as the weighted average farm price of the 1933-34 season, almost 3½ times as high as the average for 1932-33, and was 31 percent higher than the average of the seasonal averages for the 10 years ended 1932-33. The marked increase in prices for cottonseed during 1933-34 and early 1934-35 reflected the following factors: The decline and prospective decline in the supply of fats and oil in the United States which compete with cottonseed oil (the most important cottonseed product), the prospects for a marked reduction in the 1934-35 production of cottonseed and, in turn, cottonseed products, the declining supplies of feedstuffs competing with cottonseed meal or cake and hulls, an increase in consumer income, and the decline in the gold value of the dollar.

The 1934-35 production of cottonseed is now expected to be about 28 percent less than the 1933-34 production, owing in part to the cotton-adjustment program and in part to the low yields in the western portion of the Cotton Belt resulting from the drought. The 1934-35 production of cottonseed will be the smallest, with the exception of 1921-22, since 1899. In view of the comparatively high prices of cottonseed, however, it seems likely that a somewhat larger-than-average proportion of the cottonseed produced will be sold to cottonseed-oil mills for crushing.

COTTONSEED OIL

During the 10 years ended 1932-33 the value of the crude oil produced from cottonseed represented about 53 percent of the total value of all crude products of cottonseed, according to reports from the Bureau of the Census. The 10-year average price of prime summer yellow cottonseed oil at New York during the period 1923-24 to 1932-33 was 8.83 cents per pound. In September this year cottonseed oil was 7.50 cents per pound compared with 4.61 cents in September last year and was the highest since April 1930.

Cottonseed oil is used largely in the production of compounds and vegetable shortenings. Lard is the principal competitor of cottonseed oil. During the 12 months ended September 1934 domestic production of lard amounted to 1,425,000,000 pounds. This compares with production of 1,692,000,000 pounds during the preceding 12-month period, or a decline of 16 percent. Furthermore, the outlook is for a low level of lard production during the 1934-35 hog-marketing season which began in October, and for a considerably below-average production in 1935-36. The 1934-35 production of lard is expected to be the smallest for at least 20 years. The actual and prospective decline in the production of lard, along with the many other factors affecting lard prices, resulted in an advance in the price of refined lard in Chicago from \$6.25 per hundred pounds in December 1933, to \$11.25 per hundred pounds in September 1934 and it is expected that lard prices will continue high at least through 1935. This situation will continue to give strength to cottonseed-oil prices and in turn to cottonseed prices.

In addition to the decline and prospective decline in the production of lard another rather important development during recent months which has contributed to the higher prices for cottonseed oil and, in turn, cottonseed, has been the imposition of excise taxes on coconut oil, palm oil, fish oils, and some of the other oils. This has already resulted in the use of larger proportions of cottonseed oil in the manufacture of oleomargarine and salad dressings and a decline in the proportion of palm oil in the manufacture of compounds and vegetable shortenings.

At the end of June 1934, stocks of cottonseed oil in factories and warehouses in the United States, reduced to a crude basis, amounted to 841,500,000 pounds, compared with 857,100,000 pounds a year earlier, or 2 percent smaller. At the end of September, however, stocks of cottonseed oil were 29 percent less than at the end of September last year. Stocks of coconut oil in the United States at the end of September were the largest since 1931, amounting to 214,700,000 pounds, compared with 150,000,000 pounds in 1933, or an increase of 43 percent. Total stocks of six other edible oils at the end of June were considerably larger than last year or the year before. Stocks of lard at the end of September, however, which totaled 128,000,000 pounds, were about 33 percent smaller than the unusually large stocks a year earlier, but were considerably greater than the 5-year October 1 average.

COTTONSEED MEAL AND HULLS

The short supplies of feed crops have been the most important factors resulting in the marked increase in the prices of cottonseed meal and cottonseed hulls. In September and October 1934 cottonseed meal averaged almost \$34 per ton, as compared with less than \$17 in October last year and a low point of less than \$12 a ton in 1932. Cottonseed hulls averaged about \$14 per ton during September and October 1934 in the Atlanta market, as compared with \$8 in October 1933 and \$6.62 in October 1932. Owing to the corn-production-adjustment program and to the severe drought, there has been a decline in the supplies of feed grains to the lowest level for the 1934-35 feeding season since 1881. The 1934 domestic-hay crop is the lowest in the 16 years for which comparable data are available. Although there has been a sharp reduction in the number of livestock in the United States, there has been a greater relative reduction in both grain and hay, so it is expected that the prices of cottonseed cake and cottonseed hulls will be maintained during the 1934-35 feeding season.

FEED CROPS AND LIVESTOCK

Supplies of feed grains (corn, oats, barley, and grain sorghums) for the 1934-35 feeding season are the smallest since 1881. The marked reduction was due primarily to the drought, which reduced yields, although the 1934 acreage of feed grains was reduced 9 percent under that of 1933 and was 10 percent under average (1927-31). The 1934 hay crop was the smallest in the 16 years for which comparable figures are available. Moreover, the loss of new seedlings in the drought area was extensive. Liberal use of low-grade roughage may offset a large part of the shortage of hay. Prospective 1934-35 supplies of high-protein feeds from domestic processing may be 90 percent of 1933-34 and only 70 percent of average, but almost the same quantities of wheat byproduct feeds appear available in 1934-35 as in 1933-34. Larger imports of feed grains and other feedstuffs to supplement the local shortage appear probable, but not in sufficient quantity to reduce materially the shortage of feed.

Livestock has been reduced more rapidly this year than in any previous year, and by January 1, 1935, numbers are expected to be only around four-fifths of those of a year earlier. The reduction was due partly to the Government's hog-adjustment program and partly to the drought of 1934, including natural liquidation because of feed shortage and the cattle- and sheep-buying program designed to relieve the drought situation. The total number of meat animals on farms at the end of the present year will probably be the smallest in more than 35 years. United States farm income in 1934-35, a measure of farmers' ability to purchase feeds, is expected to be slightly larger than in 1933-34. Farm income will be small in the drought sections, but it will be supplemented there, as elsewhere, by benefit payments.

Farm prices of feed grains in September were the highest since October 1930, and of hay the highest since June 1926, largely as a result of greater relative reductions in feed than in livestock. October prices were slightly under those for September. The present high level of feed prices will probably be maintained through the feeding season. Prices of feed grains and hay are exceptionally high compared with prices of livestock and livestock products, and if present relationships between feed and livestock prices continue into the first half of 1935, finishing of livestock for market will be further discouraged. A somewhat higher level of prices of livestock and livestock products may be expected as the season advances, and this will tend to reduce somewhat the present relative spread between the prices of the two groups of commodities. The maladjustment of livestock numbers to probable feed-grain production will be one of the most difficult problems confronting American agriculture during the next few years.

Generally speaking, the average farmer's response to high feed-grain prices, unfavorable feeding ratios, depletion of farm feed-grain and hay reserves, and low condition of livestock is to increase materially the feed-grain acreage in the following year. In previous periods, for example, sharply reduced corn crops have been followed by increased acreage in the following season. The 1935 corn-hog program of the Agricultural Adjustment Administration recognizes the need for early feed, which can be provided by spring seedings and places no restriction upon the production of these feed crops. The program contemplates, however, the adjustment of corn acreage in order that corn supplies may not become seriously in excess of the feeding requirements for corn next season.

Competition between cash crops (wheat, cotton, tobacco, etc.) and feed crops, provides an indication of the probable future trend of feed-grain and hay acreage. In the period 1921-26, during which exports were large, returns from cash crops were relatively greater than those from feed grains and hay. The cash-crop acreage increased compared with the feed-grain and hay acreage during this period and up to 1929. From 1926 to 1931, owing in part to the decline in foreign demand for cash crops and in part to increased livestock numbers in United States, feed crops were relatively more profitable and feed-grain acreage increased, while the cash-crop acreage declined. As the result of the unusually short 1934 feed-grain and hay crops and the accompanying high values, feed-grain prices will remain relatively high in 1934-35 compared with cash-crop prices. This is a continuation of the trend begun in 1931. The present high ratio (feed prices divided by cash-crop prices) will probably be accompanied by an increase in acreage to feed grains and hay. If feed-crop yields in 1935 are equal to normal or better, on an acreage as large or slightly larger than that sown in 1934, total feed supplies for the 1935-36 feeding season will be very large in relation to the number of animals to be fed, and feed prices will be low in relation to prices of livestock and livestock products. This relationship may continue for several years, since a reexpansion in livestock population can scarcely be expected before 1936 at the earliest.

FEED SUPPLY SITUATION

The 1934 production of corn, barley, oats, and grain sorghums was estimated, October 1, at 52,800,000 tons or 46 percent of the 5-year (1927-31) average of 113,900,000 tons. The computed supplies of feed grains, including stocks on farms and in the markets for use during the season and for carry-over was 64,500,000 tons, compared with 98,500,000 tons for the 1933-34 season and 105,700,000 tons, the 1927-31 average. Allowing for a minimum carry-over of feed grains at the end of the season, for increased imports, for somewhat larger feeding of wheat, and for the apparent supply of other grains, concentrates.

and mill feeds, the total quantity available for feeding livestock during the 1934-35 feeding season can hardly exceed 60,000,000 tons and may be several million tons less. Compared with this, about 87,500,000 tons were fed last year, and an average of about 96,000,000 tons were fed annually during the 9 preceding years for which comparable figures are available.

Production of tame and wild hay in 1934 was 57,728,000 tons, or 69 percent of the average of 83,618,000 tons. Allowing for a minimum carry-over of hay next spring and adding the estimated quantities of sorgo (sweet sorghum) and grain-sorghum forage and the dry-weight equivalent of corn silage, the quantity available for feeding is estimated at about 77,000,000 tons, compared with about 97,000,000 tons for the 1933-34 feeding season, and an average of about 100,000,000 tons during the preceding 9 years.

Because of the extremely short pastures, the 1934-35 supplies were reduced relatively more than usual during the summer and fall. The seriousness of the shortage of roughage is partially mitigated by the extensive salvaging of fodder, stover, straw, and other roughage.

THE DIFFERENT FEEDS

Corn.—The United States corn crop for all purposes was placed by the October 1 estimate at 1,417,000,000 bushels, or only about 56 percent of an average crop. The 1934 acreage was 92,526,000, compared with the 5-year (1927-31) average of 100,706,000 acres. The principal decrease in production was in the western part of the Corn Belt. Drought and excessive temperatures during July and August ruined the crop over an area spreading from eastern Montana to western Minnesota southward through eastern New Mexico, Texas, and western Louisiana. An approximation issued in connection with the October report placed the production of corn for grain at 1,048,000,000 bushels, compared with 2,029,000,000 bushels in 1933 and the 1927-31 average of 2,127,000,000 bushels.

Other feed grains.—Production of oats was 546,000,000 bushels compared with 1,187,000,000 bushels, the 5-year (1927-31) average. The yield per acre of 16.4 bushels was the lowest on the records which go back to 1866, and production was the smallest since 1882. Very unfavorable weather at filling time, insect damage, and some loss of acreage by abandonment were the main causes of the reduced outturn. The 1934 barley crop was 122,000,000 bushels, or 45 percent, of the average, while production of grain sorghums (for all purposes) was 52,700,000 bushels, or 56 percent of the average. The 1934 barley acreage was reduced 14 percent from that of the previous season, but the grain-sorghum acreage was cut only 2 percent.

Wheat feeding.—The 1934 wheat crop was too small to provide for extensive feeding of wheat, although in 1934-35 as much as 90,000,000 bushels may be fed. In 1933-34 about 71,000,000 bushels were fed, compared with the 1927-31 average of 97,500,000 bushels. Heavy feeding of wheat occurs only when wheat prices are equal to or lower than corn prices. Usually farmers sell their wheat for one-third to one-fourth more than corn, and on October 15 farm prices of wheat exceeded corn by 16 percent. In the Rocky Mountain and Pacific Coast States wheat prices per bushel were lower than corn prices per bushel on October 15.

Pastures.—Although October 1 pastures were the poorest on record for that date, a marked improvement had occurred during September in the South-western, Central, and Eastern States. Improvement in the Western States to mid-October, however, was small.

Soybeans.—A crop of 11,864,000 bushels of soybeans in the six leading States of commercial production is indicated by October 1 conditions. The production in these States was 10,084,000 bushels in 1933, and the 5-year average was 9,166,000 bushels. The July acreage report indicated an increase in plantings of almost one-third, which owing to later developments was probably considerably increased for use as soybean hay. Thus, a substantial increase in feed production from this crop is assured.

Commercial feeds.—From present indications, supplies of commercial feeds for the 1934-35 season will be smaller than in other recent years. Production of wheat feeds, which comprise over one-half the total production of commercial feeds, depends primarily upon the quantity of the flour outturn, and domestic milling requirements will be met by domestic supplies, supplemented by some wheat importations. The outturn of high-protein concentrates, however, will be materially smaller than last year or than average. Supplies of cottonseed cake and meal for consumption from October 1934 to July 1935 and for

carry-over at the end of the season amount to 1,447,000 tons, compared with the shipments of 1,682,000 tons in the same period last year. Poor prospects for flax this season suggest continued light supplies of linseed meal, although some meal made from foreign seed may remain in the United States instead of being shipped to Europe in order to obtain the drawback on the export of the meal and thus reduce the cost of imported flaxseed. Supplies of soybean meal will be fairly plentiful owing to the good crop of soybeans. Alfalfa-meal production will be restricted by the reduced alfalfa-hay crop, although production from June to September 1934 was about as large as in the same period last year. Hominy feed production will probably be equal to that of last season. Production of gluten feed and meal may be less than that turned out during 1933-34. Large quantities of brewers' and distillers' dried grains will be available during 1934-35.

EMERGENCY GOVERNMENTAL ACTION

Emergency governmental action was taken through the Agricultural Adjustment, Farm Credit, and the Emergency Relief Administrations to alleviate the extreme effects of the 1934 feed shortage. (1) In the beginning efforts were made to transfer land from surplus grain crops to pasturage. When the drought first began to be noticeable, all restrictions were removed on the use for forage and fodder of all lands on those farms covered by governmental contracts. (2) Means were developed to facilitate movement of feed to animals, and of animals to feed, through reduced freight rates. Reductions were authorized by the Interstate Commerce Commission, effective June 4, 1934. The original schedule expired September 7, but later in September was extended to December 31, 1934, on livestock and to May 1, 1935, on feed. (3) The Farm Credit Administration made loans in the drought States for the purchase of feed, seed, and the movement of livestock to pasture areas totaling approximately \$15,000,000 at the end of September. Also, more than \$35,000,000 were disbursed throughout all States from the 1934 emergency crop-production loan appropriation. (4) While the corn-loan plan was not originally designed as a drought-relief measure, it did have the effect of holding corn on farms as a reserve. Steps were taken to encourage farmers to obtain forage. To increase the incentive for salvaging feed and forage, it was agreed to pay farmers \$7 to \$9 per ton for corn stover and corn fodder on quantities within allotments remaining unsold on farms April 1, 1935.

A Federal livestock feed agency was established in Kansas City to expand current services in interpreting and disseminating information relative to feed supplies and livestock. Information as to location of feed supplies in areas where there is a feed surplus will be gathered, as well as data on needs in areas where there is a deficit of feeds. The effect of the drought on seed supplies was partly offset by governmental purchases of seed of adapted varieties.

Adjustment of livestock numbers to the feed shortage was undertaken by the above agencies. About 7,500,000 head of cattle will be purchased, many of which have been shipped out of the drought area to pasture prior to processing. The entire appropriation will be about \$103,000,000. Of about 7,000,000 head of cattle purchased up to October 31, at least 5,800,000 head had been processed or condemned. Since the shortage of hay is more serious than the shortage of feed grains, import duties have been removed on imports of hay and straw into designated drought-affected areas.

FOREIGN SITUATION

With domestic feed supplies in the United States the smallest of recent years, some feed and hay will be imported during the present feeding season. Supplies of feed grains available for importation into the United States are likely to be small, however (until next spring when new-crop Argentine corn will become available), because of larger import needs of European countries and reduced production of feed and forage in surplus areas. Even if aggregate imports should be much larger than in any recent year, they nevertheless would be very small relative to the reduction in feed supplies caused by the drought in this country.

Europe, like the United States, is short of feed. The shortage is not so acute as in many parts of the United States, and it is confined principally to oats and barley. Total numbers of livestock in Europe, outside of Russia, increased

steadily from immediately following the World War to 1932, and at this time are only slightly below the record level reached that year. Assuming no change in feed utilization per animal unit, present livestock numbers in the principal European countries suggest a need for about 15 percent more feed than in the years immediately before the war period and 12.5 percent more than in those years immediately following the World War. The 1934 European feed-grain production is smaller than that of either 1932 or 1933, so that potential feed-grain import requirements during 1934-35 are larger in those European countries that normally import feeds than during the previous season. Livestock numbers in Europe, especially hogs, may be expected to show some reduction during 1934-35, and thus the European importation of feedstuffs is not likely to increase sufficiently to offset the decrease in the 1934 European production of feed grains.

The European feed-grain shortage is primarily in barley and oats, since the corn crop is only slightly smaller than the 1933 harvest. Since only about 42,000,000 bushels of corn were available for export from Argentina at mid-October, only small quantities could be imported into the United States during the next several months. No material imports of corn from any other country can be expected. During 1933-34 total imports of corn were about 900,000 bushels. New-crop Argentine corn will not become available until April 1935. The 1934-35 Argentine corn acreage is not yet known, but because of the sharp advance in Argentine corn prices in July and August and the shift from wheat to other crops for which there has been a better market, it is very likely that the acreage for harvest in 1935 will be larger than the acreage in 1934.

Imports into the United States of foreign feed grains increased sharply from June through September 1934 over those of a year earlier. Imports of hay were restricted by the short available supplies in Canada, while reduced imports of oriental soybean meal reflect the active European demand. Larger imports of wheat mill feeds may be expected in 1934-35.

DEMAND FOR FEED

LIVESTOCK NUMBERS

Numbers of livestock on farms have been reduced more rapidly in 1934 than in any previous year. The cattle- and sheep-buying program to meet the feed shortage, the hog-adjustment program, and natural liquidation as the result of short supplies and high prices of feed were the principal causes.

Livestock numbers, in terms of feed-grain consuming units, made little change from 1928 to 1934 and were fairly large in relation to feed production over most of this period after 1929. Hay-consuming units increased steadily during this period. As of January 1, 1928, the number of feed-grain units, including chickens, was 139,581,000, and of hay and pasture units, 73,888,000. As of January 1, 1934, the feed-grain units were 137,609,000 and the hay and pasture units 80,068,000. As a result of the marked reduction in all species, except horses and mules, which decreased only slightly during 1934, the grain units on January 1, 1935, may be about 80 percent and the hay and pasture units about 90 percent of those on January 1, 1934.

Cattle numbers on January 1, 1935, are expected to be nearly 10,000,000 head smaller than a year earlier, or close to the low point of the present cattle-production cycle. The turning point in milk cows appears to have been reached and numbers may be expected to decrease for several years. An upswing in the cattle-production cycle following the precipitous decline in numbers this year is not likely to begin before 1936. Because of the short supplies and high prices of feed, particularly corn, hog production is expected to be on a greatly reduced scale until the spring of 1936, and market supplies of hogs are likely to continue unusually small until late in that year. With considerable liquidation of sheep now in progress, the number of breeding ewes in 1935 will be somewhat smaller than that of recent years, resulting in a decreased lamb production next year. An upswing in sheep numbers, therefore, is hardly likely to occur until after 1935. Horse numbers on January 1, 1935, will be smaller than a year earlier, but the rate of decrease in 1934 will probably be less than in 1933. Production of poultry this year has been much less than last, and the smallest since 1925. Scarcity of feed in many important poultry-producing States will force some further reduction in the number of hens carried through the winter, but for the country as a whole the reduction from January 1 last year will probably not exceed 10 percent.

FEEDING PROSPECTS FOR 1934-35

Combining livestock, including poultry, in proportion to their normal grain-consuming requirements, there were about 115,449,000 grain-consuming animal units on farms at the start of winter, or 81 percent of the number a year earlier. The quantity of feed grains, mill feeds, and concentrates available to carry this number of grain-consuming animals until new crops will be available is something less than 1,000 pounds per animal unit, in comparison with 1,230 pounds for 1933-34. The deficiency can be met only by restrictions in the feeding of grains, by further liquidation of animals, or by importation of feed. Similarly, combining livestock on farms in proportion to their normal hay-consuming requirements there are about 65,685,000 hay-consuming animal units on farms at the start of winter, or 91 percent of the number a year ago. The quantity of hay, sorghum forage, and silage to carry this number of hay-consuming animals is something less than 2,360 pounds per animal unit, in comparison with 2,700 pounds for 1933-34. The deficiency can be adjusted only by greater utilization of corn stover, by further liquidation of livestock, or by reductions in the quantities fed.

With feed supplies inadequate to provide anything like a normal ration for the greatly reduced numbers of livestock on farms, numerous adjustments in feeding practices are necessary. After allowance is made for the quantity of grain and mill feeds required to winter work animals in fairly serviceable condition, to carry necessary breeding and young stock through to new grass, and to maintain through the winter months perhaps 90 percent of the normal supply of market milk and 80 to 85 percent of the usual supply of fresh eggs, it is apparent that the quantity of feed remaining for fattening hogs, cattle, lambs, and poultry, and for the production of milk for butter and cheese, will be very much below the smallest quantity used for these purposes in any other year of record.

Despite the low condition of pasturage and the small feed-grain and hay crops, total shipments of stocker and feeder cattle through inspected markets into the Corn Belt States, July through September 1934, were much larger than in these months of 1933, and about 18 percent larger than the 5-year average (1929-33). To what extent these increased shipments will be reflected in enlarged feeding operations this winter is uncertain. A larger than usual proportion of the cattle shipped were stockers, rather than feeders. The number of cattle that will be grain finished in the eastern Corn Belt will probably be no larger than last year, but cattle feeding in the drought areas during the next 12 months will be on a greatly reduced scale. Reports from the Western States indicate that cattle feeding in all of these, except possibly California, will be reduced. Prospects of winter range and pasture feeds are the poorest on record and western cattle are going into the late fall and winter season in an unusually poor condition.

Increases in prices of dairy products will probably cause farmers to reduce the feed of milk cows less drastically than they reduce the feed of meat animals. In the Plains area from the Dakotas to Texas, however, the price of butterfat does not seem likely to rise enough to permit local farmers to buy hay and grain elsewhere and ship it in for milk production. In the eastern Corn Belt, close utilization of straw and fodder will partly offset the shortage of hay. For the most part, dairy cows will be fed the better classes of roughage this winter; low-grade roughage will be used more by other classes of livestock than by dairy cows. The low price of cows compared with feed prices will tend to reduce further the number of dairy heifers raised. The ratio of butterfat prices to grain prices in October 1934 was the lowest in post-war years and has become increasingly unfavorable since May 1933. The outlook for 1935-36 is for higher prices of dairy products in relation to feed prices, but for a less favorable relationship of dairy-products prices to prices of meat animals.

The reduction in hog numbers, already under way prior to the drought, was accelerated by the extreme feed shortage. The 1934 total pig crop was sharply reduced as a result of the corn-hog adjustment program, unfavorable feeding relationship between hog and corn prices, and the short 1934 feed supply. The reduction in hog numbers, however, has not been so great as the reduction in feed supplies; thus, hogs will be fed to lighter-than-average weights in 1934-35. The average weight for the season probably will be the lightest for any year since 1916 at least. The United States hog-corn price ratio, based on farm prices, reached the unusually low figure of 6.3 on August 15, or slightly under the unfavorable ratios reached in 1917 (7.4), 1920 (7.1), and 1924 (6.7). The

United States hog-corn price ratio of October 15, 1934, was 6.8 while that for Iowa was 7.2. The long-time average for the same date for the United States is 12.0 and for Iowa 13.6 bushels. With average yields in 1935, corn will become relatively cheaper than hogs, and the hog-corn price ratio during 1935-36 will be average or above average.

The total number of lambs fed for market this season will probably be considerably smaller than last year or in any other recent year. The Corn Belt States east of the Missouri River, as a whole, will probably feed more lambs this year than last, but there is expected to be a sharp reduction in numbers fed in the western Corn Belt and in the Western States.

Poultry marketings early in the fall were heavy and continued marketing and culling toward minimum numbers of layers may be expected as weather conditions prevent foraging.

FEEDING PROSPECTS AFTER 1935

Assuming average growing conditions during 1935, production of both feed grain and hay will be much larger than in 1934 and of feed grains above the 5-year average, 1929-33. Even though the acreage of corn planted in 1935 be held considerably below the 1932 and 1933 average acreage as a result of the 1935 corn-hog reduction program, and even though no restrictions are put on the acreage of other feed crops, the total production of feed grains will be large if the season is favorable.

In the case of hay, however, there is little possibility of a large crop of grass and legume hays in 1935 since over large parts of the drought areas a large part of the 1934 seedlings was killed and the stand on old meadows was much reduced. Because of this situation a large quantity of small grains may be cut for hay rather than for grain.

The maladjustment, therefore, between feed supplies and livestock numbers will be largely in relation to feed grains and not to hay. The number of livestock in 1935 will be small, and if the production of feed grains is large, a sharp drop in the relative level of feed-grain prices is certain. With feed-grain prices low and meat-animal prices high there will then be a strong inducement to convert grain into meat and into animal products. Since the number of pigs raised in 1935 may be no larger than in 1934 and may be smaller, the possibility of converting additional grain into pork will be limited to the feeding of hogs to heavier weights. But in the winter of 1935 there will be a marked tendency to increase the number of sows bred to farrow in the spring of 1936. Unless restricted by unusual developments, there will be a very marked increase in hog production in 1936 and 1937.

Relatively low-priced feed grains in the fall of 1935 and 1936 will also encourage an increased utilization for finishing other kinds of meat animals and for producing animal products. The number of cattle and lambs finished for market will increase and the feeding periods, especially for cattle, will be longer. Increased quantities of grain will be fed to milk cows. Poultry will be fed a heavier ration to increase egg production and increase the weight of market birds. In general the supply of meat in 1936 and 1937, although not large relative to the average of recent years, will be of better quality than in 1935.

COMMERCIAL DEMAND

The quantity of corn and other feed grains used by industries in 1934-35 will be slightly less than in 1933-34 owing to the shortage and the high price of feed grains. Many products made from feed grains are nationally advertised manufactured food products and retail prices usually advance less rapidly than the cost of the raw materials.

Wet-process corn grindings from the 1933 corn crop (November 1933-September 1934) totaled 64,000,000 bushels, compared with 66,000,000 bushels in the same period of 1932-33. Increases in sales of various corn products were confined principally to refined corn grits (principally for the brewing industry), liquid corn sugar, specialty starch products, crude oil, and gluten feed. Exports of cornstarch increased sharply from a low level. Domestic markets were influenced somewhat by the increased competition in certain industrial fields through the heavier imports of duty-free foreign starches. In the period from November 1933 to August 1934 imports of tapioca flour totaled 153,000,000 pounds against 131,000,000 pounds in the same period of 1932-33. Prospects are

for a small reduction in the quantity of the corn ground by the wet process during 1934-35 compared with 1933-34.

Corn-meal production, although stimulated by the brewers' demand for grits and flakes, will be reduced during 1934-35 from that of 1933-34. The annual production of corn meal in the United States since the World War has been a fairly constant proportion of the corn crop. The 1934-35 high price of corn will tend to restrict the outlet for the better grades of table corn meal and stimulate the use of brewers' and screenings rice as an alternate for corn grits and flakes in the brewing industry. Imports of foreign broken rice increased from slightly less than 3,000,000 pounds in 1932-33 to over 26,000,000 pounds in 1933-34.

Use of corn and corn products in the distilled-spirits and fermented-liquor industries increased sharply in 1933-34. The number of operating breweries increased from 164 in 1932 (prior to relegalization) to nearly 700 in September 1934. Total utilization of corn and corn products in the manufacture of cereal beverages and fermented malt liquor in the fiscal year ended June 30, 1934, was 256,000,000 pounds, compared with nearly 57,000,000 pounds in the previous year and 6,500,000 pounds in 1931-32. The distilled-spirits industry used 12,800,000 bushels of corn in the fiscal year ended June 30, 1934, as against 5,800,000 bushels in 1932-33 and 4,850,000 bushels in 1931-32.

The commercial outlet for barley and other grains suitable for malting purposes improved materially in 1933-34. Manufacturers of beer used 1,433,000,000 pounds of barley malt and other malt in the fiscal year which closed June 30, 1934, compared with 384,000,000 in 1932-33 and 96,000,000 pounds in 1931-32. Distillers used 2,766,000 bushels of malt in 1933-34, 560,000 bushels in 1932-33, and 506,000 bushels in 1931-32.

Because of the probable increase in feed-grain acreage in 1935, feed grains for seeding purposes will be in good demand. The Department of Agriculture established a committee to locate and purchase various kinds of seed grains to meet the prospective shortage. On October 11, 1934, holdings of feed-grain seeds included 1,443,000 bushels of barley and 6,485,000 bushels of oats. A plan for the optional purchase of certain quantities of seed-quality corn, to be selected as needed from corn sealed on farms under loans from the Commodity Credit Corporation, has been devised.

PRICES

Prices of feed grains advanced sharply as the 1934 crop deteriorated in the drought area despite the liquidation in livestock. Generally speaking, the reduction in feed-grain supplies was relatively greater than the reduction in numbers of livestock. From April 15 (prior to the drought) to October 15 corn prices on farms advanced 63 percent, oats 55 percent, barley 78 percent, and hay 56 percent. Commercial feeds as a group advanced 41 percent in the same period. The sharp increase in feed-grain prices, together with liquidation of corn loans, was accompanied by unusually heavy marketings of feed grains. Market receipts were greater than shipments from the markets, resulting in a material increase in the accumulation of feed grains in primary markets. Corn stocks at 41 markets apparently reached a peak on September 22 when they totaled 64,130,000 bushels. Oats stocks were largest this fall on September 15 when the total accumulation was 26,484,000 bushels. Barley stocks increased up to 18,016,000 bushels by October 13. Corn and barley stocks in primary markets this fall were about as great as a year ago when they were also large, but oat stocks were only about one-half as big. On October 15 the price of corn, farm basis, was 95 percent of the "fair exchange value" of 80.9 cents, oats 100 percent of 50.3 cents, barley 97 percent of 78 cents, and hay 90 percent of \$14.96. "Fair exchange value" as defined in the Agricultural Adjustment Act is determined by multiplying the 5-year average farm price, August 1909 to July 1914, by the current index number of "prices paid by farmers."

Although the index of grains based on farm prices advanced 58 percent from October 15, 1933, to October 15, 1934, the index of meat animals gained only 16 percent, the index of dairy products 10 percent, and the index of chickens and eggs 16 percent. The relatively greater advance in grains indicates a less favorable feeding situation than prevailed a year ago.

The shortage of feed grains this season is so great that further radical change in feeding practices will be necessary to make supplies last until new grain is available. Ordinarily such great changes in feeding practices are not made until feed prices have continued for some months to be abnormally high in

comparison with the prices of meat animals and animal products. The trend of feed-grain prices during the current season will therefore be partly dependent on how soon farmers fit their feeding practices to the reduced supplies in sight.

These factors of scarcity, which in themselves now tend toward definite increases in prices of feed grains, are likely to be offset in large part by certain other factors in the prospective feed-price situation.

(1) Prices of feed grains have already advanced to a level relatively high compared with livestock prices. A greatly increased number of farmers would be unable to buy at prices materially above recent levels and would be forced to liquidate further their livestock, thus reducing the effective demand for feed.

(2) The price of corn in the country as a whole on October 15 was sufficiently near the price of wheat to induce the feeding of wheat in considerable quantities, especially to poultry. Since the domestic price of wheat now is fairly close to the level at which foreign wheat could be imported over the tariff, any marked tendency toward a higher level of feed-grain prices in this country may be resisted by importation of wheat and increased substitution of this grain for corn in feeding.

(3) Some importation of corn and other feeds over the tariff would result if feed-grain prices should rise materially above the recent level, and this would tend to prevent the price increase from being as great as it might be otherwise. Importations of corn in the next few months, however, are likely to be small because of limited foreign supplies.

HAY AND PASTURE

The 1934 hay crop is by far the smallest in the 16 years for which strictly comparable figures are available, and is one of the smallest in 30 years. The supply of hay for feeding this season is about 60,500,000 tons, which is 75 percent of the average for the 5 years 1928-32 and about 77 percent of the quantity used in the 1933-34 season. The quantity of substitute roughages (such as corn fodder and stover, legume straw and grain straw, sorghum, weeds, etc.) available to supplement the small hay crop is not definitely known, but in the aggregate it is very considerable, and in some areas where the ordinary hay crops were unusually small, such substitutes are the principal roughages locally available.

After making allowances for reductions in livestock, the total supply of hay, silage, and other roughage available for use this winter for the country as a whole appears to be nearly enough to maintain the reduced livestock population in the drought areas, if the use of hay and roughage in other areas is somewhat restricted. Complete utilization of supplies is hampered by the practical difficulty and heavy expense of moving hay and roughage from remote surplus areas to points of deficiency. Domestic supplies of hay and roughage probably cannot be augmented much by importations except in a few of the border States.

There probably will be a deficiency of hay in 1935 because of the heavy loss of both old and new seedlings in drought areas in 1934 and the shortage of seed for planting new hay acreage. This will be overcome to some extent by retaining old meadows and pastures that have a fair stand and by economizing in the use of seed by proper seed-bed preparation.

SUPPLIES OF HAY AND FORAGE

The October estimate of hay production was 57,728,000 tons, compared with 74,616,000 tons harvested in 1933 and the average of 83,618,000 tons for the 5 years, 1927-31. These figures include only the crops usually cut for hay. Production of clover and timothy hay was about 16,900,000 tons in 1934, compared with 25,200,000 tons in 1933. There has been a downward trend in production of this kind of hay for 7 years. Alfalfa hay production of 19,500,000 tons, although only 78 percent of the 1933 crop, for the first time exceeds the production of clover and timothy hay. Wild-hay production was about 5,300,000 tons or 62 percent of that harvested in 1933. The production of annual legume hay has been extended tremendously this year in an effort to make up for the very small production of other kinds of hay. Much larger areas of small grains have been cut for hay than usual.

The United States average price being received by farmers for loose hay was \$13.40 per ton on October 15, 1934, compared with \$7.54 on October 15, 1933—an increase of 78 percent. Comparable prices for alfalfa hay were \$15.07 and

\$8.20; for mixed clover-timothy hay, \$15.46 and \$8.67; and for prairie hay, \$11.86 and \$5.46.

Except in the Pacific Northwest, there is a general shortage of hay and other roughages west of the Mississippi River. In this region the production of hay in 1934 was less than three-fourths of average, and in the Great Plains it was mostly less than half of the average. In the southern Plains States pasturage on fall-sown grains will help to offset an apparent shortage of about 2,200,000 tons (hay equivalent) of ordinary roughage. Some of the shortage can be taken care of by closer-than-usual use of such feed as is available. In the northern Plains States, hay and roughage requirements for this winter are equivalent to 12,500,000 tons of hay, whereas supplies of hay, sorghum forage, and silage are equivalent to only 9,100,000 tons of hay. It has been estimated that about two-thirds of the deficiency can be made up by better utilization of the corn fodder and stover and straw produced in this area. Large quantities of Russian thistle and other weeds have been cut in this area to supplement the roughages commonly used. Much of Missouri and parts of Iowa and Minnesota will need more feed than was produced. In most of the eastern Corn Belt and the Northeastern States, supplies of hay and other roughages are greater than actual feeding requirements, although desirable kinds of hay are scarce in some of the dairy sections. Kentucky, Tennessee, and most of the South-eastern States have ample supplies, and in some places there is a surplus of hay.

As a result of the activities of the Forage Conservation Office approximately 500,000 tons of corn fodder and corn stover were harvested over and above the quantity that would have been harvested in northern Iowa, southern Minnesota, Illinois, Indiana, and Ohio. In these States the Government has guaranteed a price of from \$7 to \$9 a ton on corn fodder and corn stover, and this should make considerable feed of this character available. Large quantities of drought-damaged corn were cut in the western Corn Belt, but much of this material is in rather poor condition because of the development of molds after it was in the shock.

PASTURES

The carrying capacity of ranges and pastures, except in the Southeast, has been much below average and it has been necessary to graze a considerable acreage of hay land. Because of the shortage of roughages, most pastures will be closely grazed until late this fall, and, not having adequate protection, they will be further weakened by exposure during the winter. However, considerable acreage was seeded to wheat, rye, and winter barley in a number of the drought States for use as fall and winter pasturage in addition to that obtained from the usual acreage of fall-sown grains. These seedlings were made with the understanding that they would not be harvested as grain. This grain-pasture acreage should relieve the excessive grazing on permanent pastures to a certain extent.

Grazing will probably begin early next spring before the grass has had time to make a good growth and develop a strong root system. Pastures grazed too early or too heavily are likely to become thin and patchy and to be lowered in carrying capacity. Careful early grazing will insure more pasturage later and will lessen the need for supplementary feeds during the summer. With an open winter, grain pasturage will reduce the in-shipments of concentrates. Very little summer growth of bluegrass pasture will be available this fall and winter, especially in southern Iowa and Missouri. Reports indicate that the drought and excessively hot weather have actually killed a large percentage of the bluegrass in many of the pastures and all of it in some pastures throughout parts of Iowa, Missouri, and southern Illinois.

FORAGE-CROP SEEDS

Supplies of grass and clover seeds are about 40 percent smaller than those of last year and about 50 percent smaller than the average for the 5-year (1928-32) period. Of these seeds, supplies are relatively shortest for timothy, millet, Sudan grass, alsike clover, red clover, and sweetclover, in that order. On the other hand, supplies of alfalfa and Kentucky bluegrass seed are sufficient to meet normal sowing requirements, while those of redtop seed are over twice the requirements.

Production of forage-sorghum or sorgo seed is expected to be much below average, and the carry-over of this seed is unusually small because of the excellent demand for all late forage-crop seeds last spring.

The production of soybeans this year is expected to be 20 to 30 percent larger than last year, whereas that of lespedeza seed is indicated to be somewhat smaller than the record production of last year. A larger percentage of the lespedeza acreage than usual was cut for hay.

Prices for all kinds of grass and clover seeds are much higher than last year and in most cases are higher than the 5-year (1924-32) average.

It is not probable that importations of hay and forage-crop seeds can be made in sufficient quantities to supplement materially the domestic supply.

MEAT ANIMALS AND MEATS

The decrease in the number of livestock as a result of the greatly reduced hog production and the increased slaughter of cattle and sheep this year, together with the shortage of feed crops necessary for fattening livestock, will result in a very marked reduction in both numbers and weights of animals for slaughter during most of 1935. Not only will total marketings of meat animals in the coming year be reduced but the general quality and finish of such animals will be much below average. The reduction in slaughter will be most pronounced after February 1935, and the greatest relative shortage is likely to develop during the summer months. The decrease in the output of pork is expected to be much greater relatively than that of beef or lamb.

The marked decrease in livestock slaughter in prospect is likely to result in a substantial advance in prices of all meat animals next year, and the level of livestock prices in 1935 is expected to be the highest since 1930.

SUPPLIES

The supply of meat animals on farms in terms of total live weight of the three species at the beginning of 1935 probably will be the smallest for more than 35 years. Marked decreases in numbers will occur in the case of all classes of livestock, but the greatest decrease will be in hog numbers. Although some increase in the numbers of hogs on farms may occur by the end of 1935, little or no increase in numbers of cattle or sheep is probable before the end of 1936. This great reduction in number of livestock will result in a marked curtailment in the Nation's meat supply for the next 2 years at least.

The trend in the number of meat animals was upward from 1928 to the beginning of 1934. From January 1, 1928, to January 1, 1934, the supply of meat animals on farms in terms of total live weight increased about 12 percent. The number of cattle on farms increased steadily from 1928 to early 1934, and the number on January 1, 1934, was 19 percent larger than on that date in 1928. By the end of 1934 much of this large increase in the preceding 6 years will have been eliminated. Hog production (number of pigs raised) declined from 1928 to 1930, increased sharply in 1931, and changed little in 1932 and 1933. Chiefly because of the operation of the emergency pig-buying program in 1933, the number of hogs on farms at the beginning of 1934 was about 9 percent smaller than a year earlier. As a result of the greatly reduced number of pigs raised in 1934, the number of hogs on farms on January 1, 1935, will be much smaller than on that date in recent years, with a decrease from a year earlier of 30 to 40 percent not improbable. Sheep numbers increased steadily from 1923 to 1932, the increase amounting to about 17,000,000, or 45 percent. From 1932 to 1934 the number of sheep decreased slightly, but numbers on farms on January 1, 1935, will be reduced considerably from those of a year earlier.

The commercial supply of meats and lard during the first 8 months of 1934, as measured by total dressed weight of animals slaughtered under Federal inspection but excluding relief purchases by the Federal Government, was about 5 percent smaller than in the same period last year, and about equal to the 5-year average for the period. As compared with a year earlier, the decrease in meat and lard production was due entirely to the reduction in supplies of pork, including lard, and of lamb and mutton. Production of beef and veal under Federal inspection during the first 8 months of 1934 was the largest for the period since 1918. The decrease in the commercial production of pork, including lard, under Federal inspection in the January-to-August period amounted to about 16 percent and that of lamb and mutton to 9 percent. In addition to the regular meat production under Federal inspection, purchases by the Federal Government for relief purposes either in the form of hogs or hog products were roughly equivalent to 200,000,000 pounds dressed weight.

Likewise large quantities of beef, veal, and mutton have been and will be processed for Government account during 1934 for relief distribution.

The per capita commercial supply of meats and lard (measured in terms of dressed weight), obtained from federally inspected slaughter, excluding relief purchases by the Government, during the first 8 months of 1934 was 70 pounds compared with 74.2 pounds in the corresponding months last year, and 68.7 pounds in 1932.

The average live weight of both cattle and hogs slaughtered under Federal inspection during the first 8 months of 1934 was smaller than during the corresponding months of 1933, and smaller than the 5-year average. The decrease in average weights compared with a year earlier amounted to about 2 percent for cattle and 3 percent for hogs. The average weight of calves slaughtered under Federal inspection in the January-to-August period in 1934 was slightly heavier than a year earlier, while the weight of sheep and lambs showed little change. Lower dressing yields were also reported for all classes of meat animals except sheep and lambs.

Smaller supplies of poultry meat are in prospect for the first half of 1935. Numbers of laying hens and pullets on October 1, 1934, were the smallest on record since 1925. The number of all chicks hatched during the spring of 1934 was the smallest since 1927, and an unusually large proportion of these were marketed during the summer and early fall. The number of turkeys to be marketed this fall and winter will be somewhat less than the number marketed last year. Chiefly because of large marketings of poultry in recent months, storage stocks of dressed poultry on October 1, 1934, were about 11 percent greater than the 5-year average for that date. With smaller numbers of chickens on hand, a decreased rate of movement of poultry to market is to be expected, and the volume of poultry meats available for consumption during the first half of 1935 will be considerably less than the average of the last 5 years.

DEMAND

The sharp decline in consumer demand for meats and lard which began in early 1930 was finally checked in the first half of 1933, and since that time considerable improvement has occurred. For the first 8 months of 1934 the demand for meats and lard, measured in terms of quantities taken and prices paid by consumers, has averaged considerably higher than in the corresponding period of 1933. Per capita consumption of all meats and lard produced under Federal inspection, excluding relief purchases by the Federal Government, totaled 67 pounds from January to August 1934, which was about the same as in the corresponding months of 1933. The weighted average retail price of these products at New York was about 13 percent higher in the first 8 months of 1934 than in the same months of 1933. The index number of retail meat prices as reported by the United States Bureau of Labor Statistics for the entire country showed a rise of 11 percent in the January to August period of 1934 over that of 1933.

The improvement in consumer demand during the present year has extended to all classes of meats. Per capita consumption of federally inspected beef and veal from January to August 1934 was about 15 percent greater than that of 1933, but both the per capita consumption of federally inspected pork, including lard, and the per capita consumption of federally inspected lamb and mutton were about 9 percent less. The advance in retail meat prices at New York from 1933 to 1934 amounted to about 5 percent for beef, 19 percent for hog products, and 15 percent for lamb.

The higher levels of industrial employment and pay rolls have been the principal factors responsible for the improvement in consumer demand for meats during 1934. It is estimated that incomes of industrial workers in the first 8 months of 1934 were nearly 40 percent greater than in the corresponding months of 1933. Large governmental disbursements for relief and other purposes also have been an important factor responsible for the stronger demand for meats in the present year. The level of consumer demand for meats in 1935 will depend to a considerable extent upon developments in the industrial and business situation generally, which in turn will determine the level of consumer buying power. On the basis of present indications it appears probable that the improvement in the demand for meats, which occurred this year, will be fairly well maintained in 1935. If consumer demand for meats next year is maintained at or near the 1934 level, the greatly reduced meat supplies will be accompanied by materially higher prices for meats and livestock as well.

HOGS

Commercial slaughter supplies of hogs in the 1934-35 hog-marketing year will be the smallest in more than 20 years. A marked decrease will occur in both numbers and average weights of hogs marketed. A reduction in hog production was already under way prior to the summer of 1934 as a result of the very unfavorable relationship between hog prices and corn prices since the middle of 1933, and the operation of the 1934 corn-hog adjustment program. The severe drought and resulting shortage in feed supplies during the present year will cause the decrease in hog production to be even greater than would have occurred otherwise.

Hog prices in 1934-35 are expected to average materially higher than the relatively low levels of prices that prevailed during the last 3 marketing years, largely because of the substantial reduction in slaughter supplies of hogs and other livestock. Consumer demand for hog products has improved considerably during the present year, and a maintenance of the present level of demand appears probable for 1934-35. Exports of hog products in the next 12 months will continue relatively small because of import restrictions and the greatly reduced domestic production.

Although hog production in 1934 has been sharply curtailed and per capita production of hog products in the current marketing year (October 1934 to September 1935) will be the smallest in the half century at least, it is possible that production in 1935 will be further reduced. It now appears probable that the spring-pig crop in 1935 will be smaller than that of 1934, and it is hardly probable that the 1935 fall-pig crop will be sufficiently large to offset the decrease in the spring-pig crop. Thus a material increase in hog slaughter is improbable before the 1936-37 marketing year.

DOMESTIC SUPPLIES

Supplies of hogs for commercial slaughter for the hog-marketing year beginning October 1, 1934, are likely to be the smallest in more than 20 years. As a result of the combination of the very unfavorable relationship between hog prices and corn prices prevailing since the middle of 1933, the 1934 corn-hog adjustment program, and the shortage of feed supplies occasioned by the severe drought during the present year, the total pig crop for 1934 has been greatly curtailed. It is this pig crop (farmed in 1934) from which the market supply of hogs will be obtained in the 1934-35 marketing year. In view of the very short supplies and high prices of corn and other feed grains, hogs will be marketed at weights much lighter than average, consequently the decrease in the production of pork and lard will be relatively greater than the reduction in numbers of hogs slaughtered.

The 1934 spring-pig crop was estimated at 37,427,000 head, a decrease of about 15,000,000, or 28 percent, from the spring crop of 1933 and a reduction of about 27 percent below the 5-year (1929-33) average spring crop. The decrease was general all over the country; the estimated crop in the Corn Belt States of 30,122,000 head showed about the same percentage decrease as did the total crop. Because of the marked reduction in the spring-pig crop, the number of hogs slaughtered commercially during the current winter-marketing season (October 1934 to April 1935) will be the smallest in many years. Just how small it will be depends to a considerable extent upon the disposal of the hogs in the drought States. If the 1934 spring pigs in these States should be fed out and marketed at about the usual time, inspected slaughter in the winter season might reach 20,000,000 head, which would be the smallest for the period since about 1910. But with feed-grain supplies in these States so short it is possible that many of these spring pigs will not be fed out this winter but will be carried on a subsistence ration until next spring and then carried largely on pasture until new grain becomes available next summer. Any general tendency of this kind would reduce further the slaughter in the winter season and would increase the slaughter toward the end of the marketing year.

The official estimate of the fall-pig crop will not be made until December. In the June pig-crop report it was estimated, upon the basis of breeding intentions reported about June 1, that the number of sows to farrow in the fall season of 1934 would be 38 percent smaller than in the fall of 1933. When these breeding intentions were reported there were good prospects for an average corn crop. As a result of the drought, and the high level of corn prices compared with hog prices which continued all through the summer, the fall-pig

crop may have been reduced more than 38 percent; a reduction of 50 percent is not improbable. If the fall crop of 1934 should be 60 percent of that of 1933, it would total less than 18,000,000 head for the entire country and less than 13,000,000 head in the Corn Belt, and the combined spring and fall crops in 1934 would be about 55,500,000 head for the United States and about 43,000,000 head for the Corn Belt. The United States pig crop in 1933 totaled 81,700,000 head and in 1932 it was 81,000,000 head. If inspected slaughter during the crop year should bear somewhat the same relationship to the total number of pigs saved in the Corn Belt as in recent years, the total of such slaughter during the 1934-35 marketing year may not reach 30,000,000 head and may be the smallest in numbers since 1909-10. Inspected slaughter in the 1933-34 marketing year totaled 43,910,000 head and the 5-year average (1929-30 to 1933-34) amounts to 45,348,000 head.

With the marked shortage in feed grain over a large section of the Corn Belt and the continuing very unfavorable hog-corn price ratio, it is certain that hogs will be marketed at very light weights, consequently the average weight of hogs slaughtered during this marketing year may be the smallest since 1916 at least. A reduction of 20 pounds in the average weight from the previous year would be equivalent to a reduction of 9 percent and the resulting total production of hog products would be decreased even more, relatively, than will be the decrease in numbers slaughtered. The per capita production of hog products from the 1934-35 inspected slaughter will be the smallest on record.

Because of the light weights and low quality of the hogs marketed in recent months, yields of lard per 100 pounds live weight have been extremely low. Lard yields in every month since February this year have been the smallest for the month in question in the 12 years for which records are available. Since hogs are likely to be marketed at very light weights during the next 12 months, lard yields are likely to continue low, and the production of lard in 1934-35 probably will be reduced relatively more than the production of pork.

STORAGE SUPPLIES

Total storage stocks of hog products at the beginning of October were below the average. At the beginning of the storage season last November, stocks of both pork and lard were relatively large; holdings of lard on November 1, 1933, were the largest for that date on record. Stocks of pork continued large until February, but the seasonal decrease which normally begins in late spring got under way earlier than usual and pork stocks have been below average since March. Stocks of lard increased somewhat from November 1933 through July 1934, as they normally do during this period, and throughout these months lard stocks were above average. In August and September, however, the seasonal reduction in lard holdings was greater than usual. On October 1, 1934, holdings of pork, amounting to 524,000,000 pounds, were 17 percent smaller than those of a year earlier and 1 percent below the 5-year average for that date. Stocks of lard on October 1, totaling 128,000,000 pounds, were about 34 percent smaller than the unusually large holdings on that date last year, but they were about 17 percent greater than the 5-year October 1 average. As compared with a year earlier, the decrease in storage stocks of pork and lard combined, on October 1, was equivalent to the products of more than 1,000,000 hogs of average weight.

Since slaughter supplies of hogs in the late winter and spring, as well as next summer, will be very small, and rising prices of all hog products are probable, it seems likely that a strong storage demand for hog products will develop by early winter. Despite this probable active storage demand, stocks of pork and lard accumulated during the current winter-marketing season will be small because of the greatly reduced hog slaughter in prospect.

CONSUMER DEMAND

[See Demand. p. 52]

FOREIGN COMPETITION AND DEMAND

United States exports of pork and lard in 1935 probably will be smaller than the exports in 1934. Two outstanding factors indicate a reduction in such exports: (1) The prospective marked decrease in hog production in this country during the current marketing year, and (2) the maintenance and possible extension of trade barriers in European importing countries. The British

import-quota system is the most important restriction to United States exports of cured pork. The commercial policy recently adopted in Germany has practically eliminated, at least temporarily, that country as a foreign market for United States lard, whereas formerly it was the second most important outlet.

Exports of pork from the United States in the hog-marketing year ended September 30, 1934, totaled about 158,000,000 pounds, an increase of about 20 percent over the exports of 1932-33. A larger-than-usual proportion of the total pork exports in 1933-34 consisted of fresh frozen pork. The principal factors tending to cause an increase in exports of pork in the last 12 months, when domestic pork production was decreasing, have been (1) the relatively high prices obtainable in Great Britain for the quota quantity of hams and bacon and for fresh frozen pork, and (2) the payment of a drawback equivalent to the hog-processing tax on all exports of hog products. Lard exports in the 1933-34 marketing year, amounting to about 525,000,000 pounds, were about 8 percent smaller than those of a year earlier. Increased restrictions on lard imports into Germany and the reduced domestic production were the chief factors responsible for the decrease in lard exports. On the other hand, the processing-tax drawback probably prevented an even greater decrease in such exports.

Under the British import-quota system, the United States is allotted 8.1 percent of the total volume of cured pork allowed entry from countries outside the British Empire. At present the total volume of cured-pork imports allotted to non-Empire countries is about 726,000,000 pounds annually. The total allotment in the future will depend largely upon the progress made in increasing cured-pork production in Great Britain. A further reduction in the British import quota for cured pork is contemplated in 1935 and a plan for limiting imports of frozen pork into Great Britain next year also is under consideration.

During recent years prior to 1934, exports of lard to Germany usually represented about 25 percent of the total United States exports. During the last few months, however, exports to Germany have declined to negligible quantities. The present German policy with reference to lard imports is one of curtailing imports from all sources to a minimum, and taking the reduced total, insofar as possible, from countries that have clearing or barter agreements with Germany. In the last 3 months, Denmark has been the leading source of the greatly reduced German lard imports, despite the fact that lard production in Denmark has decreased. Small quantities of lard also have been imported into Germany recently from Yugoslavia and Hungary. The continuation of the present German policy relative to lard imports is somewhat uncertain, but no material expansion in the German outlet for American lard appears probable for next year.

Hog production in Europe is expected to decline somewhat in 1935. This decline probably will occur chiefly in Germany and in some other continental European countries where production was encouraged during 1933 as a step toward increased self-sufficiency and as a means of utilizing relatively large grain supplies. Indications are that hog marketings in Germany will continue fairly heavy until early 1935, in view of the relatively large number of hogs now on hand in that country and the shortage and high prices of feeds in Europe. Hog production in the leading European pork-exporting countries (Denmark, The Netherlands, Poland, and Lithuania) was reduced in 1933 and early 1934 because of the pork-import restrictions of Great Britain, their leading foreign market. Future changes in hog production in these countries will be governed to a considerable extent by developments in Great Britain. A substantial increase in British hog production in early 1935 might be followed by a smaller pork-import quota. Thus far, however, British hog producers have increased production only moderately as a result of the protection afforded by the import-quota system.

PRICES

Hog prices in the first quarter of the marketing year, 1933-34, were at a relatively low level, but when hog slaughter was seasonally reduced in the late winter, prices advanced sharply. This advance was of short duration, however, and hog prices declined steadily from early March until early June. With some curtailment in supplies in June, prices again advanced and most of this rise was maintained through July. The seasonal reduction in hog slaughter from July to August was much greater than usual, and with the return of more moderate temperatures in August consumer demand for meats

improved and one of the most pronounced advances in hog prices on record occurred during that month. In late August the top price of hogs at Chicago reached \$8.05, the highest price paid at that market in more than 3 years. Following this sharp advance, market supplies of hogs increased somewhat and the usual autumn decline in hog prices began, and by mid-October more than half of the August rise had been lost. However, the Chicago average price of hogs for the week ended November 3, of \$5.38 was about \$1.40 higher than a year earlier and about \$2.20 higher than 2 years earlier.

The total live weight of hogs slaughtered under Federal inspection during the 1933-34 marketing year was about 10 percent smaller than in the preceding year and 8 percent smaller than the 5-year average. The average price paid by packers for hogs in 1933-34 (exclusive of the hog-processing tax) was about \$4.05 per 100 pounds, compared with \$3.75 in 1932-33 and \$3.93 in 1931-32. The total amount paid by packers for hogs slaughtered under Federal inspection for the marketing year 1933-34 (excluding processing-tax payments) was about \$400,000,000, or slightly less than the amount paid in 1932-33 and that paid in 1931-32. In addition to the returns from the sale of hogs, hog producers cooperating in the hog-production-control plan have received, or will receive, hog-benefit payments, from the first payment under the 1934 Agricultural Adjustment program, totaling about \$90,000,000, most of which was received during the 1933-34 marketing year. Two additional payments under the 1934 program will be made during the 1934-35 marketing year.

Hog prices in the 1934-35 marketing year are expected to average materially higher than the relatively low levels of prices in the last 3 marketing years because of the prospective marked decrease in the slaughter supplies of hogs and other livestock. Total available supplies of pork and lard, including storage stocks, will be much smaller throughout the present winter-marketing season than a year earlier, and hog prices probably will be considerably higher this winter than last. The greatest decrease in hog marketings in the winter season, as indicated earlier, is likely to occur in the late winter and spring, and the seasonal rise in hog prices at that time probably will be greater than usual. In addition to the effects of smaller slaughter supplies, hog prices during the winter probably will also be strengthened by a strong storage demand for hog products. The greatest relative decrease in slaughter supplies of hogs for the entire marketing year, however, probably will occur in the summer of 1935 and it is probable that hog prices next summer will average higher than for any summer since 1930, when the average price at Chicago was about \$9.50.

In view of the probable sharp decrease in weights of hogs marketed during the next 12 months, it seems probable that supplies of heavy hogs will be reduced much more than the total marketings of hogs, and that such hogs will sell at a substantial premium over light and medium-weight hogs during most of the current marketing year. Normally, there is little difference in the prices of the different weights of butcher hogs in the winter season, and in the summer heavyweight hogs usually sell at a discount.

PRODUCTION OUTLOOK

Although hog production was drastically curtailed in 1934 and per-capita production of hog products during the next 12 months probably will be the smallest in at least 50 years, it is possible that production in 1935 may be further curtailed. It is fairly certain that the spring-pig crop of 1935 in the States of the Corn Belt that had the worst drought will be much smaller than the spring-pig crop in 1934. About 45 percent of the 1934 spring pigs were raised in the Corn Belt counties classified as emergency drought counties, and over 50 percent were raised in the emergency drought counties and in other areas where corn production was greatly reduced.

There may be a considerable tendency to increase spring-pig production in the areas where feed supplies are more nearly normal, but it hardly seems possible that increases in the 50 percent located in these areas would offset the certain decrease in the 50 percent located in the drought areas, especially with a production-control program in operation. With a control program in effect which limits the number of hogs than can be produced by contract signers, such restriction will tend to check the increase in the 1935 spring-pig crop in areas where feed supplies are fairly plentiful. If, however, feed-crop prospects for 1935 are favorable, there may be a material increase in breeding for the 1935 fall farrow in the drought areas where available breeding stock makes

this possible, but the increase in the fall-pig crop in all areas would probably not be large enough to offset the decrease in the spring crop. Hence total production may be smaller in 1935 than in 1934.

With relatively high hog prices during all of 1935 in prospect and probably declining feed-grain prices during the last half of the year, the hog-corn price ratio may again become highly favorable for hog production during the last half of 1935 if crop-production prospects are good. This will tend greatly to expand breeding for farrow in the spring of 1936, especially in the present drought areas.

What effect 2 years of very short supplies and high prices of hog products may have on consumer demand for such products, as a result of enforced changes in dietary habits, can hardly be foreseen. It is not improbable, however, that the usual relationship between supplies and prices of hogs and hog products will be disrupted somewhat, and it is possible that when supplies increase, the resulting drop in prices will be greater than normally would be expected from such an increase.

BEEF CATTLE

The outlook for the cattle industry has been changed greatly as a result of the drought and the drought-relief measures taken to aid cattle producers. At the beginning of 1934 the estimated number of all cattle on farms was about 10,500,000 larger than in 1928, the low point of the production cycle. But it is probable that by the beginning of 1935 most of this large increase which occurred from 1928 to 1934 will have been eliminated. This sharp reduction in a single year has been brought about by the large slaughter of cattle and calves for Government account, as well as by increased slaughter of cattle and calves for regular commercial use.

Marketings and slaughter of cattle and calves in 1935 are expected to be greatly reduced, with inspected slaughter of the two classes smaller than for more than a decade. In view of the probability of much smaller market supplies of cattle and other meat animals, cattle prices are likely to average materially higher in 1935 than in the present year. But even though slaughter should be considerably smaller than in 1928 and 1929, it is not probable that prices will reach the levels of those years, because of the much lower purchasing power of consumers. The reduction in cattle slaughter probably will be much greater in the case of cows and heifers than in steers. The decrease in slaughter supplies of all cattle and of well-finished cattle is likely to be most pronounced during the summer and fall months.

Although cattle numbers may be reduced about to the 1928 level by the beginning of 1935, the decrease from a year earlier will vary greatly among areas. In general, numbers will be reduced little, if any, in the areas east of the Mississippi River, but west of the Mississippi River there will be marked decreases. If cattle prices are high relative to feed prices during the next few years, as seems probable, increases in numbers of cattle can be expected in all areas, but expansion will be greatest in the areas where numbers have been so greatly reduced in 1934. The upswing in cattle numbers, however, is not likely to get under way until 1936, since the small calf crop and death losses above average expected in 1935 probably will prevent any increase during that year.

SUPPLIES

Cattle numbers increased about 1,800,000 head during 1933, and on January 1, 1934, the estimated number of all cattle on farms was 67,352,000. This number was about 10,500,000 larger than that on January 1, 1928 (the low point of the current production cycle) and about equal to the number on January 1, 1923. The number of cows and heifers 2 years old and over January 1, 1934, was estimated at 36,346,000, and was probably the largest for all years. This was an increase of about 5,500,000 over the number estimated as of January 1, 1928, and 2,300,000 over that of January 1, 1923.

On January 1, 1935, the number of cattle is expected to be reduced to a total not much larger than that on January 1, 1928. In other words, most of the increase that took place during the 6 years 1928-34 will have been eliminated within a single year. A large part of the decrease resulted from the buying of cattle and calves by governmental agencies as a part of the drought-relief activities of the Federal Government. Even though there had been no

such buying, cattle numbers would have shown considerable decrease during 1934, since there would have been heavy death losses in some areas before the end of the year, and marketings and slaughter through regular channels would have been much larger than the large volume of commercial slaughter that has taken place. This regular slaughter, however, would not have been so large as the combined total of regular and governmental slaughter will be, hence numbers by the end of 1934 would not have been reduced to the extent that they now will be. But death losses during the early months of 1935 would have been very large, and the total reduction in cattle numbers by the end of 1935 probably would have been as large as that which will now be shown at the end of this year.

Total slaughter of cattle and calves under Federal inspection for the year 1934, not including slaughter of Government cattle, probably will total about 15,500,000 head, which is an increase of about 2,000,000 over 1933 and the largest yearly total on record. Total purchases of cattle and calves for Government account will be at least 7,500,000 head. Of these, upward of 1,200,000 will have been condemned as unfit for shipment and killed at point of purchase. Most of the remaining numbers will have been slaughtered by the end of 1934 for the account of Federal and State relief agencies. Government purchases to the end of October totaled about 7,000,000 head, of which at least 5,800,000 had been slaughtered by that date and nearly 1,000,000 were remaining on pasture.

The proportion of cows and heifers in the total inspected slaughter in 1934 was much larger than in any recent year. During the first 8 months, slaughter of cows and heifers for commercial account was 630,000 head larger than for the corresponding period of 1933, while the increase in slaughter of steers was only 387,000 head. Of the cattle and calves purchased by the Government and shipped by the end of October, about 23 percent were calves. Cows and heifers comprised a large proportion of the cattle purchased. Of the total number of cattle to be finally slaughtered, probably 80 percent will be cows and heifers. As a result of this large slaughter of female cattle, the reduction in the number of these remaining on farms at the end of this year will be relatively greater than in any other class, except possibly calves.

Although the condition of pastures in the Corn Belt States during the summer was the lowest on record, and prospects for feed-grain and hay production were about the poorest ever known, the shipment of stocker and feeder cattle into these States has been relatively large. Total shipments, inspected through markets, for the 3 months, July to September, were about 655,000 head. This number was about 50 percent larger than the total of the very small shipments for these months in 1933, about 18 percent larger than the 5-year (1929-33) average, and the largest for the period since 1928.

In July 1934, when prospects for a corn crop were still fairly good over much of the Corn Belt, the movement into all the States was relatively large, with the total more than twice as large as in 1933 and the largest for the month of July since 1925. In August and September the movement into the States where the effects of the drought were more serious dropped off sharply, but into other States it continued large. For the 3 months the five eastern Corn Belt States received nearly two and one-half times as many cattle as in 1933 and the largest number for those months since 1926. Of the western Corn Belt States, Iowa and Minnesota are the only States in which receipts of cattle this year (during the 3 months) exceeded those of a year earlier. The movement into Iowa was especially large.

To what extent this increased movement of stocker and feeder cattle will be reflected in enlarged feeding operations this winter in the States where such cattle have largely gone is uncertain. The character of the cattle shipped from four large markets would indicate that a larger than usual proportion of these cattle were bought for stockers rather than for feeders. The numbers of heavy cattle (over 900 pounds) shipped from these markets during the 3 months were below the very small shipments of last year, and the largest increases over last year were in steers under 700 pounds, in calves, and in cows and heifers. In the drought States, undoubtedly, cattle feeding during the next 12 months will be on a greatly reduced scale. Many of the cattle fed in these States are not bought in stockyards markets, and a decrease in the direct movement would not be evidenced by the inspected shipments from these markets.

Reports from the Western States are to the effect that cattle feeding in all of these, except possibly California, will be reduced as a result of the small

supplies and high prices of grain and hay. Feeding at cottonseed mills in Texas also will be sharply curtailed.

Marketings and slaughter of cattle and calves in 1935 are expected to be greatly reduced. Slaughter of cattle under Federal inspection probably will be the smallest since 1915, and that of calves the smallest since 1921. The reduction in cattle slaughter will be much greater in the case of cows and heifers than in steers. The number of well-finished slaughter cattle during much of 1935 is expected to be small, although there may be a fairly large supply of short-fed cattle during the earlier months. The greatest reduction in supplies of all cattle and of well-finished cattle will probably be most pronounced during the summer and fall months.

IMPORTS

Cattle imports during the first 8 months of 1934 totaled 55,000 head, compared with 60,000 and 66,000, respectively, for the same periods of 1933 and 1932. Mexico supplied 51,000 of the 1934 total and 4,000 came from Canada. Imports of cattle have been declining since 1929. Imports for the entire year 1929 totaled 605,000 head, whereas in 1933 such imports were only 80,000.

Supplies of canned beef inspected by the Bureau of Animal Industry for entry into the United States from January 1 to August 31, 1934, amounted to 25,644,000 pounds, which is 9 percent less than those received in the corresponding period of 1933 but 64 percent more than were received during the first 8 months of 1932. Imports of canned beef also have declined considerably since 1929, when the yearly total amounted to 77,481,000 pounds. Imports of such beef in 1933 totaled 43,183,000 pounds.

Imports of fresh and frozen beef during the first 8 months of this year totaled 137,000 pounds, compared with 342,000 pounds imported during the same period of 1933. Canada and New Zealand continue as the leading sources of imports of fresh and frozen beef, supplying 71,000 and 19,000 pounds, respectively, most of the remainder coming from Australia.

The imports of live cattle and the imports of canned and other beef in the first 8 months of 1934 were the equivalent of less than 3 percent of the commercial cattle slaughter under Federal inspection during this period.

CONSUMER DEMAND

[See Demand, p. 52]

PRICES

The trend in cattle prices was sharply downward from 1930 through 1932, and in early 1933 prices reached the lowest level in at least 25 years. During the remainder of 1933 prices were fairly stable, advancing only moderately in the early summer of that year. During 1934 the price trend for most classes and grades of cattle was upward from the low level at the beginning of the year to late September, but in October prices declined somewhat as a result of a tendency to liquidate cattle because of feed shortage. The rise to September was most pronounced in the case of the better grades of slaughter steers, prices of which advanced about \$3.50 per 100 pounds from the beginning of the year and carried the top at Chicago to \$10.95 per 100 pounds, the highest price paid at that market since early 1932. Prices of the lower grades of slaughter steers, however, advanced much less than did those of the better grades. Prices of Common steers during the last week of October were about the same as in early January, whereas prices of all other grades were substantially higher. The margin between prices of the lower and higher grades of steers has widened materially during the present year. In mid-October the spread between prices of Common steers and prices of Choice and Prime steers at Chicago was \$5.18 compared with \$2.11 a year earlier, and \$1.88 last January, before the advance in cattle prices got under way.

Prices of Good cows advanced considerably during the first 5 months of 1934, but since April cow prices generally have declined. Prices of low-grade cows have shown little change during the year, and at the end of October were only slightly above the low level of a year earlier. Prices of veal calves declined almost steadily from February to July because of the large commercial calf slaughter during the period. From mid-August to October, however, some recovery in calf prices occurred, but part of this rise was lost in the latter month. Prices of stocker and feeder cattle declined sharply in the last half of

1933 and advanced only moderately in early 1934. During June and July prices of such cattle declined considerably, but after mid-August there was some recovery, and in the middle of October they were slightly above the low level prevailing in October 1933. Since last May, however, stocker and feeder cattle prices have been much lower relative to prices of well-finished cattle than was the case in 1933.

The United States yearly average farm price of cattle declined from \$9.15 in 1929, the post-war peak year, to \$3.63 in 1933. The lowest monthly average, \$3.12, was reached in December of the latter year. Farm prices advanced gradually through 1934 to September when the average was \$4.21, compared with \$3.61 a year earlier. A seasonal decline in October carried the average for that month to \$3.96.

The average price of cattle slaughtered under Federal inspection during the first 8 months of 1934 was about \$4.62 per 100 pounds, compared with \$4.28 in the corresponding months of 1933 and \$5.17 in the same period of 1932. The average price of slaughter calves in the first 8 months of the present year was \$4.69, compared with \$4.71 in the same months of 1933 and \$5.30 in the corresponding months of 1932. Although the average price of cattle was higher than in 1933 and that of calves was about equal to that of a year earlier, there was a material increase in slaughter supplies of both cattle and calves, and the total amount paid for such stock slaughtered under Federal inspection in the first 8 months of 1934 (Government purchases excluded) was about \$315,000,000 compared with \$250,000,000 in the corresponding months of 1933.

In view of the probable sharp curtailment in slaughter supplies of cattle and other meat animals during 1935, the general level of cattle prices next year is expected to be considerably higher than in 1934. The rise over the 1934 level is likely to be relatively greater in the prices of low-grade cattle, especially in the second half of the year, than in prices of the better grades.

Since there may be fairly large market supplies of short-fed cattle in the first quarter of 1935, prices of these kinds during that period, although expected to be higher than a year earlier, may not be enough higher to offset the greatly increased cost of feeds. During the late spring and summer supplies of all grain-fed cattle are expected to be unusually small, and a larger-than-usual seasonal advance in prices of such kinds is expected to occur. The level reached by midsummer is expected to be fairly well maintained until late fall, with the better grades of heavy cattle probably commanding a substantial premium over similar grades of lighter weights.

PRODUCTION OUTLOOK

Although total cattle numbers, by the end of 1934, may be reduced to about the level of 1928, there will be wide variations in the relative amount of the reduction in different States and regions. In some States it is expected that there will be little decrease, and in some an actual increase may be shown. In other States the numbers may be reduced 50 percent or more. Usually when cattle numbers decrease from the peak of a cycle the reduction is fairly uniform among the States, and the proportion of the total in different areas is about the same at the bottom of the production cycle as it is at the top, except as there has been a continuing trend for the number of cattle in the area west of the Mississippi River to become an increasing proportion of the United States total.

It is to be expected that the North Atlantic, South Atlantic, and east South Central States will show little or no decrease and that individual States in these groups of States may show increases. The decreases in the east North Central States may also be small. The largest decreases will be in the west North Central (especially in the area west of the Missouri River), in the west South Central, and in the Rocky Mountain States. The total decrease in the Intermountain and Pacific States probably will be smaller than in the other areas where reductions occur, but in some States in these regions the reductions may be relatively large. Hence, with numbers east of the Mississippi River decreasing little, if any, and numbers west of the river decreasing markedly, the resulting distribution following these changes will be rather abnormal.

This unusual distribution of cattle numbers doubtless will be reflected in unusual relationships in the distribution of market supplies, in farm prices, and in trends of cattle numbers during the next few years. In the States where numbers have been greatly reduced there will be a marked tendency

during the next few years to restock, and yearly shipments of all kinds from such States will be relatively small and in-shipments relatively large. The local demand for all kinds of stock and breeding cattle will be good, and farm prices will be relatively high compared either with market prices or with farm prices in States in which there has been little reduction in cattle numbers.

If cattle prices are high relative to feed prices during the next few years, as seems probable, increases in numbers can be expected in all areas. This tendency to increase numbers further in the States where present numbers are large because of little reduction this year, may be encouraged and made possible if there is a considerable shift from grain production (both feed and food) to hay and pasture production as a result of production-control programs. This would result in a relatively high ratio of cattle numbers to feed-grain production in these areas. But expansion in these areas will be much less than in the areas in which numbers have been greatly reduced.

Even if slaughter of cattle and calves in 1935 should be much smaller than in any recent year, it is hardly probable that numbers would increase during 1935, in view of above-average death losses and the small calf crop to be expected. Numbers on farms January 1, 1936, therefore, are likely to be no larger, and may be smaller, than on January 1, 1935, and the upswing in the cattle-production cycle is not likely to get under way before 1936.

If prices of cattle advance materially in 1935 it is to be expected that imports of live cattle from Canada and Mexico, especially the latter, will increase sharply, since the high duty on cattle relative to cattle prices in this country has almost shut off such imports during recent years. Larger importations of canned beef and of frozen beef are also probable.

SHEEP AND WOOL

A sharp curtailment in the number of sheep in this country appears certain as a result of the severe drought. If range production and feed production this year had been normal, an increase in sheep numbers probably would have occurred. The lamb crop in 1935 will be reduced considerably and the smaller marketings of lambs next year, along with the decreased market supplies of other meat animals, probably will result in substantially higher lamb prices in 1935 than in 1934.

As a result of the expected reduction in numbers of stock sheep, the wool clip of 1935 will be the smallest in several years. The curtailment of wool manufacturing activity both in the United States and in foreign countries has caused declines in wool prices since early 1934. The level of domestic wool prices in 1935 will depend largely upon world wool production and prices and consumer demand for wool textiles in this country. Although the prospective reduction in wool production in the United States will tend to strengthen domestic prices next year, domestic stocks of wool are now large. Unless mill consumption during the remaining 5 months of the 1934-35 season (up to Apr. 1, 1935) shows a very large increase over the same period a year earlier, stocks at the beginning of the 1935-36 season will be much larger than at the beginning of the present season. This increase in stocks may largely offset any decrease in the 1935 domestic wool clip.

SHEEP AND LAMBS

SUPPLIES

The 1934 lamb crop, estimated at 29,339,000 head, was about 1 percent larger than the 1933 crop, but was slightly smaller than the 1932 crop and considerably smaller than the record 1931 crop. The crop was larger this year than last because of the increase in the western sheep States, since the crop in the native-sheep States was about 2 percent smaller in 1934 than in 1933.

The lamb crop in the 13 western sheep States totaled 18,780,000 head this year, an increase of about 3 percent from that of 1933. The 1934 crop was larger in all of these States except Texas and South Dakota. Because of the unfavorable feed conditions in much of the principal sheep area in Texas during the winter and spring, and short periods of severe weather during and after lambing, the 1934 lamb crop in Texas was reduced materially, being about 1,000,000 head smaller than the crop of 1933. Exclusive of Texas, the lamb crop in the western sheep States was about 1,500,000 head larger than last year. The number of lambs docked per 100 ewes (the percentage lamb crop) was

larger than in 1933 in all of the western sheep States except Texas and South Dakota and was equal to or above the 5-year (1929-33) average in all the States except the two named and New Mexico.

Breeding ewes in the Western States were in rather poor condition at the beginning of 1933-34 as a result of poor feed conditions during the fall. The winter was especially mild, however, and even though feed supplies were relatively short, sheep in most States came through the winter in fairly good condition. Weather during lambing, both early and late, was generally favorable and losses of lambs were relatively small except in Texas. Sheep losses in the winter and spring were also small considering the feed situation and were much smaller than the heavy losses in 1932-33.

Because of the early spring, new range feed made a fairly good start in most of the western sheep States and up to the middle of May prospects for a good grazing season were generally promising. Following that date throughout the summer, rainfall was much below normal and temperatures were excessive. As a result, the average condition of ranges in the Western States in the summer and fall months was the lowest in the 12 years in which range conditions have been reported. The average condition of sheep during the summer also was the lowest ever reported. Although recent rains have partially relieved the drought situation in some of the Western States, the outlook for winter feed in these States is very unfavorable.

In view of the serious feed situation, the Agricultural Adjustment Administration and the Federal Emergency Relief Administration are cooperating in the purchase of sheep (ewes over 1 year old) as a drought-relief measure in States most seriously affected. According to present plans about 5,000,000 sheep will be purchased in this way. By the end of October about 3,255,000 sheep had been bought for Government account in 18 States. Of this number, about 2,000,000 were condemned as unfit for food at the point of purchase and were destroyed. The remainder have been or will be slaughtered and the mutton obtained therefrom utilized for relief purposes. Such purchases of ewes will make possible the holding back of larger numbers of ewe lambs for flock replacements, and thus will tend to reduce the supply of lambs marketed below what otherwise would have been necessary. Nevertheless, it is probable that the total seasonal market movement of western lambs will be large despite the ewe-buying program.

The commercial slaughter of sheep and lambs during the first 6 months of the present crop-marketing year, beginning May 1, was about 7 percent smaller than the corresponding period last year. Because of a somewhat delayed movement of the native-lamb crop and the large early movement of feeder lambs into the Corn Belt, slaughter supplies of sheep and lambs for regular distribution during the next 2 months are expected to be larger than those of a year earlier. Lambs marketed in this period probably will be somewhat below average in weight and condition.

Although supplies of feed grains and hay in all the principal feeding States of the Corn Belt are very short, the movement of feeder lambs inspected through public markets into the Corn Belt was much larger from July 1 to the end of October than the total of the very small shipments during the same period in either 1933 or 1932. Shipments into the States west of the Missouri River were much smaller than last year, but there was a heavy movement into the States east of the Mississippi River and into Iowa and Minnesota.

In spite of the increased movement of feeder lambs from markets, the total number of lambs to be fed this year is expected to be somewhat smaller than last year. Direct shipments not going through markets into the western Corn Belt, which usually make up a large part of the total number fed in that area, are expected to be much smaller than last year. Lamb feeding in most of the important feeding areas in the Western States also is expected to be sharply curtailed. Because of the general shortage of range feed in the western sheep States this year the market movement of lambs was earlier than usual with a greater-than-average proportion of feeder lambs. Hence, it is probable that the proportion of western feeder lambs going through stockyard markets will be much larger this year than in the last few years. Shipments of feeder lambs into the Corn Belt during November and December are expected to be relatively much smaller than during the preceding 4 months.

PRICES

The downward trend in sheep and lamb prices which began in early 1929 was checked in early 1933. Considerable recovery occurred in May and June last year, but this upswing was followed by a seasonal decline from July to November. The improvement in lamb prices from November 1933 to May 1934 was very pronounced, the rise carrying the top prices of fed woolled lambs as well as those of spring lambs at Chicago above \$10 per 100 pounds. The average price of lambs slaughtered in the fed-lamb marketing season, December 1933 to April 1934, was \$8.05 per 100 pounds, compared with \$5.42 in 1932-33, and it was the highest seasonal average for fed lambs since 1930-31. The average price of Choice spring lambs at Chicago in May 1934 was \$10.62, compared with \$7.44 in May a year earlier. Since early June, however, lamb prices have weakened considerably and prices from July through October have been below those of a year earlier. The average price of lambs at Chicago during the last week of October was \$6.62, compared with \$7 for the corresponding week in 1933.

Prices of slaughter ewes declined to a record low level in 1931 and 1932, but made some recovery in the first half of 1933. In late 1933 and early 1934 prices of ewes advanced sharply and in March 1934 they were at the highest level since early 1930. Since early May, however, prices of slaughter ewes have declined greatly and in late October they were only slightly higher than the record low prices of 1932. Market prices of breeding ewes, especially good-mouthed young ewes, have strengthened considerably since July.

Much of the advance in sheep and lamb prices in 1933 was the result of the sharp rise in wool prices, since wholesale and retail prices of dressed lamb and mutton did not advance materially until early 1934. The weakness in sheep and lamb prices in recent months has been associated with lower prices for wool as well as for dressed lamb.

In 1935 supplies of all meats, including lamb, are expected to be sharply curtailed, and lamb prices probably will average materially higher than in the present year. In view of the decrease in lamb feeding in prospect for the coming winter, some advance in fed-lamb prices over the relatively high levels of last winter and spring is expected.

PRODUCTION OUTLOOK

In view of the liquidation of sheep occurring because of the drought and of the poor condition of sheep in many areas, it appears probable that sheep numbers by the end of 1934 will be reduced sharply in most of the western sheep States and in some of the native sheep States. Despite this prospective reduction in numbers, the number of sheep and other livestock remaining in many areas in the Western States and in some areas of the Corn Belt will be large relative to the very short supplies of feed available.

Even with fairly favorable weather conditions next winter ewes in the Western States where feed is short will be in poor condition at both breeding and lambing seasons, and the 1935 lamb-crop percentage will be below average. The number of death losses will depend largely upon the severity of the winter, but even under favorable weather conditions such losses will be relatively large, thus further reducing sheep numbers. It is probable therefore that the 1935 lamb crop will be the smallest in several years.

If 1934 had been a favorable year for feed production, it is highly probable that the number of stock sheep would have been increased during the year and the downward trend in sheep numbers which began in 1931 would have ended. Under present conditions this downward trend is likely to be continued for at least 1 year longer, and the low point in numbers will be much below what it would have been except for the drought.

WOOL

DOMESTIC AND FOREIGN PRODUCTION

Preliminary estimates of wool production in several important producing countries point to a world wool production in 1934 little different from that of 1933, but smaller than the 5-year average of 1928-32. Small increases in the 1934 production are now indicated in Australia and New Zealand. A decrease is estimated for the United States and the Union of South Africa, with a still

further decrease in prospect for both countries in 1935. Sheep numbers apparently were still at a relatively high level in most countries of the Southern Hemisphere at the beginning of 1934 except in South Africa, but reported smaller lamb crops in that country and in Australia in 1934 indicate a reduction in numbers by January 1, 1935.

Production of wool shorn or to be shorn in the United States in 1934 was estimated at 355,000,000 pounds, which is about 3 percent smaller than that of last year, but 1 percent larger than the 5-year (1929-33) average production. The decrease in wool production this year was largely the result of the sharp reduction in Texas. Production in most of the other western sheep States was larger than that of last year. Wool production in the native-sheep States in 1934 was a little larger than in 1933.

It is now estimated that the Australian wool clip for 1934 will be about 990,000,000 pounds, grease equivalent, compared with 950,000,000 pounds in 1933 and the record production of 1,062,000,000 pounds in 1932. Wool production for 1934 in the Union of South Africa was recently estimated at 245,000,000 pounds, compared with 274,000,000 pounds in 1933 and the record production of 316,000,000 pounds in 1932. The decrease this year is chiefly due to the sharp reduction in sheep numbers. A recent estimate of sheep numbers in New Zealand indicates that the wool clip in that country in 1934 probably will be slightly larger than in 1933. The 1933 clip was a record one, being officially estimated at 300,000,000 pounds. The increase over 1932 was the result of a heavier fleece per sheep, a record lamb crop, and a later slaughter season. Estimates of wool production in Argentina and Uruguay for 1934 are not yet available, but reports from Argentina indicate that weather and grazing conditions for the season thus far have been relatively favorable for wool production, and that production will be about the same as it was last year. Stocks of wool at selling centers in the Southern Hemisphere at the end of September 1934 were somewhat larger than those of a year earlier, but they were smaller than the stocks 2 years earlier.

World wool production, including Russia and China, in 1933 was estimated at 3,457,000,000 pounds, which was a decrease of 5 percent compared with that of 1932 and 6 percent compared with the 1928-32 average. Average production for the 5 years 1921-25 was only 3,042,000,000 pounds. Production in Russia, where wool is mostly of the coarse carpet type, has been declining since 1929. World production, excluding Russia and China, in 1933 was estimated at 3,241,000,000 pounds, which was also 5 percent smaller than that of 1932. Over 60 percent of this latter total was produced in countries of the Southern Hemisphere, 13 percent in the United States, and most of the remainder in European countries.

On January 1, 1934, the number of stock sheep in the United States was slightly larger than at the beginning of 1933, but the total number of sheep and lambs was slightly smaller. In Australia, sheep numbers increased steadily from 1928 to 1933. Conditions were reported as unfavorable for the autumn and winter (March-June) lambing season, this year, and a decrease is expected in the 1934 lamb crop. Recent reports from New Zealand indicate that sheep numbers in that country increased somewhat during last year, after having declined steadily from 1930 to 1933. Because of the prolonged and severe drought in South Africa during 1932 and 1933, sheep numbers there have declined considerably from the 1931 record number. A decrease of about 3 percent in the number of sheep in European countries during the last year is indicated by such estimates as are now available.

CONSUMPTION, STOCKS, TRADE

Activity in the United States wool-manufacturing industry declined steadily in the latter part of 1933 and the first half of 1934, after the great rush of activity in the summer months of 1933. Consumption of combing and clothing wool by United States mills declined from 146 percent of the 1923-29 average in June and July 1933 to 55 percent in June 1934. Little change in activity was reported in July and August, but in September the strike of textile workers and the closing down of some mills because of a lack of orders resulted in a further decrease in consumption in that month. In the first 9 months of 1934 consumption of combing and clothing wool by manufacturers reporting to the Bureau of the Census, comprising a major portion of the industry, was about 35 percent smaller than in the same months of 1933 and was smaller than in the same period of any recent year. Consumption for the entire

year 1934 will probably be as small as, or smaller than, for 1932, the previous year of lowest consumption in the 15-year period for which statistics are available.

The low activity in the wool-manufacturing industry in 1934, together with the lower prices for wool and the increase in consumer buying power, probably has resulted in a considerable reduction in the heavy stocks of semimanufactures and finished goods which had accumulated by the end of 1933. Mill consumption of wool in 1935, therefore, will probably be larger than in 1934, thus continuing the tendency toward a 2-year cyclical movement which has prevailed in the wool industry during late years. The extent of the increase in consumption will depend partly upon developments in the general economic situation and partly upon the extent to which wool waste, recovered wool, and wool substitutes are used to displace unmanufactured wool in the wool-manufacturing industry. It seems probable that the decline in the output of wool-textile materials in the last year has not been so great as the decline in wool consumption would indicate, since the higher wool prices apparently resulted in a much larger use of recovered wool and wool substitutes than in the years 1930-32, when prices of wool were low.

Stocks of wool, both foreign and domestic, but excluding carpet wool held by dealers and manufacturers in the United States, on June 30, 1934, amounted to 349,117,000 pounds, in condition reported, which is estimated at 382,915,000 pounds grease equivalent. Stocks of wool tops were reported at 31,348,000 pounds, estimated as the equivalent of about 95,000,000 pounds of grease wool. About two-thirds of the stocks of wool as reported were held by dealers and one-third by manufacturers. These figures do not represent the total wool stocks of the country as of June 30, since they do not include wool still in the hands of growers and stored in warehouses in the wool-producing States. Such stocks were larger than a year earlier and have been estimated as being more than 100,000,000 pounds. The total grease equivalent of wool and tops, but excluding noils, in all positions apparently was about 575,000,000 pounds. Although comparable figures on stocks of wool are not available for earlier years, the total as reported and estimated at the end of June this year appeared to be large both in relation to domestic production and to probable consumption requirements in this country. Stocks of wool held by dealers and manufacturers at the end of September were somewhat larger than at the end of June, but this increase probably was largely offset by a decrease in stocks of wool held in the wool-producing States.

The proportion of the 1934 clip taken by manufacturers up to October 1 was very small and in sharp contrast with the large proportion of the 1933 clip taken to the corresponding date of last year. Likewise the movement of this year's clip into consuming centers to October 1 has been relatively small. Receipts of domestic wool at Boston from April 1 to September 30, 1934, of 144,000,000 pounds were equal to about 41 percent of estimated shorn-wool production in 1934. In the same months of 1933 receipts at Boston equaled 59 percent of the production, and for those months in the 5 years, 1929-33, receipts averaged about 55 percent of the shorn-wool production. During the same 5-year period the average proportion which annual receipts (April to March) of domestic wool at Boston represented of the estimated shorn-wool production was 67 percent.

United States imports for consumption of combing and clothing wool in the first 9 months of 1934 were 18,082,000 pounds compared with net imports of 31,373,000 pounds in the first 9 months of 1933. In view of the low mill consumption and the slow market movement of the domestic clip in 1934 it is probable that stocks from the 1934 clip still available for manufacture at the end of 1934 will be large and that imports for the 1934-35 season will be small.

Conditions in the wool industries in foreign countries in the last year have been somewhat similar to conditions in the United States. Wool-manufacturing activity in Europe was relatively high through most of 1933, but the situation in the wool industry became very unsettled during the early part of 1934. The uncertainty in European countries has been largely a result of a partial prohibition of imports into Germany, Italian import-license requirements, and restrictions on imports of manufactured goods in several other consuming countries. These difficulties have resulted in a decline in trading and manufacturing activity in European countries since early 1934. Imports of wool in the periods so far reported for 1934 have been considerably smaller than in the corresponding period of 1933 in all of the principal European wool-consuming countries

except Germany. Relatively large imports of wool into Germany from February to May this year probably were partly the result of the anticipation of the later restrictions on imports into that country. Imports into Germany showed a marked decline after May, and imports for the year will probably be considerably smaller than in 1933. Stocks of tops, however, are large in all countries with the exception of Germany, where replacements are difficult because of the restrictions on imports of wool and wool products.

PRICES

Prices of domestic wool in the Boston market reached the high point of the 1933-34 advance in February 1934. In the 12 months from April 1933 to March 1934, little reaction occurred in wool prices, despite the fact that declines in prices of other important commodities occurred during this period. Partly because of the low rate of wool-manufacturing activity thus far in 1934, price declines on most grades of wool have occurred in recent months. The weakness in foreign markets after January also was a contributing factor in the domestic price decline. Prices for strictly combing territory wools in the Boston market in October were 13 to 20 percent below the February high point and were 8 to 15 percent below prices in October 1933. The decline on fleece wools since January 1934 has been somewhat greater, being about 20 percent on strictly combing fine and half-blood wools and 30 percent on wools grading 46s to 56s. Prices of strictly combing territory wools at Boston averaged 76 cents a pound scoured basis for 64s, 70s, 80s, and 56 cents for 46s in October 1934, compared with 87 cents and 65.5 cents respectively at the January-February 1934 high points. In February 1933, before the price rise got under way, the average prices of these wools were 44 and 30.2 cents a pound respectively. Ohio and similar fleece wools of strictly combing order were quoted at 26.5 to 30 cents a pound grease basis in October 1934 compared with 35.5 to 42.5 cents in January, and 16.5 to 19.7 cents in February 1933. Direct sales of new-clip wool have been reported during the present season at prices substantially lower than the quotations on similar spot wools at Boston.

During October, trading on the Boston market increased considerably after several months of inactivity. This greater activity resulted chiefly from some improvement in the goods market and recent large Government contracts for wool materials. Increased buying of wools in October also was reported in some foreign selling centers.

Declines in wool prices in foreign markets since January have been greater than the declines in the domestic market and since April the margin of domestic prices over foreign prices has widened considerably. Prices in foreign markets showed some improvement in October, but the advance was not reflected in quotations on foreign wool in terms of United States currency because of the increase in the exchange value of the dollar in terms of the English pound.

The trend of domestic wool prices during the remainder of the 1934-35 season will depend largely upon developments in the domestic wool-manufacturing industry and on changes in prices in foreign markets in terms of United States currency. In view of the large supplies of domestic wool still available and the present wide margin between domestic and foreign prices, no material increase in domestic prices is expected until there is a marked improvement in the wool-manufacturing situation.

MOHAIR

Most of the apparent improvement in the mohair situation at the end of 1933, as indicated by the sharp advance in prices, disappeared during 1934, and the outlook at present is not much more favorable than it was 2 years ago. Consumption of mohair in 1934 has been below that in 1933, with a resulting further increase in stocks which are now apparently of record size. Little of the 1934 production has been sold, and prices offered at present are much below those prevailing a year ago. Feed supplies in the principal goat-raising States are very short, and death losses this winter may be large.

SUPPLIES

Domestic supplies of mohair have continued to increase during 1934, and the present supply in the hands of manufacturers, dealers, and growers is the largest ever known, probably in excess of 40,000,000 pounds. This quantity is

equivalent to 3 years' needs at a relatively high rate of consumption. A year ago it was estimated that the accumulation of 1931 and 1932 mohair in the hands of manufacturers at the beginning of 1933 was between 30,000,000 and 35,000,000 pounds. Production in 1933 was estimated in March of this year at 15,895,000 pounds. In the latter half of 1933 more than 3,000,000 pounds of mohair was imported, most of which is still held in bond. A liberal estimate of consumption in 1933 is about 14,000,000 pounds, so that stocks of domestic mohair in all positions, but largely in the hands of manufacturers and dealers, at the beginning of 1934 were probably 2,000,000 pounds larger than at the beginning of 1933. Estimates of production in 1934 have not yet been made, but reports from Texas indicate that the clip in that State was probably 2,000,000 pounds smaller than in 1933. The total United States clip was possibly under 14,000,000 pounds; most of this is still in the hands of growers or in local warehouses. Mohair consumed in 1934 has been very largely from supplies on hand at the beginning of the year.

CONSUMPTION

Domestic consumption of mohair increased markedly during the period from April to November 1933 and then dropped off sharply. During 1934 it has not made any sustained recovery, and since late summer consumption has been at a very low ebb. Although definite information as to the volume of consumption is lacking, it would seem that the estimate of 8,000,000 pounds consumed during the first 10 months of 1934 is a liberal one. The woolen industry has continued to use a fair quantity of mohair during 1934, but there has been a smaller consumption of mohair in the manufacture of strictly mohair fabrics. The manufacture of automobile linings has held up fairly well, but this has tended to be offset by a decrease in furniture upholsterings.

PRICES

Prices of mohair made a marked advance during 1933. The average of monthly quotations on medium sorted mohair at Boston went from 17.5 cents a pound in March to 48.5 cents in October. Prices paid for the 1933 spring clip of mohair in Texas were 12 to 13 cents, but prices for the fall clip reached 45 cents. Boston quotations during the early months of 1934 were maintained at the late 1933 levels, but as consumption and demand fell off these gradually declined and the monthly average of quotations for sorted medium mohair in September was 35.5 cents compared with 48.5 cents in January. To a considerable extent the quoted prices since midsummer were only nominal, since very little mohair was being sold, and they were much above the prices that could have been obtained for substantial quantities. In late September a sale of a substantial quantity was made at much below the quoted prices, and at present there is little certainty as to what is a quotable price.

As a result of the high prices obtained for the 1933 fall clip, Texas growers anticipated correspondingly high prices for the 1934 spring clip. Buyers considered the asking prices entirely too high and as a result practically no sales of Texas spring mohair were made. Limited quantities of New Mexico and Arizona mohair have been bought at prices to growers ranging from around 35 cents early in the season to 25 cents in the summer. Recently sales of Texas mohair by growers for as low as 15 cents and kid hair at 25 cents have been reported. Practically all of the 1934 Texas spring and fall clips are still in the State, either in warehouses or on ranches.

FOREIGN SITUATION

Production of mohair in both Turkey and South Africa in 1934 was smaller than in 1933, with prospects of further reduction in 1935. Quantities available for sale (unsold carry-over plus current production) at the beginning of the 1934-35 season of about 23,100,000 pounds was about 1,500,000 pounds smaller than at the beginning of the 1933-34 season. Prices of mohair in these countries advanced sharply in 1933. The average price of mohair exported from South Africa in the 1933-34 season was about 13 cents a pound compared with an average of 6 cents for the 1932-33 season. Since July this year prices in South Africa have made a rather sharp drop.

Much of the accumulated mohair in Turkey at the beginning of 1933 went to Russia but Germany has taken most of the exports this season. The heavy

German purchases this year were due in part to the restrictions on imports of wool but to a larger extent were due to the fact that Germany had a considerable trade balance blocked in Turkey by prevailing exchange restrictions and the mohair purchases were made to recover a part of this balance.

OUTLOOK

Production of mohair in this country apparently has exceeded consumption for each of the last 4 or 5 years, with a resulting growing accumulation of stocks, which at present are of record proportion. Until these stocks are reduced to about a year's normal consumption requirements any definite improvement in the mohair situation seems improbable.

The feed situation in most of the important Angora-goat States is very serious as a result of the drought. As a part of its drought-relief program, the Government is buying Angora goats (does over 1 year old) in the drought areas. Purchases of about 500,000 head have been authorized and up to October 12 about 17,000 head have been bought. With mohair prices low, and feed supplies very short and high in price, it is not improbable that death losses of goats during the coming winter and spring may be heavy, especially if the winter should be severe. Even if goat numbers should be materially reduced as a result of governmental buying and heavy death losses, the present large stocks of mohair will continue as a weakening factor to price recovery.

HORSES AND MULES

Should colt production continue to increase in 1935 and 1936 as rapidly as in 1933 and 1934, the low point of the long downward trend in the number of all horses and mules on farms will be reached about the end of 1936, and the low point in the number of animals of working age will occur about 2 years later. During the remainder of this period of decreasing numbers of horses and mules an increase in the use of mechanical power may be necessary to meet farm-power requirements. The extent of this increase will undoubtedly influence future prices of horses and mules, but with the relatively large number of old animals now on farms, and consequently the relatively high death rate, demand for horses and mules is expected to strengthen substantially during the next few years.

SUPPLIES

The decline in numbers of horses and mules on farms, which has been under way for about 15 years in the case of horses and 9 years in the case of mules, continued through 1933 and 1934. The estimated number of horses on farms January 1, 1934, or 11,942,000, was 2.1 percent smaller than a year earlier and about 40 percent smaller than on January 1, 1920. The number of mules January 1, 1934, or 4,931,000, was 2 percent smaller than a year earlier and 17 percent smaller than the peak number on January 1, 1925. The numbers of each on January 1, 1935, doubtless will show a further decrease, but the decreases during 1934 will probably not be so large as during 1933.

Although numbers of both horses and mules on farms will probably decline for several years yet, it is expected that the decrease from present numbers until the low point is reached will be relatively small. Until the end of 1932 the decline in numbers was a result of the decrease in the number of animals of working age and was accentuated by a steady decrease in the number of colts raised each year. The downward trend in colt production was apparently checked in 1932, and in 1933 there was an unmistakable increase. The number of horse colts under 1 year old on January 1, 1934, was estimated at 526,000 head, an increase of 15 percent over the number a year earlier and the largest number since January 1, 1927. The number of mule colts under 1 year old of 83,000 head was about 9 percent larger than a year earlier. Such information as is available indicates that there has been a further expansion in colt production in 1934 and the number of horse colts on January 1, 1935, will probably be the largest since 1924 and the number of mule colts the largest since 1929. If colt production continues to increase in 1935 and 1936 as rapidly as in 1933 and 1934, the number of colts raised in 1936 will probably at least offset the death loss and other disappearance of horses and mules from farms in that year and at the end of 1936 numbers will have reached the low point of the long downward trend.

It is evident, however, that the number of horses and mules of working age will continue to decline for a longer period, since at the time the number of colts raised offsets death losses and other disappearances, it will still be at least 2 years before the time when these colts will have reached working age. Hence, during the next 4 or 5 years agriculture in this country will have to adjust itself to a further decrease in available animal power.

DEMAND

During the first 8 months of 1934 the demand for horses and mules was generally good. Receipts of horses at public stockyards were about 63 percent larger, and of mules about 36 percent larger, than during the first 9 months of 1933. On September 15, 1934, the average farm price of horses was \$79 per head compared with \$69 on the same date a year earlier, and the prices of mules stood at \$94 per head in September 1934 as against \$77 in September 1933.

At some markets broad demand characterized the trade all through the year, even during the summer season when dullness ordinarily develops. Demand for cotton mules held up well and the outlet for horses in the East expanded. Prices at midwestern markets reached the high point in March when values were about \$25 per head above those of a year earlier. October prices were from \$10 to \$15 above prices of October 1933. More interest in colts, especially young animals from weanlings to 4 or 5 years old, is now manifest than at any time in many years. Reports indicate that in some cases colts from 1 to 3 years old and in good condition are outselling usable horses 7 to 8 years old. The present trade demand is for mares, which are generally selling at a considerable premium over work geldings. Until 2 years ago the opposite was true, the great majority of horse buyers then preferring geldings.

GENERAL PROSPECTS

There apparently has been a rather marked change in sentiment among farmers toward horse and mule production. During the decade from 1920 to 1930 the prices of horses were very low in relation to the prices of other livestock and for some kinds of horses the only outlet was sale for slaughter at very low prices. But since 1930 the situation has been the reverse and horse and mule prices, reflecting the growing shortage, have tended to strengthen while prices of all other kinds of livestock were declining.

Because of the greatly reduced numbers of stallions and jacks and of suitable brood mares the start toward increased colt production was necessarily slow. But once under way the increase may be expected to gain momentum rather rapidly. Since the number of animals of working age is certain to decrease further each year for some years, prices of work animals are expected to advance further and to stimulate interest in colt raising. If the trend of agricultural adjustment over the next few years is toward decreased food-grain and feed-grain production and increased acreage of pasture and hay, this may also tend to stimulate colt production.

The city and industrial-market outlet for surplus horses and mules has largely disappeared and there is no likelihood of its ever coming back. There is little reason to expect that the use of mechanical power on farms will be greatly reduced from what it has been during the last few years. Hence, it is almost certain that agriculture in this country will not again have use for a number of horses and mules anything like so large as the number on farms 15 years ago. It is probable that the present number would be ample for present needs if the animals were of better type and were well distributed among the various age groups, instead of so large a proportion being in the old-age groups (12 years old and over) which results in relatively heavy yearly death losses as well as reduced power efficiency. The present number of horses and mules 2 years old and over is about 15,500,000. A number of colts raised each year of between 850,000 and 900,000 would be about sufficient to maintain the present number of work stock. The number raised in 1933 was estimated at 609,000.

The number of work stock that will be needed on farms during the next few years will depend upon the extent to which mechanical power is used and upon the acreage of crops grown. During the last 2 years demand for animal power has been strengthened by low feed prices, and by the financial situation in agriculture, which has made it difficult for farmers to pay for replacements, repairs, and fuel for motor machinery. Because of reduced feed supplies and higher feed prices in 1935, some farmers may resort to a greater use of mechan-

power, and during the next few years some expansion in the use of tractors and motor trucks may be necessary to offset the decreasing numbers of work stock, since the decrease probably will not be halted before 1937 or 1938. This necessity may develop in spite of reductions that may occur in crop acreage, for it is unlikely that such reductions will more than offset the reduction of power available on farms, resulting from declining numbers of horses and mules, and from the small purchases of mechanical-power equipment in recent years.

It seems probable that farmers will not be able to replace their work stock a few years from now at prices like those now prevailing. But those who are producing or planning to produce work animals as an important source of income should follow closely the trends of the next few years in colt production and in the use of mechanical power by farmers, in order to adjust their production to probable future demand. Those farmers who produce horses as a side line and whose investment in horses is largely for power rather than for reproduction purposes can adjust their breeding operations much more economically to the outlook for horses. Many farmers who usually have an abundance of cheap roughage are well situated for the economical production of a few colts to sell or to replace worn-out work animals. Young mares that are used for work, and at the same time are used to produce colts, form the economical basis for work-stock replacement.

DAIRY PRODUCTS

The shortage of hay and grain makes the outlook for dairying unfavorable for the current feeding season. Prices of hay and grain are now higher in comparison with the price of butterfat than in any previous fall since the drought of 1911, and throughout the winter the price of feed is expected to continue unusually high in comparison with the prices of dairy products. After new grass and new grain are available next summer, dairymen should benefit for a year or more from a return to a more favorable relation of the price of dairy products to the price of grain.

A low level of milk production this winter is certain. Each month from November 1933 through August 1934 both total milk production and the quantity of dairy products manufactured have been below production in the same month of the previous year. Still lower levels of production are expected to prevail during the coming winter and spring. Milk production is likely to continue rather low until the summer of 1936 at least, for until a new corn crop can be harvested the shortage of grain is expected to result in rather light feeding and in lower-than-average milk production per cow unless weather conditions or other factors are unusually favorable. The number of milk cows is now being rapidly reduced, fewer heifers are being raised, and the extensive drought damage suffered by pastures, meadows, and new seedlings will tend to restrict expansion of dairying during 1935. The current shift toward having more of the cows freshen on pasture in the spring also decreases the prospects of heavy winter production a year hence.

Until new feed crops are available prices of dairy products are likely to average higher than during last season but the possibility of importing butter at prices very little above those now prevailing is expected to prevent any great increase in the price of butter and will tend to limit increases in the prices of other dairy products.

MILK COWS AND FARM PRODUCTION

After increasing since 1928, the numbers of milk cows are now decreasing and some further decrease is in prospect. On June 1, 1934, the number of milk cows on farms was only a fraction of 1 percent larger than on June 1, last year. This was the smallest yearly increase shown since 1928, and compares with a yearly increase of 3.1 percent for 1933 shown on January 1, 1934, when the number of cows kept for milk (including 2-year-old heifers) was estimated at 26,062,000 head.

Since June 1 continued heavy marketings through usual channels and purchases of cattle by the Government in the drought areas have resulted in more than the usual seasonal decrease in milk-cow numbers. On October 1, judging from the reports received from crop correspondents, the number of milk cows on farms was 2 to 3 percent less than the number a year earlier. By late winter the number of milk cows will probably be at least 4 percent below the number

last year. As the number of heifers being raised has been sharply reduced, the number of milk cows is likely to decline somewhat further during the next year or two unless the rate of culling is abnormally low. The reduction this year will be most marked in the drought area, where the extreme shortage of feed grain and hay makes it necessary to reduce numbers of all classes of livestock if heavy losses this winter are to be prevented. Much of the important butterfat-producing territory has been affected by drought this year. Outside the drought areas the reduction will be more gradual, although it may be hastened by sharply higher feed costs.

During the last half century the number of cattle has tended to increase periodically, the peak of numbers being reached about every 15 years. Numbers of milk cows have increased rather generally during this period, but the rate of increase has been most rapid when all cattle numbers were increasing. Up to last spring numbers had been increasing steadily for about 6 years. It is probable that they will now decrease for at least another year. Current reports, taken early in June, before the drought became so widespread, when compared with similar records for recent years, showed for nearly all States a sharp reduction in the number of heifers being added to the milking herds. The proportion of spring-born calves reported as being saved for milk cows was also smaller than shown by similar reports in any year since 1930. Ordinarily the proportion of the heifers raised is lowest when the price of milk cows is low in comparison with the prices of grain and hay. On September 15 the average price of milk cows was very much lower in comparison with both hay and grain prices than on the same date in any of the previous 23 years for which records are available. In comparison with September 1932, the price of milk cows was substantially lower and the price of feed was twice as high. Probably the number of helper calves saved for milk cows will continue low until at least next fall. Calves saved then would not come into production as cows until late in 1937 or early in 1938.

Part of the increase in the number of milk cows in the last few years came from an increase in the use of beef cows and dual-purpose cows for milking, particularly in the butter-producing area stretching from North Dakota into Texas and eastward through the western and central portions of the Corn Belt. The forced selling of cattle in this general region particularly, and to a less extent in other areas, is reducing the number of such cows which can be milked.

Marketings of cows have increased substantially during the past year, owing largely to the accumulated surplus of cattle and to the drought, with its accompanying feed shortages, rapidly increased feed costs, governmental purchases, and distress marketings. Marketings are likely to continue heavy until midwinter or even later, and will depend somewhat upon the severity of the winter.

Emergency purchases of cattle and calves by the Government up to October 12, 1934, amounted to 6,574,000 head. Of these about 1,000,000 head had been condemned as unfit for shipment and 4,000,000 had been shipped either to packing plants or to grazing areas. About 24 percent of the purchases were classed as calves, indicating nearly 1,600,000 head. In each month of this year the numbers of cows and heifers slaughtered under Federal inspection have been larger than in the corresponding months of 1933. Exclusive of those slaughtered on Government account, a total of 2,978,000 head of cows and heifers was slaughtered under Federal inspection in the first 8 months of 1934, compared with 2,348,000 head during the same period last year. The number of cows and heifers included in the Government purchase of cattle cannot be determined at this time, but, judging from such rough approximations as can now be made, the disposal of cows and heifers by the end of the year may total as many as 5,000,000 head above disposals in 1933. Definite statistics on breed are not available, but the opinions of those at stockyards indicate that a considerable number are of dairy breeding.

Thus far the removal of cows purchased by the Government had not greatly affected total milk production. Most of the cows sold were dry or were producing little milk and so far their disposal appears to have been more than offset by the early sale of sucking calves. Slaughtering of calves under Federal inspection, including those slaughtered on Government account, increased from 3,626,000 head during the first 9 months of 1933 to 5,741,000 head during the same period of 1934.

Through congressional action that appropriated additional funds for cattle-disease control, tuberculosis-eradication work has been speeded up in several States. By the same action the United States Department of Agriculture is authorized to cooperate with the States in the elimination of cattle that react to the blood test for Bang's disease. This will make it possible for cattle owners to benefit from having clean herds and at the same time receive indemnities for diseased animals eliminated. This work on Bang's disease is already under way in all but a few of the States. Although tuberculosis and Bang's disease eradication will reduce numbers in local areas, it will have but slight effect during the next 6 months in reducing milk-cow numbers in the country as a whole.

MILK PRODUCTION

Total milk production on farms increased from 98,782,000,000 pounds in 1929 to 102,309,000,000 pounds in 1933, an increase of less than 4 percent in the 4 years. During this period the number of milk cows on farms increased over 13 percent. Milk production per cow has decreased each year since 1929 owing to various causes, chiefly less intensive feeding, less culling, and inclusion of more dual-purpose and beef cows in the milking herds. During 1933 production averaged 4,178 pounds compared with 4,309 pounds in 1932, a decrease of about 3 percent. For the first 8 months of 1934, milk production per cow on the 1st of each month was below production at the same period last year, ranging from about 9 percent below on February 1, following a period of low butterfat prices, to 2 percent below last year on July 1. This low production per cow was largely the result of increased feed costs, shortages of grain and hay in many areas with the accompanying low rate of grain feeding, and poor pastures. From December 1933 until May 1934 production was also reduced by the increased proportion of the milk cows that were dry because they were due to freshen on pasture in the late spring and early summer months. Pasture conditions during the last season averaged the lowest on record. Usually grain feeding is increased when pastures are poor, but such records as are available indicate that this year the quantity of grain and concentrates fed per milk cow has been no heavier than usual during the pasturage season, except in the northeastern fluid-milk area, where the rate of feeding has been heavier than in any of the last three summers. During the recent months, milk production per cow in this area has been higher than last year and the number of milk cows on farms appears to have been well maintained there. In the Pacific Coast States, milk production per cow during most of the first 8 months averaged above last year, owing to an early season and better pastures, but in recent months pastures there have declined and production has decreased.

In most of the areas outside of the Northeast and West, production per cow has been below last year until the last 2 or 3 months and is still much below last year in most of the drought area. On September 1 and October 1, however, production per milk cow in the United States was reported slightly higher than on the same dates last year, notwithstanding the very low production in the severe drought area. In the South, east of the Mississippi, this favorable showing was due to good pastures. In the central and northeastern areas, the higher production per cow may have been due in part to the marked improvement in pastures, to the close culling of low-producing cows, to the early sale of sucking calves, and to the early feeding of green corn; but the principal cause appears to have been the small proportion of the cows that were dry or nearly dry because they were due to freshen in the late fall months. For the country as a whole the proportion of milk cows reported dry on October 1 was the lowest that has been reported on that date during the 10 years for which comparable records are available. The proportion reported dry was particularly low from New Jersey west to Kansas and the Dakotas. This shifting in the season of freshening is one factor in the situation that is most difficult to measure. All signs seem to indicate that a shift away from late-fall freshening and toward increased May and June freshening has been taking place since the middle of 1932, reversing the trend toward fall freshening that was in evidence during the previous 4 years. The present shift seems a natural adjustment to higher-priced grain as compared with prices of dairy products, and a season when winter prices were unfavorable as compared with summer prices.

But this increased production per cow on September 1 and October 1 was not enough to offset the decrease in milk-cow numbers compared with last year, and total milk production on these dates was below the same period last

year, as has been the case in almost all other months in 1934. Total production during the first 9 months of 1934 has apparently been around 3 percent below production in the same months of 1933.

The decrease in the number of milk cows on farms, the decrease in fall freshening, the acute scarcity and high price of grain feed, and the necessity of substituting straw and fodder for part of the usual hay ration all point to a material reduction in milk production this winter below production in the winter months of last year. However, in calculating the effect of the feed shortage on commercial deliveries of milk and cream this fall and winter, it must be remembered that this season calves will probably be weaned earlier than in any recent year. The quantity of butter made on farms has also been reduced during recent months owing to the very low price received for such butter as compared with the price received for butterfat.

Supplies of fluid milk and cream required for city use are likely to be maintained, and the effect of reduced total milk production will be felt principally in the case of manufactured dairy products. In the butterfat-producing areas of the western Corn Belt a very low level of production during the late winter months seems inevitable and unless prices of dairy products rise materially many dairymen elsewhere will have difficulty in obtaining their usual supplies of feed.

FEED SUPPLY

By far the most important factor on the supply side of the dairy situation for the next few months is the feed shortage and the geographic distribution of the limited supplies of grain and roughage.

Even if farm and commercial stocks of grain next June are reduced far below the lowest point in recent years, feed imports more than doubled, wheat feeding increased, and various other adjustments made, the total quantity of grain, mill feeds, and concentrates available for feeding livestock during the 12-month period ending July 1, 1935, can hardly exceed 60,000,000 tons and may be several million tons less. Compared with this, about 87,500,000 tons were fed last year and an average of about 96,000,000 tons were fed annually during the preceding 9 years for which comparable figures are available. Supplies still remaining and available for the winter-feeding period may be relatively even shorter than these figures indicate, for many farmers appear to have been feeding at a more liberal rate than can be maintained with the supplies in sight.

As a result of this shortage the number of animals on farms is being rapidly reduced. By November the number of meat animals is expected to be 20 percent lower than at the same time last year, but even with this reduction the feed of the remaining livestock will have to be greatly reduced.

The shortage of roughage presents a serious problem in some areas, but from a national standpoint the situation is not so extreme, because millions of acres of corn which failed to produce ears were salvaged as fodder. There still will be more than the usual supply of silage but the quantity of hay available for feeding during the current feeding season is now estimated at 60,500,000 tons, compared with about 77,700,000 tons fed last season and an average of nearly 84,000,000 tons fed annually during the preceding 10 years.

To supplement the short supply of hay there is the record tonnage of corn fodder and considerable straw and stover and cottonseed hulls that can be used. The drought areas have also stacked large quantities of Russian thistles and weeds. These low-grade roughages, although helpful in wintering breeding herds and work stock, will not take the place of hay for milk production. It is probable that on most farms where different classes of roughages are available, cows being milked will be favored over most other kinds of livestock; but, judging from the October reports of dairy reporters of the Department, in many States severely affected by the drought hay will constitute far less than the usual proportion of the total roughage that will be fed to milk cows this winter.

The shortage of roughage and the near-record high prices of hay now prevailing in some States will also cause farmers to keep their cows in pastures, stalk field, and winter-grain fields as late in the fall and as early in the spring as possible.

The extent to which the general shortage of grain and hay affects the rations of milk cows will depend in part on governmental action in distributing feed, on the relative financial ability of farmers in the various regions to make purchases, and on the relative returns from dairy products as compared with returns from other animal products and from meat animals. The shortage

grain, in addition to the Agricultural Adjustment Administration's hog-control program, has already caused a much larger reduction in the number of hogs on farms than would have resulted from the latter program alone, and has resulted in the marketing of many hogs at light weights. Undoubtedly the quantity of grain used for fattening beef cattle and sheep for market will be greatly reduced, perhaps to less than half the usual tonnage, but even with such a reduction and an equal reduction in the feed of hogs there would remain far less than the usual supply for milk cows, work stock, and poultry. Judging from present prices, from the location of the feed and of the livestock, from the usual response of farmers to feed shortages, and from the quantity of grain being fed to milk cows on October 1, it seems probable that the quantity of grain and concentrates per head fed to milk cows this winter will be from 20 to 30 percent less than usual but only 10 to 15 percent less than was fed last winter.

DISTRIBUTION OF FEED SUPPLIES

The regional distribution of the feed supplies will have an important effect on the output of dairy products during the next 6 months. The drought has caused marked departures from the usual price differences between States. In the Northeast the cost of feed being fed to milk cows on October 1 averaged about \$36 per ton. This was \$5 per ton higher than on that date last year, an increase of 16 percent. In South Dakota most of the farmers were feeding no grain to their milk cows on October 1, but some that were feeding valued the grain being fed at \$33 per ton, as compared with \$16.70 reported last year. This is an increase of almost 100 percent. Hay prices are equally abnormal, being higher in some of the drought States than they are in some States along the Atlantic coast. As there has not been a proportionate change in the prices of dairy products, the situation is extremely unfavorable for heavy feeding of milk cows in the drought States and, so far, only moderately unfavorable in States usually dependent on purchased feed supplies.

The greatest shortage of feed is in the Great Plains range area extending from eastern Montana and central North Dakota to Texas and New Mexico. In this area, which is relatively unimportant in dairy production, herds have already been materially reduced, and most farmers appear to be more concerned about keeping their cows alive until new grass comes next spring than they are about maintaining milk production. In this area relief funds will help to maintain the production of family cows, but commercial butterfat production is likely to be exceedingly low during the winter-feeding period.

At the western end of the Corn Belt there is a more important butterfat-producing area where winter production will also be very low. This area includes the eastern portion of the Dakotas, Nebraska, Kansas, Oklahoma, the west central part of Minnesota, southern Iowa, most of Missouri, and western Arkansas. In this area most of the corn failed to mature grain and, with small-grain production abnormally low, there is a shortage of grain on most farms except on those carrying over a large quantity from preceding years. Hay production was also greatly reduced but a large tonnage of corn fodder has been cut. In most of this area grain is worth about twice as much per bushel and hay is bringing two to three times as much per ton as at this time last year, while the price of butterfat is only about one-fifth higher than a year ago. Under these conditions the quantity of grain and hay fed to milk cows this winter is likely to be less than in any recent year. In most of the mountain area feed supplies are seriously short for the livestock on hand and the rations of milk cows will be reduced this winter in order to carry work stock and breeding stock through the winter.

In the eastern and central portions of the Corn Belt, hay and grain supplies are insufficient to provide normal rations for the livestock on hand and at the same time supply the quantities needed for industrial purposes and some for shipment to the drought area. To take advantage of the favorable prices offered for grain some farmers in these States will dispose of part of their livestock and reduce the feed of the rest. Hay supplies are also short but in most sections there is sufficient silage, corn fodder, stover, and straw to permit the usual tonnage of roughage to be fed. Taking the region as a whole, milk cows will probably receive even less grain per head than the very low ration supplied last year and there will be more than the usual substitution of coarse forage for hay. As a result there may be a rather general reduction in commercial butterfat sales and moderate reductions in milk deliveries.

Hay supplies in the Northeast and on the Pacific coast, while short in certain localities, are sufficient for ordinary needs if economically fed. As more than three-fourths of the concentrates fed to milk cows in these areas are usually purchased, the shortage of supplies will be keenly felt. In recent months milk prices have been high enough to permit fully the usual rate of feeding in these areas, but during the next 6 months more difficulty may be encountered in obtaining feed supplies owing to the limited supply for sale, the demand from the range area for the limited supply of cottonseed cake and meal, and the increased consumption in the drought area of the locally produced mill feeds. Although increased imports of grain or feed from South America and the Far East may somewhat relieve the shortage of supplies in coastal States some reduction from the usual rate of feeding seems probable. In the South, east of the Mississippi River, feed supplies are for the most part up to or above the usual average, but milk production may be decreased somewhat by the high price of cottonseed and of cottonseed meal.

MANUFACTURED DAIRY PRODUCTS

The combined domestic production of the principal manufactured dairy products, on a milk-equivalent basis, for the period January 1 to October 1, 1934, is estimated to have been about 5 percent less than during the corresponding period of 1933. The production of creamery butter decreased about 6.5 percent, and evaporated milk about 4 percent. Cheese, however, showed an increase of around 1.8 percent, and condensed milk 9 percent during this same period. From May to August, inclusive, creamery butter production decreased 6 percent, and evaporated milk less than 1 percent, as compared with the corresponding period of 1933; but cheese and condensed milk increased 3 and 13 percent, respectively. In the early part of the year, short feed supplies as a result of the 1933 drought, and an unfavorable price situation, operated to decrease production. The usual seasonal improvement in the output of manufactured dairy products occurred at the beginning of the pasture season, but production was again checked during the early summer months by this year's drought.

Scattered rains in late July and August resulted in some improvement in pastures and in growing conditions for feed crops generally, and although butter production during July and August continued below that of the corresponding months of 1933, the decrease was only 2.5 percent, as compared with decreases of approximately 9 percent in May and June. Estimated butter production in September exceeded that of September 1933, by 1.3 percent, but in States where rains had come too late to be of much aid, and where the feed situation continued critical, there were very heavy decreases in both August and September. The States thus affected were Texas, Oklahoma, Kansas, Nebraska, Missouri, Montana, and North Dakota. Iowa, Minnesota, Wisconsin, Indiana, and Illinois all showed substantial increases during August and September, as well as in July. The production of manufactured dairy products in the East suffered much less from the drought this year than in the Middle West. Production of butter in the New England States showed a slight decrease for the first 9 months, but in the Middle Atlantic States, which include several fluid-milk sheds where at times there has been a considerable surplus of market milk, it was about 22 percent greater, but this increase amounted to only 4,000,000 pounds.

The production of manufactured dairy products for the remainder of the year will probably follow an irregular trend. In those sections where good fall pastures are available, production will probably be maintained until full barn feeding is begun. But in the greater part of the Great Plains States where pastures made but little improvement following the drought, and where feed supplies of all kinds are limited, no recovery in production except possibly some seasonal increase is expected prior to the pasture season of next year, and a reduction in production below the level of last year appears probable during the coming winter. The extent of the reduction will depend upon the utilization of available feed supplies among the various classes of livestock.

COLD-STORAGE HOLDINGS

Total United States stocks of butter in cold storage on October 1 reached 124,814,000 pounds, compared with 174,713,000 pounds on October 1, 1933, and a 5-year average for October 1 (1929-33) of 126,877,000 pounds. The peak

holdings is usually reached on September 1, but this year the into-storage movement continued until the early part of October. October 1 stocks were 50,000,000 pounds below the record stocks of a year ago, but were approximately the same as the 5-year average for October 1. During previous months of the current season since June 1 this year's stocks were not only less than a year earlier but were considerably below average. The movement of butter into cold-storage warehouses this season was relatively light, the net increase from May 1 to peak holdings being 112,976,000 pounds, compared with an increase of 166,073,000 pounds in 1933 and a 5-year average increase of 126,726,000 pounds. An increase in storage stocks of butter during September, which is unusual, was due this year to a lighter movement into apparent consumption, together with the fact that production of butter was relatively heavier in August and September than in 1933 in some sections, particularly in parts of the central Western States.

Storage stocks of all classes of cheese are very large. American cheese alone in cold storage on October 1, 1934, totaled 108,646,000 pounds, compared with 99,326,000 pounds on October 1, 1933, and a 5-year average as of October 1 of 83,754,000 pounds. Stocks of evaporated milk in manufacturers' hands on September 1 amounted to 175,129,000 pounds, and condensed milk 24,814,000 pounds. These were both below the stocks of a year earlier. In terms of milk equivalents, October 1 stocks of butter, cheese, and condensed and evaporated milk were 18 percent less than on October 1, 1933.

FOREIGN COMPETITION

In comparison with domestic prices of butter, foreign prices continue abnormally low. The diverging tendencies toward heavier world supplies and curtailment of domestic production indicate a still further widening of price margins as between London and New York and indicate some importation of butter into this country before the next pasture season. Usually, during the middle of the year, our tariff on butter has little, if any, effect upon trade since domestic prices are so nearly equivalent to those prevailing in the world market, while during our winter seasons it is not uncommon for price margins to develop practically equal to the 14-cent tariff over short periods. In early July of this year the New York price of 92-score butter reached 11 cents above the Copenhagen export price of 13 cents. Since that time there has been the usual seasonal advance in European markets preceding the heavy fall and winter arrivals from sources in the Southern Hemisphere. Recent quotations would indicate, however, that seasonal decline has already begun. On October 11 the Copenhagen butter quotation was 8 cents below New York wholesale prices, and New Zealand butter in London was quoted 12 cents below.

In the summer months of last year these margins were practically the same as prevailed this year but with the important difference that for many months thereafter United States currency was further depreciating in relation to the British pound sterling. London butter prices, accordingly, when converted from shillings to cents, were increasing because of the decrease in the foreign-exchange value of the dollar. Since Danish currency has been held at a constant exchange ratio with English currency, the effect of depreciation in the United States upon Copenhagen prices was identical with that referred to as applying to London prices. Thus, London prices which are normally comparatively low during the winter months actually advanced last year in cents per pound, thus tending to narrow the margin under New York. In April 1933 quotations on finest salted New Zealand butter averaging 75 shillings 6 pence per hundredweight (of 112 pounds) were equivalent to 12.1 cents per pound at prevailing exchange, whereas in December 1933 an average of 78 shillings resulted in a converted price of 17.8 cents. In addition, domestic prices failed to make the usual seasonal advance, and price margins in favor of New York over London were much narrower during the winter months than they had been in the summer.

Although foreign and domestic price relationships were about the same last summer as a year earlier, the situation has been notably different as affecting the prospect for the fall and winter months. Aside from the improbability of a repetition of the abnormal exchange relations, indications are that domestic supplies of both fresh and storage butter will be light, with seasonal price advance at least normal, and that British supplies will be increasingly heavy, with prices next winter at least as low as they were in July.

The margin over the London price of best Danish butter necessary to divert Danish butter from British markets to this country is not the full amount of

our 14-cent tariff but a margin less than that by about 3½ cents, which is the equivalent of the British tariff on "foreign" or non-Empire butter, as set up in accordance with the Ottawa agreement in 1932 establishing trade preferences for British dominions.

European market prices of butter have been depressed to the low levels now prevailing, in part only by increase in total world supply. To a far greater extent this is the effect of wide-spread national trade restrictions which have concentrated world supplies upon the relatively free British market. Total exports of butter accounted for by 13 of the most important surplus-producing countries amounted in 1933 to 1,180,278,000 pounds, an increase of only 17,000,000 pounds over 1932—actually less than the total in 1931 by 30,000,000 pounds, and 208,000,000 pounds, or 21 percent, greater than the 1925-29 yearly average. Of all the butter moving in international trade in 1925-29, 65 percent was exported to the United Kingdom, whereas in 1933, 84 percent was finally absorbed by British markets. The difference of 333,000,000 pounds between the imports retained for consumption in the United Kingdom in 1925-29 and 1933 represented an increase of 41 percent. The United Kingdom with its population approximating 46,000,000 has increased from year to year the quantities of butter imported and retained for consumption as follows: 120,000,000 pounds over the previous year in 1931; 47,000,000 pounds in 1932; 68,000,000 pounds in 1933; and 111,000,000 pounds in the first 8 months of 1934 over the corresponding period of 1933. Butter consumption, per capita, has increased in Great Britain during the last 10 years fully 50 percent, from about 15 pounds to 23.5 pounds in 1933, in contrast to a practically stationary consumption per capita in the United States, over the same period, of approximately 18 pounds.

Butter prices have been low in Great Britain relative to prices of margarine, and consumption of margarine has fallen off, according to best available estimates, from 14 pounds per capita in 1929 to 9 pounds in 1933, with indications of still further decline in current consumption. In the United States, where margarine consumption was less than 3 pounds per capita in 1929, the diversion of demand from margarine to butter was possible only on a much smaller scale, with consumption having declined by 1932 to about half that of 1929.

Further increase in the British butter supply must result in a more-than-proportionate decrease in British butter prices, according to studies made by British economists.

The increase in British supply has been contributed to chiefly by New Zealand and Australia, where a record production year has recently ended and a new season opened with production in the early months outrunning that of the corresponding period of last year. Both of those countries, with free entry into British butter markets, have practically doubled their exports of butter within the last 5 years. The relative increase in supply of these Empire butters in British markets is responsible, in part at least, for the relatively low prices now prevailing for these butters. Markets alternative to Great Britain are to be sought by marketing authorities in both of these countries even before the expiration of the Ottawa agreement in November 1935. At the end of that period restriction of supplies by the British Government is anticipated.

In Canada creamery-butter production during the first 7 months of 1934 showed an increase of 6 percent over the like period of last year, having amounted, according to official estimates, to 135,341,000 and 127,554,000 pounds, respectively. Storage holdings of creamery butter in all Canada amounted on September 1, 1934, to 50,433,000 pounds against 42,020,000 pounds a year earlier. Montreal butter prices continue well below New York prices, and only slightly above the level of Copenhagen quotations. Canada is now on a net export basis in the butter trade and, with production and stocks at recent levels and a tariff on butter equal to ours, does not appear to afford any immediate outlet for world supplies.

World trade in cheese has declined steadily in recent years, and there has been no such concentration of world supplies as in the butter trade upon British markets. Between 1925-29 and 1933 imports of all cheese in the United Kingdom increased from 331,101,000 pounds to 338,069,000 pounds, or 2 percent only, while imports during the first 8 months of this year, amounting to 227,888,000 pounds, are slightly less than in the corresponding period of last year.

Lessened importation into the United States and Germany has accounted chiefly for the decline in exports of the European types of cheese, such as Dutch, Swiss, and Italian, while trade in the American or Cheddar-type cheese from New Zealand and Canada has been well maintained, principally with Great

Britain. The decline in Canadian exports has been balanced by an increase in exports from New Zealand.

Our importation of butter in the year ended June 30, 1934, as in the previous year, was less than 1,000,000 pounds, and was again slightly exceeded by exports. Imports of Swiss-type cheese fell further, from 12,304,000 pounds to 7,918,000 pounds, and other cheese from 43,619,000 pounds to 37,684,000 pounds. Exportation of concentrated milk was slightly less than last year, but the decline was the least marked of any recent year. The movement of foreign exchange favored exportation, and despite sustained import restrictions in Great Britain, the falling off in our total concentrated-milk exports was checked and exports of dried skim milk and milk-powder preparations were slightly increased.

The Agricultural Adjustment Act authorizes the Secretary of Agriculture to issue licenses to processors, associations of producers, and others engaged in handling a product in interstate and foreign commerce in order to protect a marketing agreement or license. In the absence of such an agreement there is no authority under the Agricultural Adjustment Act to control importation.

Should the domestic producers of butter at a later date enter into marketing agreements, a new situation will have come into existence which will have to be analyzed in the light of the provisions of the marketing agreement and the facts existing at the time.

PRICES

Farm prices of dairy products rose 44 percent from their low in March 1933 to September 1934. During this period the farm price of butterfat rose 71 percent, the price of milk sold at wholesale by farmers 39 percent, and the price of milk retailed by farmers 26 percent. Those products that declined most in price from 1929 to 1932 have increased most during the last 18 months. This unequal rise in prices has restored a more normal relationship between the prices of the various dairy products. Even with this marked rise, farm prices of dairy products in September 1934 were about the same as in the pre-war period 1910 to 1914, but only about two-thirds as high as in the 5-year period, 1925-29.

In contrast with the 44 percent rise in farm prices, retail prices of dairy products rose only 23 percent. The greater rise in farm prices than in retail prices has corrected, in part, the disparity between these two groups of prices. From March 1933 to August 1934 the retail price of butter rose 42 percent, cheese 19 percent, and milk 14 percent. The retail prices of those dairy products that declined most in the deflation period have increased most in the last 18 months. This has corrected to a considerable extent the maladjustments in the price structure.

During the period of generally rising prices, March 1933 to September 1934, the general level of farm prices rose 82 percent, farm prices of grains rose more than 200 percent, cotton and cottonseed more than 100 percent, meat animals 50 percent, and dairy products 44 percent.

During the storage season, May to September 1934, farm prices of dairy products averaged about 13 percent above prices during the corresponding period in 1933. Farm prices of butterfat also rose 13 percent. Between May and September 1934 farm prices of dairy products increased about 9 percent and farm prices of butterfat about 11 percent.

In the deflation period prices of dairy products did not decline so rapidly as did the prices of many other farm products. In 1932 the farm price of butterfat in relation to feed grains was the highest in more than 30 years. With the rise in the general level of prices because of monetary policy and the drought, grain prices have increased much more than prices of dairy products. For the 12 months ended with September 1934 the farm price of butterfat in relation to feed grains averaged the lowest in about 14 years, and averaged only about 70 percent as high as in the period 1925 to 1929. This relationship between the price of butterfat and feed grains is probably not high enough to maintain production at its present level. The farm price of milk cows is the lowest in relation to the general level of farm prices in more than 25 years.

The low prices of dairy products in relation to feed prices will probably continue until the next pasture season. With more normal crops in 1935, however, dairy-product prices will bear a relation to feed prices much more favorable than that now existing. Although prices of milk cows will probably be relatively low during the coming winter, the longer-time outlook is for an increase in prices of milk cows.

OUTLOOK

A review of the various factors already presented may best be made in terms of their varying effects on the dairy industry in different periods in the future.

The most pronounced effect of the drought will be felt during the coming winter-feeding period of about 6 months. The extreme shortage of feed grain and other concentrates and the only slightly less severe shortage of good roughage will raise the cost of production of milk, will probably lower the net returns from the use of high-priced feeds for dairy production, will considerably reduce the volume of dairy production, and will tend to raise the prices of dairy products. However, the prospective rise in dairy-products prices is likely to be less than would be experienced if consumer purchasing power were to be up to normal. In the case of butter, the price rise will be checked also by potential or actual importation, in view of the discrepancy between supply and price conditions in the foreign and domestic markets.

The shortage of feed and resulting decline in dairy production are likely to become progressively greater as the winter-feeding period advances. In the fluid-milk areas of the Northeast, where there are larger supplies of roughage in proportion to local needs, and where adjustments upward in the price of fluid milk are being made, less reduction is likely to result. It is expected that the supplies of fluid milk will be adequate to meet the demand of consumers. On the other hand, in the manufactured dairy-products areas there is likely to be a very substantial reduction in the milk flow below that of corresponding months a year ago, and this reduction is likely to become progressively greater as the winter advances and feed supplies dwindle. This reduction is likely to be substantial in the most important creamery-butter-producing States, such as Minnesota and Wisconsin, and to be extreme in the centralizer territory of the Great Plains.

The effect of the drought on dairy production beyond the coming feeding period is not so clear. The drought has undoubtedly killed the grass, clover, and alfalfa seedlings of last spring over wide areas in the Middle West, so that the quantity of feed to be obtained from the usual hay crops and from rotation pasture is likely to be considerably below normal. On the other hand, farmers will undoubtedly pay special attention to temporary hay crops and emergency pastures and to the planting of grains that will yield early available supplies of feeds, so that, with a normal rainfall, the effect of the current year's drought will not extend in an extreme degree beyond the winter feeding period.

On the whole, dairy farmers will be relieved from the most distressing effects of the drought with the coming of the pasture season next spring, and the outlook is for a volume of milk production during the usual flush season somewhat below that of recent years. Grain feeds and other concentrates as pasture supplements will be extremely scarce, and it is improbable that pastures in the areas most severely affected by the drought can recover their full normal carrying capacity during the next growing season.

The outlook for the dairy industry beyond the summer of 1935 is affected primarily by the reduction in cattle this season. The drought evidently had the effect of shortening the upward trend in the number of cattle by about a year and introducing the downward phase of the cycle with an initial sharp reduction. Since the reduction in cows, including beef and dual-purpose cows, has been proportionally greater than in all cattle, the movement has probably greatly retarded developments in the direction of an accelerated increase in dairy production which was anticipated as a result of the reduction in acreage of crops, such as corn, wheat, and cotton, and the expected increase in hay and pasture.

The reduction in number of milk cows has probably meant a culling out of low producers and there may result a tendency to higher production per cow when feed supply again becomes normal. The effects of this reduction should be of advantage to dairy farmers. Feed-grain supply will probably be more nearly normal with the harvesting of next year's crops, and this will reduce the cost of dairy production. The reduced number of milk cows will tend to counteract the effect of any increase in production per cow during the next 2 or 3 years and thus prevent an overexpansion in supply. If there is improvement in general economic activity, it will strengthen the demand for dairy products.

POULTRY AND EGGS

The outlook for poultrymen during the coming winter and spring is rather favorable to those in a position to retain and feed their layers. The hi

price and scarcity of grain is forcing a drastic reduction in numbers of live-stock, including poultry, especially in the badly damaged drought areas. Supplies of both eggs and poultry will be relatively short until next summer, when the chickens of next year's hatching begin to affect supplies, and prices of poultry products may be expected to continue at seasonably high levels until that time. The total number of hens and all pullets on October 1 this year was about 7 percent below the number on that date in 1933 and about 11 percent below the number in 1930, which was close to the high record. Farmers have been keeping as many of their hens and pullets as possible, but there has been a heavy early marketing of the young males. A further reduction in the laying flocks below numbers last year seems probable, the extent depending upon relative prices of feed and of poultry products this fall and winter.

Egg production has been and will probably continue to be materially less than last year and considerably below the 5-year average, with further relative decreases this winter and next spring somewhat in line with expected further reduction in relative numbers of laying stock. Total storage stocks of eggs, both shell and frozen, on October 1 were about 5 percent less than last year. Stocks of shell eggs showed a still greater decrease. With a short supply of fresh eggs in prospect and with prices of other foods increasing, a good market for eggs seems assured during this winter and early spring. The October 15 farm price of eggs, 23.7 cents per dozen, compared with 20.8 cents on that date in 1933, being 1 percent below pre-war levels, but still 35 percent below the favorable levels of the post-war years 1927-31.

The tendency shown by egg prices during the spring and summer of 1934 to rise faster than the usual seasonal advance is expected to continue to about December, and the winter and spring prices will probably not decline to as low a level as in 1934.

The supply of poultry will be short this year, owing to a decrease of 10 percent in the number of chickens raised and to a smaller crop of turkeys. Heavy marketings of young chickens have taken place during the summer and early fall, but the supply remaining for later marketings will be much smaller than last year and smaller than usual unless farm consumption is curtailed or flocks are further materially reduced in the drought areas. Owing to the heavy early marketings, the cold-storage stocks of poultry on October 1 were about 10 percent heavier than in 1933 and 12 percent above the October 5-year average. However, with fewer young birds yet to go to market, it is expected that storage stocks on January 1, at the normal peak of the storage season, will be considerably below the average.

The United States average farm price for chickens on October 15 was 11.8 cents, compared with 9.3 cents in October 1933, being 1 percent above pre-war and 40 percent below post-war levels. Prices of chickens usually change but little from March to October, but they advanced 10 percent during the spring and summer of 1934. With the smaller supplies of poultry and with prices of competing types of meat increasing, poultry prices are expected to advance further during the fall and winter and to remain at higher levels during the first half of 1935 than in that period of 1934.

NUMBER OF CHICKENS

The number of mature hens in farm flocks on October 1, 1934, was 3 percent less than on that date in 1933. The number of pullets of the 1934 hatch of laying age on October 1 was 8 percent less than in 1933, and the number of pullets not of laying age was 11 percent less. The large reduction in the number of pullets was due to a decrease in hatching this year, and to the feed shortage. Although the Atlantic Coast States, both north and south, on October 1 showed relatively more young chickens compared with the same date last year, than in July, the drought-stricken Central and Western States showed relatively fewer young birds, compared with last year, than in July. The West North Central States showed a decrease in the number of pullets on October 1 of 17 percent below October numbers in 1933; the South Central States a decrease of 12 percent; and the North Atlantic, East North Central, and far western divisions each showed a 7 percent decrease. The South Atlantic States alone showed an increase in pullets, of 3 percent. Combining hens and pullets of all ages, the resulting number of potential layers on hand in the United States on October 1 was 7 percent less than last year, and 11 percent less than the near-record numbers of 1930. The decrease below last year in the

number of potential layers on October 1 was 10 percent in the West North Central States, 12 percent in the South Central, 9 percent in the far western, 6 percent in the East North Central, and 1 percent in the North Atlantic States. There was an increase of 2 percent in the South Atlantic States.

It appears that the heavy marketings of chickens thus far this year, although affecting pullet numbers materially, have been more particularly from the class of "other" chickens, the numbers of which were reported at 22 percent less than last year. The decrease in this class, consisting mainly of young cockerels, amounts to about 30 percent in the West North Central States, where drought was most severe, and up to almost 50 percent in some of the worst affected States. It appears that farmers, particularly in the drought areas, have been marketing surplus males from the young flocks early in the season this year in order to conserve feed, and that whenever possible they are keeping their hens and pullets. Many farmers in the drought area, especially those who ordinarily produce few winter eggs, will endeavor to bring their reduced numbers of layers through the winter on a near-maintenance ration, hoping for good egg prices during the heavy-laying period next spring. During the late fall and early winter, however, after the supply of grass and insects has failed, so that farm chickens can no longer obtain substantial quantities of feed from the field, a further unusual depletion of laying stock will probably occur in the drought areas. This further decrease will be balanced in part by a tendency to keep as many layers as possible in sections where the farmers have sufficient supplies of feed.

Producers who are favorably located with reference to markets and who have available feed, especially those in the Atlantic Coast States and in part of the East North Central States, have maintained the number of layers at about last year's level. Producers in the Pacific Coast States who supply a high grade of market eggs and have feed this year, have thus far made only moderate reductions. Considering the severity of the drought situation, however, and the importance of the drought area in production of poultry products, it appears probable that the total reduction in laying stock by midwinter may be close to 10 percent below the numbers last winter and about 15 percent below average numbers at that season in the years 1927 to 1931, inclusive.

The reduction in numbers of chickens will probably be less than in that of meat animals generally, because numbers of chickens have been stationary or declining since 1930, with a resulting upward price adjustment now in progress, while numbers of cattle have increased greatly and hogs and sheep have increased slightly, with resulting price levels for meats less favorable than those for poultry products when considered in relation to the price of feed.

Although the reported figures on numbers of poultry are for farm flocks, and do not include commercial flocks, it appears probable that the high feed prices of the past year or more, with the smaller increase in prices of eggs, compared with average post-war relations, have had an effect upon numbers of layers in commercial flocks similar to their effects upon farm flocks in the same areas.

COMMERCIAL HATCHINGS IN 1934

The commercial production of baby chicks during the first 7 months of 1934 was apparently about 11 percent smaller than the production of the similar period of 1933 and 3 percent smaller than in 1932. Production was much less than last year in the Central States, ranging from about 10 percent less in the South Central States and 11 percent in the West North Central up to 18 percent less in the East North Central States. Production was also substantially smaller in the important egg-producing areas of the far West, the Pacific Coast States showing a decrease of 11 percent and the Mountain States 13 percent. In the Eastern States, however, there was an increase, the reported production of New England being 30 percent greater than in the previous year. This was the only section that showed an increase, and, owing to the absorption by large hatcheries of many of those of small capacity, the figure may exaggerate somewhat the actual increase. Chick production in the Middle Atlantic States showed a decrease of 16 percent and in the South Atlantic 12 percent decrease.

POULTRY SUPPLIES

With a 10-percent reduction in the numbers of young chickens produced in 1934 below numbers in 1933, which was an average year, with heavy early mar-

ketings of both hens and young stock, and with October 1 numbers of hens 3 percent less, pullets 10 percent less, and other chickens 22 percent less than last year, a considerable decrease in the number of chickens sent to market during the fall and winter of 1934 is to be expected, even allowing for further marketings of laying stock in the drought States. The average weight of the chickens to be marketed may be even less than the light weights of those marketed last season unless the relation of the farm price of chickens to the price of feed improves. The October 15 relation of chicken prices to feed prices was 89 percent as much as in the pre-war 1910-14 period, but only 70 percent as high as in the post-war 1923-27 period. Many farmers in the drought area, which normally supplies a large proportion of the chickens for the commercial markets, have neither the feed nor the means for obtaining it to bring their poultry to proper marketable weights; therefore considerable poultry that is lighter in weight than usual will be sold to consumers.

RECEIPTS OF POULTRY

Receipts of dressed poultry at the four principal markets for the period of January through September 1934 were 8.4 percent smaller than for the same period last year. Receipts from the West North Central States were about 1 percent heavier, but from all other areas they were substantially less, except those from the Pacific coast, which comprise only a very small fraction of total receipts. The only months to show receipts heavier this year than last year were January and July. In January receipts were only fractionally larger than those of January of the preceding year, but in July they were about 2 percent higher. The increase in July was due to the heavy marketings of poultry by farmers in the Middle West during June and July, where the drought damaged the feed crops and summer ranges to such an extent that farmers were forced to reduce their stocks of poultry. Although marketings of poultry in that area continued heavy through August and September, the weak demand from terminal markets caused most of it to be stored at interior storage points.

Receipts of live poultry at New York and Chicago, the only two points for which such information is available, for the first 9 months of this year were about the same as those of a year earlier. The 11-percent decline in baby chicks hatched this year resulted in a smaller number of young chickens available for marketing, but the lack of feed and the unseasonable growing conditions as the result of the drought this summer caused the marketing of a larger proportion of this year's chicken crop as broilers and fryers. Until recently the receipts of live roasting chickens of 3½ pounds weight and over have been exceptionally small, but with the beginning of October such chickens began to come to market in large numbers. In view of the sharp selling of young stock this summer it appears that the number of young chickens on farms to be sold as roasters later in the year is considerably smaller than a year ago.

STORAGE STOCKS OF DRESSED POULTRY

Stocks of poultry in storage on July 1 this year amounted to 40,609,000 pounds compared with 42,705,000 pounds on July 1 last year, and 41,235,000 pounds for the 5-year average. In contrast to the usual seasonal trend stocks in storage increased during July, and in August and September they showed a much larger-than-normal seasonal gain. Stocks of poultry on October 1 amounted to 55,271,000 pounds, compared with 50,177,000 pounds on October 1, 1933, and 49,359,000 pounds for the 5-year average. These large stocks, in comparison with both last year and the 5-year average, are due to the heavy marketings of poultry during recent months. In view of the sharp increase in storage stocks that has already taken place, it seems probable that the later into-storage movement will go forward at a much less rapid rate. It also seems probable that at the peak of this year's storage season the total quantity of poultry in storage will be smaller than at the peak of last season.

APPARENT TRADE OUTPUT OF POULTRY

The apparent trade output of dressed poultry for the four markets (Boston, New York, Philadelphia, and Chicago) during the first 9 months of 1934 was about 5 percent smaller than during the corresponding months of 1933. Although the volume apparently consumed at these markets was somewhat smaller than a year earlier, prices for the most part have been several cents

higher than last year. Receipts were about 9.4 percent less but trade output declined only about 5 percent as heavy withdrawals were made on the large stocks of poultry in storage carried over from 1933. No figures are available on the trade output of live poultry, but based upon receipts at Chicago and New York it was about the same as that of the preceding year.

POULTRY FEED SITUATION

The production of feed grains in 1934 was only 53 percent of the 5-year average. In some of the worst drought-damaged States the production ranged from 30 percent down to as low as 7 percent. Most of the States east of the Mississippi River, those on the Pacific coast, and most of the Rocky Mountain States had from a fair to average production of feed grain, but in the great grain-producing region of the West North Central States production was only 28 percent of the average. It has been estimated that the grain-consuming animal units of the country will have been reduced by November 1 to 81 percent of the number on that date in 1933. Even with this decline in livestock numbers it is evident that supplies of feed will continue very short and prices will continue high until next summer.

The October 15 price index of feed for poultry stood at 86 this year compared with 51 in 1933 and with 31 in 1932, on the basis of prices in the post-war years 1927-31. On the basis of October pre-war prices this year's October feed-price index number stood at 114, against 67 last year.

The October 15 price of some of the soft western wheats was less than that of corn. An unusual proportion of wheat will probably be used in the poultry ration this year, particularly in the Western and Central States. A larger than usual proportion of mill feeds, concentrates, and commercial scratch feeds may also enter into the average farm ration.

The effect of the feed situation on egg production in different parts of the country is discussed in the following section.

EGG PRODUCTION

The production of eggs per hen during the first 10 months of 1934 was the smallest for those months since 1925. Although the number of eggs laid per hen on October 1, 1934, was slightly greater than the record low October 1 figure of 1933, it is reasonable to expect, in view of the importance of egg production in the area affected by severe drought and feed shortage that it will be lower during the coming fall and winter months than last season, when production per hen was about average. A factor tending to maintain the fall and winter production of eggs per hen close to normal is that a larger proportion of the laying birds are in the sections where commercial production of eggs is important and where consequently fall and winter production of eggs per hen is greatest. Producers undoubtedly will try to maintain in good productive condition that branch of the farm industry that is capable of bringing in a constant cash return, and the short supply of fresh eggs may raise prices to the point at which fairly liberal feeding may appear to be justified even though feed prices remain high. Even allowing for these factors tending to support a full seasonal rate of laying, the total reduction in production of eggs this fall and winter seems likely to be at least as great as, and probably greater than, the decrease in numbers of layers, and it appears probable that it will fall below that of last season by 10 percent or more and below the 5-year average by at least 15 percent.

Weather, as always, will be an important factor in determining the rate of winter production of eggs per hen and will operate to limit or increase the prospective decline in production.

If the usual proportion of layers is disposed of during the winter, the number left in the spring of 1935 will probably be at least 10 percent less than in 1934.

Chickens carried through the winter in the drought area in the West Central States are likely to be in poorer condition than usual, and therefore will be less prepared to lay a normal number of eggs during the late winter and early spring months. Because of the importance of these States in the production of the commercial supply of eggs for spring consumption and for storage, the total supply of marketable eggs next spring appears likely to be at least 10 percent less than that of last year, even considering the low rate of production per hen last spring.

The feed situation in the West North Central States, where drought conditions were most severe and where production of feed this year was only 28 percent of the average, is acute, and will so continue through the winter, even with the expected reduction of livestock units to 74 percent of the number in 1933. The total lack of grain on many farms located in this heart of the grain-producing area, is forcing reductions in numbers of layers, and this movement is likely to continue until egg prices show a more distinctly favorable relation to the price of feed than in October. Many farms that have supplies of wheat and other small grains, even though they may have no corn, will be inclined to keep as many layers as possible, depending on a scanty ration containing little if any corn, to carry them through the winter. Although some increase in the wheat component in the usual farm poultry ration might improve it, the average ration fed this winter in the drought area is not likely to be so well balanced or so abundant as usual. Most of the production of eggs in this area is from farm flocks, large commercial flocks being relatively few in number. Conditions in the South Central States of Texas, Oklahoma, and Arkansas, and in the Mountain States of Colorado, New Mexico, Utah, and Wyoming, are similar to those in the West North Central States.

In the East North Central States production of feed grain is about 63 percent of the 5-year average. The worst conditions extend from western Illinois into southern Michigan. In this area, farm flocks produce most of the eggs but commercial flocks fed on purchased feed are fairly numerous. Nearby and eastern markets this year will afford a ready outlet for all fresh eggs produced. The number of layers is being held at near last year's level. Flocks will probably be culled closely but the hens will be fed nearly normal rations to maintain production.

In the Pacific Coast States and in most of the Rocky Mountain area, except Colorado and adjoining States, production of feed grains ranged this year from 69 percent nearly up to the average. The large group of commercial producers in this area may be expected to feed close to a normal ration to a slightly reduced number of layers.

In the North Atlantic States feed production is above the average. The number of layers has not decreased appreciably and farm as well as commercial flocks will doubtless receive nearly their usual supply of feed. Commercial flocks are numerous in this area and most of them are maintained on purchased feed. Owing to the light production of grain in the Middle West and the good crops in the East this year, the increase in feed prices has been relatively much less in the East than in the Middle West. With a probable substantial decrease in receipts of eggs from the Middle West and some decline in the supply from the far West, local producers in the North Atlantic States should have an unusually favorable market for a full production of eggs even though consumption there should be somewhat curtailed by increased prices.

In the Southern States east of the Mississippi River, which normally import more eggs than they export, and in which feed supplies are better than the average, those who produce eggs for market will probably feed a nearly normal ration to about the usual number of layers. Although many small farm flocks will probably be reduced below usual numbers before the winter is over, from inability of owners to purchase high-priced feed in the usual quantity, the probable shortage of production by these small farm flocks will operate mainly to reduce the supply of eggs used on the farm.

RECEIPTS OF EGGS

Receipts of shell eggs at the four leading markets of New York, Chicago, Boston, and Philadelphia for the first 9 months of 1934 amounted to 11,154,000 cases, compared with 12,307,000 cases for the same months last year, a decrease of 9.3 percent. Receipts were much smaller from all sections, with the exception of the Middle Atlantic and Mountain States, which showed increases of 15.2 percent and 11 percent, respectively, and for the Pacific Coast States, which were practically unchanged. The decrease in receipts this year, compared with a year earlier, was largely the result of conditions in the Central States. Normally the East North Central and West North Central States combined supply around 80 percent of the receipts of the four large markets. This year receipts from those States were 9.4 percent smaller than for the corresponding period last year. Early last spring egg-breaking plants operating throughout that area, which were breaking on contracts at specified prices, paid

a premium over prices offered by local buyers, and a part of the supplies usually going to the terminal markets were broken out and frozen. The prospect of a generally higher price level in the fall also caused a rather extensive storage of eggs at interior points. Subsequently the late spring and early summer drought seriously checked egg production throughout most of the Middle Western States, and the supply of eggs available for shipment to the terminal markets continued less than that of a year earlier and less than usual.

STORAGE STOCKS OF EGGS

Combined storage stocks of shell and frozen eggs on a shell-egg equivalent basis amounted to 9,657,000 cases on October 1 this year, compared with 10,128,000 cases on October 1 last year, and 10,017,000 cases for the 5-year average for that date. Peak stocks for this year on August 1 amounted to 12,434,000 cases, compared with 12,583,000 cases on August 1 last year, and 12,144,000 cases for the 5-year average. Reduction in the combined stocks since August 1 amounted to 2,777,000 cases up to October 1, compared with a reduction of 2,455,000 cases during the same period last year. Stocks of shell eggs in storage on October 1 amounted to 6,803,000 cases, compared with 7,466,000 cases on the same date last year, and 7,338,000 cases for the 5-year average. Stocks of frozen eggs, which on August 1 amounted to 121,564,000 pounds, the largest quantity of that product ever reported in storage at any time since records became available, on October 1 amounted to 99,881,000 pounds, compared with 93,182,000 pounds on the same date last year, and 93,769,000 pounds for the 5-year average. As a result of the much smaller stocks of shell eggs in storage this year and the smaller fresh-egg production during the last several months, many manufacturers of food specialties who normally use shell eggs have used frozen eggs instead. The demand for frozen eggs has therefore been unusually active and stocks in storage decreased approximately 20,800,000 pounds from August 1 to October 1, compared with a decrease of about 14,400,000 pounds during the same period last year. Stocks of frozen eggs in storage on October 1 were still larger than those of the same date last year or the 5-year average, but in view of the smaller stocks of shell eggs in storage and the prospective lighter egg production during the late fall and winter months these supplies do not appear likely to interfere seriously with the increasing trend of prices.

EGG PRICES

The farm price of eggs on April 15, which is normally the lowest farm price of the year, was 13.5 cents per dozen in 1934 compared with 10.3 cents per dozen in 1933, an increase of 31 percent. Smaller egg production and a higher level of farm prices generally were mainly responsible for this rise in egg prices. The advance in egg prices from April to October in 1934, when they reached 23.7 cents per dozen, was less than the advance during the same period in 1933, but greater than normal. Ordinarily, farm egg prices in October may be expected to be about 64 percent higher than those in April, but on October 15, 1934, the price was 76 percent above the April price. The cause of this greater-than-normal seasonal advance in egg prices was about the same as mentioned above—a continuation of the upward movement of farm prices generally, and a greater-than-usual decline in summer and fall egg production which in turn resulted from some reduction in the average size of laying flocks, rising feed costs, and unfavorable weather conditions.

The tendency for egg prices to rise more rapidly than usual is likely to continue through late November and early December; after that, when egg prices normally decline, this decline may be less rapid than usual. This probability is strengthened by the fact that farm prices have shown a rising tendency. Unless unusually favorable weather conditions prevail this winter, fresh-egg production will be considerably decreased. With the stock of all eggs in cold storage on October 1, 1934, about 5 percent less than in 1933, and also less than the average, the check on rising fresh-egg prices from this source for the remainder of the storage period will be diminished. On the other hand, there are some indications that egg production along the Atlantic seaboard may be larger this winter, especially in the North Atlantic States, which contribute heavily to the commercial winter egg supply. This increase is likely to be somewhat offset, however, by a smaller production on the west coast which also contributes heavily to the fall and winter fresh-egg supply.

POULTRY PRICES

Farm chicken prices reached their lowest point since 1910 at 8.6 cents per pound as reported for December 15, 1933, but in terms of the normal seasonal movement of chicken prices the lowest point was reached when a price of 9.1 cents per pound was reported for March 15 of the same year. Between March 15, 1933, and March 15, 1934, the farm price of chickens advanced to 10.7 cents per pound, an increase of 18 percent, while in October of 1934, farm chicken prices at 11.8 cents were 10 percent above those in March. This is particularly significant since normally chicken prices for October are about 1.5 percent below March prices. The advance in chicken prices throughout this whole period was partly in response to advancing prices generally and in response to reduced chicken numbers. This latter influence was especially effective during 1934 when, in addition to the fewer layers in the farm flocks, a smaller number of chicks were hatched. Coincident with the prospect for a smaller supply of poultry during the fall and winter of 1934-35, it became apparent that supplies of other meats, especially the cuts of finer quality, would also be reduced, a fact which contributed to rising poultry prices.

Poultry prices are likely to advance still more during the coming fall and winter. The small hatch and the heavy subsequent marketings indicate a much smaller supply available for later marketings unless laying flocks are further materially reduced from their present low levels. It is not possible in October to estimate when the heavy rate of marketings from the drought-affected States will subside but relatively smaller marketings later are to be expected. With smaller poultry marketings, and reduced supplies of other meats which are in prospect for next spring, poultry prices are likely to advance to higher levels as compared with those of 1934, at least during the first half of 1935.

TURKEYS

The outlook is for higher prices for the turkey crop of 1934 than those received for the 1933 crop. This should result partly because of a moderately smaller crop and partly because of prospective reduced supplies of other poultry and the higher price level of meats and foodstuffs generally. Shortage of feed in many sections may result in a greater proportion of the crop than usual being marketed at Thanksgiving, and if this occurs better prices may prevail for the Christmas and later market than will be realized for the birds marketed earlier. Feed shortage and higher feed prices may also cause more turkeys to be marketed in an unfinished condition than usual, although the recent announcement of provision of loans by the Production Credit Corporation for feeding turkeys and loans by private bankers for the same purpose may minimize this effect. Even though prices average higher per pound for the 1934 than for the 1933 crop, the much higher feed prices and the probable lighter average weights at which marketed may result in smaller net returns to growers than last year.

Reports from crop correspondents indicate that the number of turkeys in farm flocks this year for the country as a whole will be about 93 percent of the large number raised last year. Scattered trade estimates report a somewhat greater decrease. Although production of turkeys this year on the basis of returns to the Department of Agriculture is about 7 percent less than during the last 2 years of record heavy production, it is slightly greater than the average production of the 5 years 1929-33. During this period the production of turkeys has increased rapidly owing to the increased adoption of modern methods of rearing, which cut down the heavy mortality, and to relatively low feed costs during most of the period 1930-33, which made turkey production more profitable than most of the farm enterprises.

Compared with last year this year's crop is reported to be somewhat larger in the Northeastern States, in the important producing States of Oregon and California, and in a central belt of States extending from the Rocky Mountains eastward to Chesapeake Bay, most of which are of secondary importance in turkey production. Both north and south of this belt the crop appears to be smaller, ranging downward to 65 or 75 percent in the important northern producing area of the Dakotas and Minnesota. In Texas and Oklahoma, the heaviest producing area, the crop appears to be fully 90 percent as great as last year. Drought conditions have apparently reduced the size of the turkey crop in some of the States affected, but in others the crop is as large or larger than last year.

This latter condition may be due to a lower mortality of the poultts because of absence of rain during the critical period of their lives. No definite information is available concerning the number of turkeys raised in large commercial flocks, but it appears probable that there has been some decrease but no drastic change in the numbers produced in this way. The number of poultts hatched in commercial hatcheries showed an increase of 22 percent in 1934 as compared with 1933. This increase doubtless represents a continuance in the trend, which has been in evidence for several years, to purchase baby poultts instead of hatching them on the farms.

The supply of turkeys in storage is not excessive. Additions to storage stocks last year were heavy and when the peak was reached on February 1, 1934, holdings reached the all-time record of 19,941,000 pounds, as compared with 16,728,000 pounds on February 1, 1933, and a 5-year average of 12,605,000 pounds. Out-of-storage movement continued good throughout the year, however, and stocks on October 1, 1934, were reduced to 3,041,000 pounds, compared with 2,769,000 pounds on the same date last year and a 5-year average of 3,500,000 pounds.

Imports of turkeys in 1934 were negligible. Through August only 27,600 pounds had been brought into the country, compared with 128,000 pounds during the same period of 1933. This is only a very small percentage of the usual imports for a number of years prior to 1932.

With the crop moderately smaller than last year, early indications are that prices will be higher. The farm price reported for October 15 was 12.7 cents, as compared with 11.3 cents on the same date last year. Wholesale prices at New York for frozen stock in September were higher than on the same date in 1933, being nearly 5 cents higher for young toms and 1 cent higher for hens. The September wholesale price of live turkeys was nearly 3 cents and of fresh dressed turkeys nearly 4 cents higher than a year ago. Smaller prospective supplies of other poultry and decreased supplies of other meats, especially the better and more expensive cuts, are additional factors favoring higher turkey prices. Much will depend upon the holiday demand for turkeys. If this does not develop well, the available supply of turkeys will be large enough to hold price advances within narrow limits.

The October 15 farm price of turkeys in 1934 was equal to 92 percent of the 5-year average October pre-war price (1910-14), but to only 50 percent of the October average for the post-war years, 1923-27. Feed prices for October 1934 were 111 percent of the corresponding pre-war and 84 percent of post-war levels. The relatively unfavorable relation of turkey prices to feed prices in October this year, especially when compared with average October post-war relations, if it were to characterize the entire marketing season, would tend toward a further reduction in turkey numbers next year, even though lower feed costs then are probable. If the expected increase of several cents in this season's price develops, the decrease in numbers next year, if any, will probably be small.

CLOVER AND ALFALFA SEED

Production of red and alsike clover seed this year is the smallest on record and that of sweetclover is the lightest since this crop came into prominence. Production of alfalfa seed is below the average. Because of these short crops and the unusually small carry-overs, supplies of these seeds are the smallest in many years. Except for alfalfa seed, they fall far short of meeting normal planting requirements.

Almost all the red and alsike clover seed produced in a given year is obtained from the fields sown in the spring of the preceding year. Because a large percentage of the clover seedlings was badly injured or destroyed by the drought, it is apparent that another short crop of these seeds is in prospect next year. The expected exhaustion of supplies this year and the poor condition of new seedlings indicate that prices of red and alsike clover seed may continue at relatively high levels for another year.

Although new seedlings of sweetclover and alfalfa seed were affected considerably by the drought and the seed of the former will be obtained mostly from those (new) seedlings, the situation is not so serious as in the case of red and alsike clover seed. Nevertheless supplies of sweetclover seed in the fall of 1935 are expected to be below normal even though the plant is a prolific seeder almost irrespective of where it is being grown. Alfalfa seed supplies, barely sufficient for normal sowing requirements, are expected to be drawn upon

heavily where alfalfa may be substituted for other crops, the seed supplies of which are relatively shorter than those of alfalfa.

Production of red clover seed this year is estimated at 36,000,000 pounds, compared with approximately 59,000,000 pounds in 1933, 75,000,000 pounds in 1932, and 69,800,000 pounds, the 5-year (1927-31) average. Although the 1934 crop of this seed is the smallest on record, it is only about 2,500,000 pounds smaller than the 1924 crop. The short crop is due mostly to the drought, which reduced the yield of seed and caused a decrease in the acreage for seed production because a larger portion than usual of the total acreage of red clover was needed to help make up some of the deficiency in the supply of hay, thus leaving a smaller acreage of the crop available for seed production. The decrease in seed production this year is greatest in portions of Iowa, Minnesota, Michigan, Missouri, and Illinois.

Imports of red clover seed for the last 3 years have been negligible. During the fiscal year ended June 30, 1934, only 11,000 pounds was imported, compared with 10,332,600 pounds, the average for the 10-year (1921-30) period. Although no red clover seed has been permitted entry this (calendar) year, approximately 50,000 pounds, subject to the Federal Seed Act, arrived at two Atlantic ports during the first half of October. The larger production in Europe this year than last year is offset only in part by the small carry-over. Much more seed than in recent years is expected to be imported if prices here continue to rise relatively more than in Europe.

Exports of red clover seed for the 9 months ended September 1934, were 1,022,358 pounds, compared with 523,859 pounds for the corresponding period last year, 184,100 pounds in 1932, and 415,938 pounds for the 5-year average. It is understood that much of the seed was sold for export before the shortage in this country was realized and before prices had advanced sharply.

Although sales of red clover seed last spring were somewhat smaller than in 1933, the carry-over is smaller than usual. Current prices received by growers average about \$18.50 per 100 pounds, basis clean seed, compared with about \$9.75 last year, \$8 in 1932, and \$19.75, the 5-year average about October 15.

Production of alsike clover seed this year shows even a greater reduction from that of last year than does red clover seed. It is estimated that about 13,000,000 pounds was produced, compared with 25,000,000 last year, 26,200,000 pounds in 1932, and 28,100,000 pounds, the average for the 1927-31 period. No alsike clover seed has been imported since March 1931. The average quantity imported for the 20-year (1911-30) period was approximately 5,100,000 pounds. The lack of imports has more than offset the decreased sales in recent years and has been an important factor in causing supplies to be small. Current prices to growers average \$22 per 100 pounds, compared with \$11.25 last year, \$8 in 1932, and \$18.50 for the 5-year average.

Sweetclover-seed production is estimated at 30,000,000 to 35,000,000 pounds, compared with 41,400,000 pounds last year, 41,600,000 in 1932, and 60,600,000 pounds for the 5-year average. Largely because of the below-normal crops of 1932 and 1933 the carry-over is much smaller than usual, notwithstanding a very small decrease in the sales last spring. Supplies of new- and old-crop seed are the shortest since this crop began to be grown extensively, about 12 years ago. Current prices to growers average about \$6.25 per 100 pounds, compared with \$2.80 last year, \$2.15 in 1932, and \$4.60 for the 5-year average.

The alfalfa-seed crop was not affected so much by the drought as most other seed crops were, largely because it is able to withstand drought better and because much of it is produced on irrigated land. Although the drought decreased yields considerably in some sections, much of the reduction in acreage for seed production is attributed to the shortage and high price of hay and the poor condition of pastures. Of the important alfalfa-seed-producing States, South Dakota and Montana were affected most by the drought.

Alfalfa-seed production is estimated at 40,000,000 pounds, compared with 55,400,000 pounds in 1933, 32,100,000 pounds in 1932, and 52,200,000 pounds for the 5-year average. Imports have been small during the last 5 years, averaging only 202,160 pounds, compared with an average of approximately 6,500,000 pounds for the preceding 10 years. Production in Europe is indicated to be considerably better than that of last year, when the production was much below normal. For some time prices have been higher there than here. The 1934 crop in Argentina is smaller than average, but seed of the 1935 crop, which is expected to be harvested next January and February, may be available for export to this country in time for sowing next spring.

Exports of alfalfa seed from the United States for the calendar year 1933 were larger than usual, but smaller than the record exports (1,564,641 pounds) of 1932. In 1933, 1,198,796 pounds were exported, and during the first 9 months of 1934, 807,587 pounds were exported, compared with 396,340 pounds last year for the corresponding period.

Sales of alfalfa seed in the spring by retail dealers were about 5 percent larger than those in the spring of 1933, in contrast with the decreased sales of red clover, alsike clover, and sweetclover seed. The carry-over is the smallest in a number of years. Current prices of common alfalfa seed received by growers average about \$17 per 100 pounds, basis clean seed, compared with \$7.75 last year, \$7.50 in 1932, and \$14.90, the 5-year (1927-31) average. Prices to growers for Grimm alfalfa seed range mostly from \$24 to \$27, compared with \$9 to \$12 last year on October 15.

POTATOES

Potato supplies in 1935 probably as large or slightly larger than supplies grown in 1934 may be produced if average weather conditions prevail and these large supplies may offset any improvement in demand, if growers respond as they usually do to potato prices. A potato crop in 1935 as large as that produced in 1934 would return potato growers about the same low prices and incomes for the crop year 1935-36 as in the current 1934-35 season.

Although low potato prices may prevail from now until next spring, growers, if they respond to price as they have in the past, will be influenced by the favorable prices received for their 1933 crop and probably will decrease their 1935 acreage only by 70,000 acres or 2 percent of the acreage planted in 1934. This would make a total planted acreage of 3,313,000 acres in 1935. Average weather conditions would result in a yield of about 110 bushels per acre or a total production of about 365,000,000 bushels which is slightly more than the 1934 production of 362,391,000 bushels (as reported on Oct. 1) and above the 1928-32 average of 363,394,000 bushels. This is a larger crop than can be marketed to advantage and it now seems improbable that 1935 prices should be much above the low levels of the current season unless weather conditions will be unusually bad, or unless a substantial increase occurs in consumer demand. Six times in the last 10 years the total United States yield has been higher than 110 bushels per acre and yields of over 120 bushels have occurred twice in that period.

Prices so far this season, in the important intermediate and late-producing areas, have been very much below those of last season. This is due to the increased crop which more than offset the rise in consumer purchasing power. Prices received by producers in selected surplus-producing sections during October 1933 and 1934 (preliminary October average price), for United States No. 1 potatoes, bulk per hundredweight, averaged as follows: At Presque Isle, Maine, \$1.01, \$0.27; Rochester, N. Y., \$0.93, \$0.33; Benton Harbor, Mich., \$0.88, \$0.40; Waupaca, Wis., \$0.73, \$0.41; and at Idaho Falls, Idaho, \$0.58, \$0.48, respectively. At Presque Isle, Maine, and Rochester, N. Y., prices in October were respectively \$0.74 and \$0.60 lower than in October 1933. In Michigan they were \$0.48 less, in Wisconsin \$0.32 less, and in Idaho \$0.10 less. The smaller decline in Idaho was due to a smaller production in 1934 in the 10 Western States compared with that in 1933, and in contrast with increases in production in most of the other late Northern States. The present price relationships between these selected late producing areas may be maintained. No marked advance is anticipated in the prices of late potatoes during the 1934-35 marketing season.

Since the demand for potatoes is relatively inelastic (that is, small crops normally result in larger total returns to growers than do large crops), it appears that potato growers would benefit next year if they reduced their acreage more than is now indicated. Over the long time, it seems apparent that a stable acreage of around 3,000,000 acres, with yields varying from 100 to 120 bushels per acre and averaging about 110 bushels, would produce an ample supply of potatoes for all domestic requirements. The total United States production would then vary from 300,000,000 bushels in years of low yields to 360,000,000 bushels in years of bumper yields and would average, over a period of years, around 330,000,000 bushels. This average supply would result in fairly reasonable returns to the efficient growers in good locations. When more than 3,000,000 acres are planted, growers can expect low returns, unless yields are smaller than usual.

THE 1934 CROP

The October 1 forecast of the Crop Reporting Board places the 1934 United States potato crop at 362,391,000 bushels, compared with 320,353,000 produced in 1933, and with 363,394,000 bushels—the 1928–32 average production. The total 1934 crop in the 11 southern early States is estimated at 38,859,000 bushels, or 8,600,000 more than their 1933 crop. In the intermediate States the crop is estimated at 33,526,000 bushels, or 5,200,000 bushels more than in 1933, and in the 30 late States this year's forecast of 290,006,000 bushels is 28,300,000 bushels more than these States produced in 1933. In contrast with the distribution of the 1933 late crop, there are large crops in the Eastern and Central States and a small crop in the West. The 3 eastern surplus late-potato States have a prospective production of 110,690,000 bushels, or about 22,700,000 more than last year, while the 5 central surplus States expect a total of 88,956,000 bushels, about 17,100,000 bushels greater than in 1933. On the other hand, the 10 western surplus States have prospects of only 56,320,000 bushels this year, or 16,300,000 bushels less than in 1933. The 12 other late States have about 34,040,000 bushels this season, against 29,316,000 bushels last year.

Summarizing the late-crop situation, there are about 26 percent more potatoes in the eastern late States than there were in 1933; about 24 percent more in the Central States, but 22 percent less in the West. The larger potato markets are located in the Eastern and Central States, and it appears that they are well supplied for the coming winter and spring months.

Because of the apparent small supply of late potatoes in storage for the 1934 spring-marketing season, commercial potato growers in the southern early and intermediate States increased their plantings about 20 percent in 1934. Yields of commercial producers were about 15 percent above those of 1933 and, as a consequence, commercial production was increased about 37 percent or about equal to the 1928–32 average production of 42,127,000 bushels.

PROBABLE PRODUCTION IN 1935

The commercial growers in the first section of early States (Florida and the lower valley of Texas), produced a 29-percent larger crop than in 1933 but, on account of improved demand conditions and less competition from the old crop, they received slightly higher prices in 1934 than during the previous season. The October intentions-to-plant reports of the growers indicate that the 1935 commercial potato acreage in these earliest States may be increased by 9 percent over that planted in 1934.

In the second section of early States (Alabama, California, Georgia, Louisiana, Mississippi, South Carolina, and Texas, other than the lower Rio Grande Valley) commercial early acreage was increased 28 percent in 1934, yields were increased by 17 percent, and commercial production increased by almost 50 percent, amounting to 10,632,000 bushels, or about 20 percent more than the 1928–32 average production of 8,857,000 bushels. For 1935 a 2-percent decrease in acreage was indicated by these growers on October 1. The second early States (North Carolina, Oklahoma, Arkansas, and Tennessee) and intermediate States (Virginia, Maryland, Kansas, Kentucky, Missouri, New Jersey, and Nebraska) produced much larger crops than in 1933 and received very low returns. These growers on October 1 indicated their intentions to plant an acreage in 1935 about 5 and 6 percent, respectively, less than in 1934. It is probable that the stored supplies of old potatoes will be large throughout the winter and spring of 1934–35 and that they will have a depressing influence on the potato markets. Because of the low prices being received by producers in the 30 late States it is probable that the acreage planted in the late States next year, particularly in the eastern and central surplus-producing States, will be reduced slightly. The total United States potato acreage in 1935, therefore, is expected to be about 2 percent smaller than the 1934 plantings and may approximate 3,315,000 acres.

Assuming that the acreage now indicated is actually planted during the spring of 1935 and that average yields are obtained, the production of the commercial early, second early, and intermediate potatoes may total about 38,200,000 bushels, compared with 42,287,000 bushels in 1934 and 42,127,000 bushels, the 1928–32 average. With a large carry-over of old potatoes in prospect, it is probable that both the early and second early crops will be difficult to market at reasonably satisfactory prices. For the intermediate States prices depend

largely upon the size of the intermediate crop, so that any reduction in the crop in these States should result in higher prices than those received in 1934.

During the 1933-34 season the production of potatoes in the late States was reduced, largely because of low yields, and the returns to growers were the highest for several years. As a consequence, growers in these States increased their planted acreage in 1934 by 4.8 percent, the greatest increases coming in Maine, Wisconsin, Nebraska, Idaho, Wyoming, Washington, and California. This larger acreage, together with good yields, has resulted in greater-than-average production in nearly all except the Western States. For 1935 it is expected that the acreage in the late States will be reduced slightly, which, with average yields, would result in a production slightly greater than the 290,000,000 bushels grown in 1934, and a total United States crop of about 365,000,000 bushels, or about the same size as that harvested in 1934.

Exports of potatoes in the 1933-34 season (July-June) totaled 721,000 bushels, which was 250,000 bushels under last season and far below the 5-year average, 1926-27 to 1930-31, of 2,323,000 bushels. Imports of potatoes in 1933-34 were 2,102,000 bushels, compared with 440,000 bushels the preceding season and the 5-year average of 3,771,000 bushels. Increase in the potato imports was a result of the short United States potato crop in 1933.

Most of the potato exports go to Cuba, Canada, and Panama, and the imports come chiefly from Canada, Cuba, and the Bermudas. United States exports to countries of the south are largely for seed purposes, and the imports from Canada are mainly seed potatoes. Exports of potatoes from the United States are likely to be somewhat heavier in the 1934-35 season than during last season, and the imports smaller because of the large United States crop of 1934.

SWEETPOTATOES

Sweetpotato prices probably will average slightly higher during the 1934 season than during the last several seasons, largely because the general level of food prices is higher. Despite this slight improvement in prices, the total acreage grown in the United States in 1935 is expected to be about the same as in 1934. In the past the acreage in the southern cotton States, comprising about 87 percent of the United States total, has varied with the returns from the cotton crop, the sweetpotato acreage being reduced after a year of improvement in cotton prices and increased after a year of declining cotton prices. For 1935 this relationship would indicate that a decrease in the sweetpotato acreage is in prospect, but new factors entering into the cotton situation are likely to cause sweetpotato growers to plant about the same acreage in 1935 as they did in 1934. In the Middle Atlantic States, in Tennessee, and in the North Central States, where sweetpotatoes are grown largely for market, the higher prices in 1934 are likely to result in some increases in the 1935 acreage, but these increases will be small in terms of the total United States acreage. On the Eastern Shore of Virginia, where sweetpotatoes are commonly grown on the same farm with potatoes, the acreage of sweetpotatoes may be increased because of the decreased plantings of potatoes.

The sweetpotato acreage was increased slightly in 1934, owing to higher prices in the 1933-34 season and the tendency of farmers to produce more of their own food supply. There were slight decreases in the Middle and South Atlantic States, where the potato acreage was increased, but there were more than offsetting increases in the North Central and South Central States.

For the country as a whole, yields in 1934 are expected to average about the same as in 1933, which were the highest in any year since 1929. They are expected to be slightly higher than last year in the Middle and South Atlantic States, but lower in the remainder of the sweetpotato-producing States, particularly in the drought States.

Production of sweetpotatoes for 1934 was forecast at 65,600,000 bushels on October 1, or about 600,000 bushels more than the 1933 crop and about 1,800,000 bushels more than the 1928-32 average production. In the Middle Atlantic Coast States production in 1934 was forecast at 7,200,000 bushels, compared with 7,600,000 bushels in 1933; in the lower Atlantic Coast States, 21,900,000 bushels in 1934 against 21,600,000 bushels in 1933; in the South Central States, 33,400,000 bushels against 32,600,000 bushels; and in the North Central and Western States, 3,200,000 bushels in 1934 against 3,300,000 bushels in 1933.

Sweetpotato prices declined sharply from 1929 to 1932, but advanced in 1933 until they reached the 1931 level. Owing to the rise in the level of food

prices in general, it is expected that 1934-35 sweetpotato prices will average slightly higher than in 1933-34. United States farm prices averaged 75 cents per bushel on October 15, 1934, compared with 63 cents a year earlier.

TRUCK CROPS FOR MARKET

The market outlook for commercial truck crops for fresh-market shipment during 1935 appears to be a little more favorable to growers than it has been for any season since 1931. With the level of wholesale food prices averaging about 15 percent higher than in the spring of 1934 and with smaller supplies of such staple foods as meat, dairy, and poultry products in prospect, it is probable that the demand for commercial truck crops will be somewhat improved, at least during the first half of 1935. During the latter half of 1935, unless there is an increase in consumer buying power, it is expected that the level of prices will be adjusted chiefly on the basis of changes in the supplies available for market, a larger production tending to lower the prices below the 1934 level and a smaller production favoring an improvement in prices.

Commercial supplies of late cabbage, onions, potatoes, and sweetpotatoes are generally larger this season than in 1933, and the carry-over of these crops is expected to offer more competition to early 1935 spring-grown vegetables. However, the total production of vegetable crops in home and local gardens, particularly in the drought-stricken States, has been decreased, and the quantity of home-canned and home-stored vegetables for winter and early spring consumption was less than during the last several years. While buying power is very limited for many whose home food supply is extremely low this year, the general shortage of locally grown foodstuffs will result in some expansion of demand for shipped-in supplies until home and local gardens again come into production next summer. Hence, if the commercial production of early vegetables in 1935 is not expanded beyond that of recent years, it seems probable that improved prices will permit growers to market more nearly the entire early commercial supply than has been true in any of the last few seasons, when appreciable quantities of some crops were left in the field because growers could not afford to harvest them at prevailing market prices.

The reports so far received from Florida, Texas, Arizona, California, and a few other early sections indicate that the combined acreage of 11 vegetables for harvest in the late fall and winter of 1934-35 in these States will be larger than the early acreage of the 1933-34 season by more than 10 percent and will exceed the average of the five previous seasons by 25 percent. The acreage of nearly every one of these vegetables will be above the average. Although these fall and winter acreages represent only a small proportion of the total early acreage, they do indicate that the supplies from the early areas probably will be ample.

During the 1934 season the total production of 17 important truck crops for fresh-market shipment increased about 9 percent from the relatively small production in 1933. Production in 1934 was slightly below the record high production in 1932. In terms of the 1924-29 average, production of these 17 vegetables is estimated at 117 percent, compared with 107 percent in 1933, 119 percent in 1932, 117 percent in 1931, 118 percent in 1930, and 114 percent in 1929. It appears that the steady expansion in the production of these crops, which was interrupted in 1933, has been resumed.

The increase in production of these vegetables in 1934 was due both to an increase in acreage and to larger yields per acre. Most of the important producing centers of these commercial vegetables were not encompassed in the 1934 drought area but several important western areas were handicapped by a shortage of irrigation water. Total acreage planted to these crops was 6 percent larger in 1934 than in 1933, which was about 10 percent below the record high acreage of 1932. During the last 15 years the trend of acreage of these commercial vegetables has been sharply upward, with the only major reversal occurring in 1933 when the acreage was decreased 10 percent. From 1923 to 1932 the average rate of increase was about 7 percent per year. In 1934 the acreage of 17 truck crops for fresh-market shipment totaled 1,380,000 acres compared with 1,300,000 acres in 1933 and 1,430,000 in 1932, the record high for these vegetables. The only major acreage decreases in 1934 occurred in the case of cauliflower, eggplant, peas, peppers, spinach, and cantaloups; there were substantial increases in the acreages of nearly all of the others.

Yields per acre of commercial truck crops for fresh-market shipment in 1934 were about 4 percent higher than in 1933. The trend of per-acre yields of these vegetables has been downward for the last 15 years, reaching a record low in 1933. Average yields per acre declined about 20 percent during the decade ended in 1931 but since 1931 the rate of the decline has been much slower. Since the average yield per acre in 1934 was somewhat higher than for the previous 3 years and almost as high as in 1930, it seems probable that the rapid downward trend has been checked.

The average value per acre of commercial truck crops, although estimated to be larger than during the 1933 season, maintains the low level that has existed since 1931. The average gross return to growers of these commercial truck crops was approximately \$106 per harvested acre in 1934 compared with less than \$101 in 1933 and \$96 in 1932, the low point of recent years. The decline in value per acre from \$175 in 1929, to \$142 in 1930, to \$118 in 1931, and to the low figures of recent years parallels largely the general sharp decline in prices resulting from greatly reduced consumer purchasing power. During the early 1920's, the value per acre of the 17 commercial truck crops for shipment was about 125 percent of the 1924-29 average but with a general lowering of both yields and prices it had declined to only 65 percent in the early 1930's. The net returns to growers were probably less in 1934 than in 1933 because of increases in costs of production and marketing.

VEGETABLE IMPORTS AND EXPORTS

The United States trade in vegetables has declined since the 1929-30 season—in imports as a result of the higher duties under the Tariff Act of 1930; in exports as a result of higher tariffs in Canada and other nearby countries; and in both imports and exports as a result of the world-wide business depression.

Imports of vegetables, excluding potatoes and dried vegetables, amounted to 33,500 short tons in the 1933-34 season (July to June) compared with 95,800 tons in the 5-year period 1926-27 to 1930-31. Exports in 1933-34 amounted to around 45,000 short tons compared with 82,500 tons during the same 5-year period.

The chief source of winter vegetables has generally been Mexico but of the 33,500 short tons imported in 1933-34, Cuba supplied 59 percent, Mexico 34 percent, and all other countries, 7 percent. Canada is the chief outlet for winter vegetables with small quantities going to a number of nearby countries like Panama, Mexico, Cuba, Newfoundland, and Labrador.

Some increases in the imports of vegetables from Cuba may be expected as a result of the reduction in the United States duties for certain periods in the winter under the Cuban trade agreement. The amount of increase in shipments of winter vegetables from both Cuba and Mexico will depend largely on the price situation in the United States. With average or larger plantings of most vegetables in the United States, it is not probable that market conditions will improve sufficiently to attract much larger imports.

CABBAGE

The United States cabbage acreage of 175,890 acres in 1934, including that grown for sauerkraut, was about 41 percent larger than the acreage of 1933 and 22 percent larger than the 1928-32 average acreage. The larger acreage in 1934 resulted primarily from the favorable returns to growers for the late crop of 1933. This increased acreage, together with a 17-percent increase in yields, resulted in a 65-percent increase in production over the relatively small 1933 crop. Total production in 1934, including cabbage grown for sauerkraut, is indicated at 1,195,700 tons against 723,500 tons produced in 1933 and 1,010,300 tons, the 1928-32 average. A surplus supply of cabbage was available for market throughout the 1934 season, and prices averaged about 50 percent less than the 1933 prices. These lower prices are expected to cause a considerable decrease in the 1935 planted acreage in all groups.

In the early States (California, Florida, Louisiana, and Texas) it is probable that the acreage planted for the 1935 spring market will be decreased materially from that grown in 1934. In the light of past experiences it seems probable that an acreage about 40 percent smaller than that grown in 1934, or 35,000 acres, would produce, with average yields, about as large an early-cabbage crop as can be marketed at prices approaching the level of those in 1933. This is

particularly true when the prospective large carry-over stocks of late Danish cabbage are taken into consideration. Prices to growers in 1934 averaged only \$9.70 per ton against \$13.40 in 1933, and considerable quantities of the 1934 crop had to be left in the fields unharvested because of poor market conditions. The large 1934 crop of Danish cabbage in the late States indicates that large storage supplies of cabbage will be available next spring, which will offer severe market competition to the early crop. The acreage in these early States was increased from 30,900 acres in 1933 to 58,550 acres in 1934, yields were 0.8 ton higher, and production was, therefore, increased from 149,600 tons in 1933 to 326,500 tons in 1934. The 5-year average production is 208,900 tons.

In the second-early States (Alabama, Georgia, Mississippi, North Carolina, South Carolina, and eastern Virginia) the prospects are for a slight decrease in acreage in 1935, largely because the prices received for the 1934 crop were very low, and considerable quantities of cabbage had to be left unharvested in the fields. With the prospect that the early acreage will be reduced considerably, it is probable that a reduction of only 20 percent from the large 1934 acreage would be enough in the second-early States. This would reduce the acreage grown for market to 12,000 acres which, with average yields, would produce about 68,000 tons, or about as much as can readily be marketed at appreciably higher prices to growers than in 1934 and nearer the 1933 level. Prices in the second-early States in 1934 averaged only \$8.30 per ton compared with \$26.20 per ton in 1933, and \$33.50, the 1928-32 average. In 1934 the second-early acreage was increased 11 percent, to 15,300 acres, and yields averaged 5.3 tons per acre compared with 4.7 tons in 1933. Production in 1934 totaled 80,400 tons as compared with 64,600 tons in 1933 and the average production of 78,800 tons for the period 1928-32.

Prices in 1934 were also relatively low in the intermediate States (Arkansas, Illinois, Iowa, Kentucky, Maryland, Missouri, New Jersey, New Mexico, Tennessee, Washington, New York (Long Island), and parts of Ohio and Virginia), and it is expected that the 1935 cabbage acreage in these States will be reduced slightly below that grown in 1934. A reduction of 20 percent from the 1934 harvested acreage, or an acreage of approximately 20,000 acres, with average yields would produce an intermediate crop about as large as could be marketed at prices approximating the average of the recent 5 years. Per-acre yields have been low during the last 3 years and have reduced production, but it is not probable that such low yields will again be obtained in 1935. Intermediate crop prices averaged only \$16.60 per ton, compared with \$23 per ton in 1933 and \$18.90, the 5-year average, 1928-32. During 1934 the acreage in these States was increased about 12 percent, to 24,790 acres. Yields in 1934 averaged about the same as in 1933, but, because of the increased acreage, production was increased about 13,000 tons, to about 136,600 tons. The 5-year average production for these States is 153,200 tons.

Production of domestic and Danish types of cabbage in the late States, including cabbage for sauerkraut, totaled 644,600 tons in 1934, compared with 380,700 tons in 1933, and 563,500 tons as the 1928-32 average. Because of relatively high prices received for the 1933 crop, the 1934 acreage of domestic-type cabbage was increased about 33 percent and the Danish type about 36 percent. Yields of both types in 1934 were well above those of 1933, averaging 8.1 tons per acre for the domestic type and 8.8 tons for the Danish types. The 1934 production of domestic cabbage in the late States was forecast on October 1 at 313,900 tons, compared with 181,600 tons in 1933. As a result of this much larger production, prices to growers average only about \$8.50 per ton compared with \$14.70 in 1933 and \$9.50 as the 1928-32 average. These lower prices in 1934 are expected to cause growers of domestic-type cabbage to plant a smaller acreage in 1935. It appears that about 29,000 acres, with average yields, would produce a domestic-type crop of 241,000 tons or a crop large enough to supply market requirements at prices approximating the average of the recent 5 years.

The 1934 production of Danish-type cabbage is expected to total 330,700 tons, compared with 199,100 tons in 1933 and 275,000 tons as the 5-year average, 1928-32. This larger supply in 1934 is bringing much lower prices than were received for the small 1933 crop. The early-season prices of Danish-type cabbage averaged \$4 per ton, compared with \$16.90 in 1933 and \$12 as the 1928-32 average. Judging from what has happened in the past, the lower prices being received for the 1934 crop are likely to cause growers of Danish-type cabbage to decrease their 1935 plantings considerably. About 28,000 acres, or a reduc-

tion of 25 percent from that grown in 1934, with average yields, would produce a late Danish crop of 224,000 tons. This production appears to be about all that could be marketed in 1935 at prices approximating the 1928-32 average.

TOMATOES

With a record commercial acreage in 1934 and heavier yields than in 1933, a record crop of tomatoes was produced and it furnished larger domestic supplies throughout most of the 1934 season than prevailed in 1933. Growers in the early and the late groups of States received higher prices for their larger 1934 production, and those in the intermediate States disposed of their larger crop at about the same price level as in 1933. The early crop movement was favored by the reduced competition from imports of fresh tomatoes, representing primarily a further sharp decrease in the Mexican shipments. The increased intermediate and late-crop production was favored by an expanded market arising chiefly from the failure of many home and local gardens in the drought era of 1934. The second-early States developed the one difficult situation of the 1934 season with a record-breaking production, an unequaled low-price average, and large quantities of tomatoes left in the field. In all except this second-early group of States, there is danger that growers will be encouraged by the 1934 prices to plant too large an acreage in 1935. In that event, they may produce excessive market supplies without the benefit of some of the circumstances that were unusually favorable to the marketing of the commercial crop in 1934.

The tomato acreage grown in Florida and Texas in the fall of 1933 to furnish market supplies in the fall and winter months, beginning in November, amounted to 4,300 acres, a 30-percent reduction from the unusually large acreage in the fall and winter of 1932-33, but 7 percent larger than the average of the five previous seasons. The yields were extraordinarily good on this reduced acreage, and production amounted to 330,000 bushels, exceeding the previous season's crop by more than one-third. With less competition from tomato imports, this larger fall crop found a market at substantially the same level of prices as prevailed the year before. The fall-crop planting for 1934-35 is reported to be 8,500 acres, 98 percent more than a year ago, and a record fall-crop acreage.

The early 1934 or spring-crop acreage of tomatoes in south Florida was increased to 15,000 acres (16 percent larger than in 1933), and with per-acre yields averaging higher than usual and slightly better than in 1933, the 1934 production of 2,000,000 bushels was 18 percent larger than in 1933. Chiefly because of the reduced imports from Cuba and Mexico, this larger south Florida spring crop returned the growers a higher price than was received in any of the three preceding seasons when the production was very much smaller, but when imports were in greater volume. The spring-crop acreage in the other early areas (other sections of Florida, the Imperial Valley of California, and the lower valley of Texas) was reduced 7 percent below the 1933 acreage to 23,600 acres. The yields per acre on this reduced acreage averaged above the low 1933 yield. Production was estimated to be nearly 1,800,000 bushels, or about 4 percent greater than in 1933, although it was about 13 percent below the average crop of the preceding five seasons. These spring-crop tomatoes likewise brought the growers much higher prices than were realized in 1933, and nearly as high as were received in 1932 when the crop was 26 percent smaller.

Decreased imports of fresh tomatoes were an important factor in the improved domestic-market situation in the winter and spring months of 1933-34. Imports from Cuba were about equal to those of the two previous seasons, but imports from Mexico, which has usually been the principal source, were reduced to about 58 percent from the previous season's imports and were nearly 85 percent less than in the 1931-32 season. The total imports of fresh tomatoes during the 1933-34 season (July to June) were equivalent to about 820,000 bushels (of 53 pounds), which was considerably less than the total of about 1,100,000 bushels imported the preceding season and far below the 2,400,000-bushel average annual importation during the 5-year period ended with the 1930-31 season. The heavy decline in tomato imports dates from the 1931-32 season and is a result of low consumer purchasing power in the United States and the increase in the duty from one-half cent to 3 cents a pound in

the Tariff Act of 1930. The decrease has occurred mainly in the shipments from Mexico. Imports from Cuba, the other principal source, have been fairly well maintained. Early reports from Cuba indicate that plantings are expected to be a little heavier than in 1934. A lower duty will be in effect on Cuban shipments during the winter of 1934-35 which will favor increased Cuban imports. No definite information has been received regarding prospective 1934-35 production in Mexico. Unless prices in the United States are substantially higher than during the 1933-34 season, it is uncertain whether imports of Mexican tomatoes will be very much heavier in 1934-35 than they were the preceding season.

The second-early tomato sections in 1934 (Georgia, Louisiana, Mississippi, South Carolina, and Texas other than lower valley) increased their acreage 20 percent over that of 1933 to a record of 40,800 acres, slightly exceeding the previous high of 1932. Per-acre yields in 1934 were nearer the average of years prior to 1932, in contrast with the unusually low 1932 and 1933 yields. Production attained the record total of 4,100,000 bushels. Prices declined 57 percent below the 1933 average and 35 percent below the previously recorded low level in 1931. Approximately 20 percent of the Mississippi and Texas production was left unharvested. The second-early group of States has displayed a steady tendency toward expanding acreage and production in the last decade, and a corresponding downward trend in prices has resulted. Unusually large acreage and good yields in these States have combined at times to produce a much larger supply than the markets can absorb at a price high enough to repay the growers for growing and harvesting the crop. With the same yield as in 1934, an acreage no larger than that harvested in 1933, or one from 15 to 20 percent smaller than in 1934, would be sufficient to produce an ample market supply from the second-early States. Furthermore, the returns received by growers for this smaller production would be much better than in 1934 and probably close to the average returns of the 1932 and 1933 seasons.

Acreage in the intermediate States in 1934 (Arkansas, Maryland, Missouri, New Jersey, North Carolina, Tennessee, Virginia, and parts of California, Ohio, and Illinois) was also increased to record proportions—to 43,500 acres, or 17 percent more than in 1933. Per-acre yields averaged lower than usual in most of the States, especially those in the drought area. Production was estimated to be 9 percent greater than in 1933, or 4,800,000 bushels. The failure of home and local gardens in the central area created an additional demand for this increased summer production and helped to move the crop at prices no lower than the average of 1933 prices, which established a low record. With a more nearly normal situation in 1935 in regard to home and local gardens, it is quite probable that the commercial-market tomato acreage in the intermediate States, unless reduced 10 percent or more from the high level of 1934, would result in an excessively large crop that would bring the growers even lower prices than in the last two seasons.

The shortage of locally produced tomatoes also created a favorable market situation for the commercial supply of tomatoes produced in the late States in the 1934 season. The acreage in these late areas, other than southern California (Colorado, Delaware, Indiana, Iowa, Kentucky, Michigan, New York, Oregon, Pennsylvania, Utah, Washington, and parts of California, Ohio, and Illinois), was increased to 33,200 acres, which was nearly 6 percent larger than in 1933. Although yields were indicated to be slightly below average, production was apparently over 4,400,000 bushels, or a little larger than the 1933 production, and about 10 percent above the average of the previous 5 years. Prices on this larger crop appear to have averaged about 22 percent higher than in 1933. The 1934 late acreage in southern California amounts to 7,300 acres, or about 7 percent larger than the previous year, but yields are indicated to be correspondingly lower than in 1933, and production no larger. In the main group of late commercial States, an acreage and a production in 1935 no larger than in 1934 would probably experience a marketing situation not quite so favorable as in 1934. Under such circumstances, prices would probably average below those of 1933 and possibly range close to the extremely low 1932 price.

ONIONS

Following the record large crop and record low prices of the year 1932, onion growers in the late States in 1933 reduced their acreage more than 10 percent from the 1932 peak. This reduced acreage produced a moderate yield and close

to an average crop and restored prices to the level of recent years other than 1932. In 1934 the late-onion growers increased their planted acreage 10 percent or more over that harvested in 1933, but there was considerable loss of plantings, particularly in the Central States, as a result first of freezes, frosts, and high winds in May, and then of hot, dry weather during late May and early June. There was much replanting of acreage, in some areas acreage was replanted 2 or 3 times. The acreage eventually grown to harvest—46,800 acres—was about 8 percent smaller than in 1933, but according to harvest reports early in October, the per-acre yields were somewhat better than the average usually expected in the late States. The indicated 1934 production of 16,100,000 bushels in the late States just about equals that of a year ago and prices to date have been ranging very close to those of 1933. These prices may tend to encourage late-onion growers to expand their plantings again and therefore there is danger of excessive overplanting in 1935. Ordinarily, with the usual combination of weather conditions, a little less than 50,000 acres (or an acreage perhaps midway between that of 1933 and 1934) will produce an ample supply of late onions to meet consumption requirements and would probably prove to be most favorable to growers in maintaining prices at or above the 1933 and 1934 level.

In the spring of 1934, the areas producing early Bermuda or Creole onions (in California, Louisiana, and Texas) had 24,100 acres of this early crop which comes on the market heavily in April when the movement of storage supplies from the late States diminishes. This 1934 acreage was about 6 percent more than the average acreage of early onions from 1928 to 1932 but was nearly one-fourth larger than the reduced acreage of early 1933 when hold-over supplies from the large 1932 crop of late onions greatly depressed prices. The supply of late onions just before or at the time the early crop starts to market has a decided effect upon the early-onion market and prices. The yields of early onions averaged unusually low in 1933 and were not very much better in 1934, so that the early-onion crop of 3,600,000 bushels in 1934, although nearly one-third greater than the year before, was still one-fifth smaller than the average crop of the five preceding seasons. Supplies of old onions were a little heavier than average but were considerably reduced from the burdensome holdings of the year before. Prices of early onions were about the same as in 1933, when a record low point was reached. About 18 percent of the 1934 Texas crop was left in the field unharvested. In the face of a late-onion supply about equal to that of the previous year, growers in the early States can probably improve their returns in the spring of 1935 only if they reduce their acreage by 10 to 15 percent, especially in view of the possibility that the yield per acre may be larger than in either of the last two seasons.

The intermediate States (California, Iowa, Kentucky, New Jersey, Texas, Virginia, and Washington) increased their acreage in 1934 to the record level of 11,500 acres and obtained per-acre yields somewhat below average, but they produced a crop of domestic onions that was 17 percent larger than in 1933 and slightly in excess of the record crop of 1932. In view of the size of the crop in these States—aggregating 3,100,000 bushels—the 1934 prices were maintained surprisingly well compared with other recent years, possibly owing in part to a broader demand arising from failure of local garden supplies during the summer months. The returns of last season may cause growers to favor a further expansion of acreage in 1935, but if this increase occurs prices and growers' incomes may be lower in 1935, since the per-acre yield can normally be expected to surpass that of 1934, and would result in relatively greater production in 1935 than would occur from the acreage increase alone.

EXPORTS AND IMPORTS

Onion exports totaled 375,000 bushels in the 1933-34 season (July-June) compared with 541,000 bushels in the previous season and the 5-year average of 593,000 bushels for the seasons 1926-27 to 1930-31. The United States exports onions chiefly to Cuba, the Philippines, Canada, Panama, and Mexico. Small quantities are sometimes shipped to Australia and New Zealand. Exports in 1934-35 are not likely to vary greatly in quantity from those of last season.

Imports of onions in 1933-34 amounted to 80,000 bushels compared with 86,000 bushels in 1932-33 and an average of 1,448,000 bushels annually during the previous five seasons. Spain formerly supplied large quantities of onions to the United States markets, but at present Chile and Egypt are among the

chief sources of supply. Unless the duty is lowered substantially, imports of onions probably will show little increase.

WATERMELONS

The higher prices received by growers for the commercial watermelon crop of 1934 are likely to encourage an expansion of acreage in 1935—particularly in the second-early States—which may result in excessive production and a substantial reduction in growers' income from that of 1934.

Materially reduced watermelon acreage and very low yields held commercial production during the 1933 and 1934 seasons at a point approximately 30 percent below the average crop from 1928 to 1932. It was during this latter period that prices declined steadily and sharply from over \$170 per 1,000 melons in 1928 and 1929 to the low price of \$80 in 1932, primarily because of the decreasing purchasing power of consumers. Prices received by growers in 1933 and 1934 averaged nearly 20 and 40 percent, respectively, above the 1932 price. If these price increases have the expected influence on planting operations, and if yields are nearer the usual average, there is a probability that the resulting increase in acreage and production in 1935 may develop a marketing situation about as discouraging as that of 1932.

The increase in 1934 prices occurred in the second-early and the late producing States where the shipping season extends from June into September. The largest increase in price was obtained in the second-early States, which move the bulk of their crop to market during July. A decrease in price occurred in the early States where peak shipments ordinarily occur during June. Total car-lot shipments from all groups of States during the 1934 season were 4 percent less than those of 1933.

The early acreage in Florida and California in 1934 was estimated to be 31,500 acres, or 5 percent larger than the 1933 acreage, but 27 percent below the 5-year average of 1928-32. The average yield per acre in California was unusually heavy, but the Florida yield was the smallest in years, owing to heavy June rains. Production of the early crop amounted to 9,600,000 melons, or was 9 percent larger than the 1933 production in these two States, but 38 percent under the 5-year average. Prices to growers averaged 14 percent less than the 1933 prices and 26 percent below the 5-year average, being lower for both States. In California the lower price may be accounted for by a 34-percent increase in production. In Florida the lower prices in 1934 for a crop 11 percent smaller than in 1933 are chiefly explained by the poorer quality of the June shipments from Florida and by the earliness of the crop movement from Georgia in heavier competition with late shipments from Florida. In 1934, 41 percent of the Georgia shipments moved during June, when the bulk of the Florida crop ordinarily goes to market, compared with 34 percent in 1933 and with an average of 25 percent during June of the preceding five seasons.

In the second-early States (Alabama, Arizona, Georgia, Mississippi, North Carolina, South Carolina, and Texas) the 1934 plantings amounted to nearly 130,000 acres, or about 21 percent more than in 1933. There were material losses of acreage in Georgia (a loss of 10,000 acres, or 17 percent) and in South Carolina (5,000 acres, or 26 percent) owing to disease and heavy rain damage. There was also some loss in Mississippi, where the 1934 plantings were more than three times as large as the 1,000 acres grown in 1933. Of the 130,000 acres planted in 1934 in the second-early States, 114,000 acres were harvested. This represented an increase of 6 percent over the acreage harvested in 1933, but a decrease of 18 percent from the average of the 5 preceding years. With a relatively small yield per acre on this acreage, production in 1934 totaled 22,900,000 melons, or 5 percent less than the 1933 production and 41 percent less than the average production of the previous 5 years. The average price to growers was 42 percent higher than the 1933 price and exceeded the 5-year average by 2 percent. The factors that were apparently chiefly responsible for the increased price were the lighter shipments in July and the exceptionally hot weather in the northern markets in June and July, when the bulk of shipments from the second-early States comes on the market. Unless watermelon growers in the second-early States consider the possible disastrous outcome of further acreage expansion in 1935, the improved returns for the 1934 crop may exert such a strong influence upon their 1935 planting plans that they will plant even more acreage than in 1934. This acreage would approach the level of the years 1930 to 1932, when the precipitous decline in watermelon prices occurred.

If the low per-acre yield of 1934 happens to be exceeded in 1935 by as much as can reasonably be expected, even though the 1935 acreage is no larger than the 114,000 acres harvested in 1934, a crop at least 15 to 20 percent larger than that of 1934 would result, and might depress prices as much as 25 percent below the 1934 prices. Melons of better quality than those of the 1934 crop, hot weather in the consuming markets when the crop moves in volume, and any improvement in consumer purchasing power would be factors favorable to a smaller price decline for the larger crop.

In the late group of States (Arkansas, California, Colorado, Delaware, Illinois, Indiana, Iowa, Maryland, Missouri, New Jersey, Oklahoma, Oregon, Virginia, and Washington), where the harvesting season extends from late July into September, the 51,620 acres grown in 1934 represented a 6-percent increase over the 1933 acreage and a 17-percent increase over the average of the preceding 5 years. Although the estimated 1934 production of 17,400,000 melons was a little larger than the 1933 production in these States, and 8 percent above the 5-year average, the average price to growers in 1934 was 11 percent higher than the low level of 1933. The late States increased their acreage of watermelons substantially between 1928 and 1932, but during the 1933 and 1934 seasons the acreage was held slightly below the 1932 peak. These reduced acreages, with below-average yields in 1933 and 1934, resulted in smaller crops selling at prices averaging higher than the record low price of 1932 by 13 percent in 1933 and 25 percent in 1934. With the prospect that per-acre yields may be somewhat better in 1935, growers of watermelons will run the risk of a much lower income next season if further acreage increases are made.

TRUCK CROPS FOR COMMERCIAL MANUFACTURE

If the current prices of canned goods have their usual influence upon canners when planning the acreage of canning vegetables to be grown in 1935, the growers of these vegetables may have the opportunity of securing contracts for a nearly record acreage in 1935 at prices about equal to or above those received in 1934. Since 85 to 90 percent of the total acreage of commercial canning vegetables is ordinarily contracted or grown under the control of canners or packers themselves, the determination of the acreage to be grown in 1935 rests almost entirely in their hands.

No appreciable increase in the acreage for the 1935 season seems justified when it is considered that the 1934 acreage of canning vegetables was the second largest on record and that this acreage, under average growing conditions, would have produced a pack that might have proved burdensome—perhaps 15 to 20 percent larger than that actually obtained and close to the 1930 pack, which was the second largest on record. Disastrous growing conditions in many areas during the 1934 season reduced the yield per acre to the lowest level on record and eliminated the threat of excessive supplies. As a repetition of the 1934 growing conditions seems improbable in 1935, it would appear more reasonable for packers and growers to assume average yields per acre in planning their 1935 acreages than to be guided by the extremely low yields of the 1934 season. Acreage should be determined, as far as possible, by probable consumption requirements for the several crops during the 1934-35 and 1935-36 marketing seasons. The probable level of consumer purchasing power, size of the 1934 packs, carry-over, and, to some extent, competition of fresh vegetables and home canning, are the main factors to be considered.

The total pack of commercially canned vegetables in 1934, as indicated by preliminary estimates, is expected to be somewhat larger than the small pack of 1933, but slightly below the average of the previous 5 years. Although there were unusually small carry-over stocks at the beginning of the 1934-35 marketing season, total supplies are about equal to the average of the last three seasons. Domestic demand for most canned vegetables improved during the 1933-34 marketing season and, although considerably below normal, is likely to average somewhat above that of the preceding season. A factor tending to increase the demand for commercially canned vegetables is the failure of home gardens and the restricted pack of home-canned vegetables in the drought-stricken areas. Under these conditions it appears that wholesale prices of canned vegetables will continue at a relatively high level throughout the 1934-35 marketing season and that contract prices to growers of vegetables for manufacture in 1935 will be maintained or increased over the 1934 levels.

Since 1918 the acreage of commercial canning vegetables has expanded and contracted in a more or less regular cycle, contraction of acreage following the

accumulation of large carry-over and expansion occurring when these stocks became relatively small. During recent years the acreage has tended to decrease for 2 years following a peak, and to expand during the next three seasons to another peak. Following the record-breaking 1930 acreage (1,329,000 acres) of eight principal canning vegetables (asparagus, snap beans, cabbage for sauerkraut, sweet corn, cucumbers for pickles, green peas, tomatoes, and spinach) the acreage declined during the next two seasons to a low of 757,000 acres in 1932. This low acreage was followed by 2 years of increases, with the 1934 plantings reaching a total of 1,187,000 acres, or within 12 percent of the record high acreage of 1930. Judging from the history of the period from 1925 to 1930, it appears probable that the acreage of 1935 will be larger than of 1934, and may equal or exceed the acreage of 1930 unless packers make a concerted effort to hold it within present limits.

Although the 1934 acreage of these eight crops was increased 36 percent over the 1933 acreage and 18 percent over the 1924-29 average, the index of total production on this acreage is only 18 percent above the light production of 1933 and is 7 percent below the level of production for the 1924-29 period. Drought and heat damage in many areas resulted in the lowest yield per acre on record and averted the possibility of burdensome surpluses on several of these crops. Among the crops most seriously affected by unfavorable weather conditions were green peas, sweet corn, tomatoes, and cucumbers for pickles. But as a result of increased acreages the indicated production on all commercial canning vegetables, except asparagus, is larger than the 1933 production. Compared with the 5-year average production of 1928-32, however, asparagus, green peas, snap beans, cucumbers for pickles, spinach, and sweet corn show decreases of 5 to 23 percent. Cabbage for sauerkraut and tomatoes are 2 and 8 percent, respectively, above the 5-year average productions. Increases over the 5-year average productions are also indicated for the less important crops of green lima beans, beets, and pimientos.

Information on the average prices to growers for the 1934 season is not yet available, but judging from past relationships between contract prices to growers and prices received by packers for canned vegetables during the preceding December, January, and February, the level of prices to growers for vegetables for canning during the 1934 season probably averaged higher than the 1933 prices. The index of prices to growers in 1934 of the eight principal canning vegetables may average 75 to 80 percent of the 1924-29 level, compared with 70 percent in 1933, 66 percent in 1932, 84 percent in 1931, and 99 percent in 1930.

The total gross value to the grower was closely associated with total production from 1920 to 1930, inclusive, the amount of money received by growers for their crops rising and falling in proportion to the size of production. In 1931, however, a decrease of 30 percent in production was accompanied by a decline of 40 percent in value; and in 1932 a decrease of 20 percent from the previous year's production was accompanied by a 38-percent drop in total value, prices to growers of canning vegetables during these depression years declining more rapidly than wholesale prices of most canned vegetables. With the expansion of acreage in 1933, an increase of 10 percent in production was accompanied by a rise of 18 percent in total value, production in 1933 reaching to 79 percent of the 1924-29 level, while total value rose to 56 percent of the value for the same base period. The 1934 production is expected to reach 93 percent of the 1924-29 average, with a probability of total value reaching 70 to 75 percent of the 1924-29 level.

SNAP BEANS FOR CANNING

The prices received by packers of canned snap beans depend to a large extent upon factors other than the size of supplies, such as changes in consumer purchasing power and prices of competing canned vegetables and the production of snap beans for the fresh market. Contract prices to growers of snap beans for canning, in turn, are influenced by the level of wholesale prices of the canned product during the December and January preceding the growing season. Although the production of snap beans for the fresh market during the fall, winter, and spring of the 1934-35 season is expected to be less than the peak production of 1934, the supply of canned snap beans available for 1934-35, in view of existing consumption requirements, indicates that a smaller acreage than planted in 1934 would produce enough to meet consumption requirements of the 1935-36 season.

In spite of a reduction in packs and in total supplies since 1929 and 1930, prices received by canners declined to a low point in 1932 and have recovered

during 1933 and 1934 to only 71 percent of the 1924-29 level. Contract prices to growers declined even more sharply than the price of canned snap beans and reached a record low point in 1932. In 1933 the contract price was only slightly higher than in 1932. Information on the 1934 average price to growers is not yet available, but, judging by the increase in the price of canned snap beans in the December and January preceding the 1934 season, the 1934 price to growers should be higher than the exceptionally low points of 1932 and 1933.

On an acreage 20 percent larger than that of 1933, but 10 percent below the 5-year average of 1928-32, the preliminary estimate of production of snap beans for canning in 1934 is 9 percent larger than the 1933 production, but is 11 percent below the 5-year-average production. The 1934 production may be equivalent to a total pack of nearly 6,000,000 cases of 24 no. 2 cans. In 1933 the pack reached a total of 5,532,000 cases, and for the 5-year period, 1928-32, it averaged 6,617,000 cases. Total supplies for the 1934-35 season, including carry-over, will probably be close to 6,700,000 cases. Supplies are estimated to have been 6,200,000 cases in 1933-34, 5,400,000 cases in 1932-33, and 7,600,000 cases in 1931-32.

Disappearance from canners' hands during 1933-34 was probably around 5,500,000 cases; in 1932-33, 4,700,000 cases; and in 1931-32, 6,200,000 cases. Carry-over at the beginning of each of the 1932-33 and 1933-34 seasons was probably around 700,000 cases, compared with 1,400,000 and 1,500,000 cases at the beginning of the two previous seasons.

Should consumption during the 1934-35 season approximate the average of 5,500,000 cases of the last three seasons, the prospects are for a carry-over of about 1,200,000 cases into the 1935-36 season. A carry-over of 1,200,000 cases at the end of the 1934-35 season probably would prove burdensome if combined with a 1935 pack the same size as that expected in 1934. A pack not in excess of 5,000,000 cases in 1935 probably would be sufficient to meet consumption requirements in 1935-36 under the existing demand conditions and leave a carry-over in line with that of the last two seasons. A planting of approximately 42,000 acres, or 15 percent less than the 1934 acreage, under average growing conditions, would give a pack of 5,000,000 cases.

SWEET CORN FOR CANNING

With a light supply of canned sweet corn in sight for the 1934-35 marketing season, prices received by canners for canned corn will probably continue at the present relatively high levels, and growers of sweet corn for canning may be in position to contract tonnage in 1935 at prices equal to or exceeding those received for their 1934 production. In the light of present consumption requirements, however, and considering the production possibilities under more favorable growing conditions than existed in 1934, a 1935 acreage in excess of the 1934 plantings probably would lead to lower prices to canners for the 1935 pack. This situation would place growers in a less advantageous position to contract tonnage in 1936 at favorable prices.

Information is not yet available on the average price paid to growers for the 1934 crop, but, judging by the past relationship between contract prices to growers and prices received by canners during the December and January preceding the crop season, the 1934 price to growers will probably average higher than the low prices of 1933 and 1932. In past years the contract price to growers has tended to follow the fluctuations of wholesale prices of canned corn in December and January, these prices evidently reflecting the size of supply, the level of consumer purchasing power, and competition with fresh vegetables and home canning.

Preliminary estimates indicate a total pack of canned sweet corn in 1934 of 11,000,000 to 12,000,000 cases of equivalent no. 2 cans, 24 to the case. In 1933 the pack totaled 10,193,000 cases, and for the 5-year period 1928-32 it averaged about 15,300,000 cases. These figures do not include the pack of field corn, which in 1934 is expected to be larger than usual in some areas where the sweet-corn crop was curtailed by the drought.

The total supply of canned sweet corn for the 1934-35 season, including carry-over stocks on August 1, was probably close to the total supply of 12,700,000 cases estimated for the 1933-34 season. For the 5-year period 1928-29 to 1932-33 the total supply averaged about 19,200,000 cases. Total supplies for each of the last three seasons, 1932-33 to 1934-35, were materially less than for any year since the 1924-25 season.

The disappearance of canned sweet corn from canners' hands during the 1933-34 season was the lowest in recent years, being only 11,300,000 cases, compared with 14,200,000 cases in 1932-33 and with an average of 15,800,000 cases for the five preceding seasons, 1927-28 to 1931-32. The largest disappearance since the record high pack of 1925 was during 1929-30, when more than 17,000,000 cases passed from canners' hands into consumption channels. Exports in recent years have not exceeded 50,000 cases annually.

Assuming that consumption of canned sweet corn during the 1934-35 season may reasonably be between the low mark of 1933-34 and the moderate totals of 1932-33 and 1931-32, it appears that carry-over at the beginning of the 1935-36 marketing season will be the smallest in recent years. In this event total supplies for 1935-36 will be obtained largely from the 1935 pack. Unless there is a marked improvement in the level of consumer purchasing power in 1935-36, the consumption of canned sweet corn during that season is not likely to exceed the levels of 1931-32 and 1932-33, when apparent consumption was slightly above 14,000,000 cases but was 11 percent below the 5-year average. Under these conditions a pack which would cover a probable 14,000,000-case consumption in 1935-36 and leave a normal carry-over at the beginning of the following season, or a total pack of not more than 15,500,000 cases in 1935, would not seem excessive.

A planting of approximately 310,000 acres, or an acreage slightly less than that of 1934, under average growing conditions would give a pack of 15,500,000 cases. Such a planting would not differ greatly from the 5-year average of 1928-32. Plantings in 1934 were increased 53 percent over the small acreage of 1933, and, had average growing conditions prevailed, would have resulted in an excessive supply for the 1934-35 marketing season. But as a result of damage from drought and heat, the yield per acre in 1934 was reduced to the lowest point on record and the threat of an excessive pack was eliminated.

GREEN PEAS FOR CANNING

Judging from the total supply of canned green peas available for the 1934-35 marketing season ending April 30, it appears that canners will continue to receive relatively high prices for canned peas during the remainder of the season and will enter the 1935-36 season with a comparatively small carry-over. For this reason, contract prices to growers for tonnage in 1935 will probably average higher than those of 1933, and may exceed the 1934 level. But in planning their acreages for 1935, canners and growers should bear in mind that acreage in 1934 was increased nearly 30 percent, and, under average growing conditions, would have produced a pack from 4,000,000 to 5,000,000 cases in excess of the pack actually obtained, and probably would have resulted in an unusually large carry-over at the beginning of the 1935-36 season. Should an acreage equal to that of 1934 be planted in 1935, the same threat of excessive supplies and lower prices will face both canners and growers.

The total pack of green peas in 1934 was equivalent to 15,742,000 cases of 24 no. 2 cans compared with a pack of 12,893,000 cases in 1933, and with a 5-year average of 16,432,000 cases for the period 1928-32. These figures do not include quantities of soaked peas which are packed each year. The total supply of canned green peas for the 1934-35 marketing season, including carry-over on May 1, was probably around 16,700,000 cases. For 1933-34 the total supply was estimated at 15,700,000 cases, and for the previous five seasons, 1928-29 to 1932-33, it probably averaged around 20,600,000 cases. The lowest supply in recent years was 15,000,000 cases, in 1932-33; the largest supply, totaling 25,500,000 cases, was in 1930-31, and followed exceptionally large packs in 1930, 1929, and 1928.

The disappearance of canned green peas from canners' hands during 1933-34 was about 14,700,000 cases. In 1932-33, following the small supplies and curtailed purchasing power of that season, disappearance was only 12,200,000 cases. For the preceding 5-year period, 1927-28 to 1931-32, disappearance averaged about 17,000,000 cases. During the last three seasons exports were less than 100,000 cases annually and imports were almost negligible.

Judging from the present rate of movement from canners' hands, consumption during 1934-35 will probably be larger than that of 1933-34 and may exceed 15,000,000 cases. Under these circumstances, the total carry-over will be less than 1,500,000 cases, or considerably below average. Assuming a similar or somewhat improved demand for the 1935-36 season, it appears that a pack

not exceeding 16,000,000 cases in 1935 would meet consumption requirements without the danger of an excessive carry-over at the beginning of the 1936-37 season.

Under average growing conditions, a planting of 210,000 to 220,000 acres (a decrease 20 to 25 percent below the 1934 acreage but close to the 5-year average of 1928-32) would be sufficient to produce a pack of 16,000,000 cases. Should the unusually low average yields of the last four seasons be repeated in 1935, however, a planting of about 280,000 acres, or an acreage equal to that of 1934 would be required to produce this pack. Making some allowance for the possible recurrence of lower-than-average yields in 1935, it seems that a planting of 240,000 acres, or 15 percent less than the 1934 acreage, would be sufficient to meet consumption requirements and leave a normal carry-over.

TOMATOES FOR CANNING

It appears that the 1934-35 marketing season will be fairly satisfactory to the canners of tomatoes, in regard to the marketing of their commodity. This situation, however, may be reversed by the planting of an unduly large acreage in 1935, with the resulting threat of a burdensome supply for the 1935-36 marketing season. This threat of an excessive pack was averted in 1934 only by a reduction of yield per acre by drought and excessive heat in some areas and by excessive rains in others. The acreage planted in 1934 was nearly equal to the record high acreage of 1930, when a total of 408,000 acres was planted for canning and manufacture. An acreage in 1935 slightly above the 5-year average (1928-32) but 15 to 20 percent below the large planting of 1934, would give, under average growing conditions, a pack sufficient for probable consumption requirements for the 1935-36 marketing season.

Although no estimate is yet available on the average seasonal price paid to growers of tomatoes for canning and for the manufacture of tomato products in 1934, this price will probably be somewhat higher than the relatively low prices of 1931, 1932, and 1933. This assumption is based upon the close relationship in recent years between the wholesale prices of canned tomatoes in December and January and contract prices to growers the following season. Wholesale prices of canned tomatoes in December and January preceding the 1934 season were 35 percent higher than the low level of the preceding December and January. During 1934 they have been fairly well maintained, and at present (October 1934) they are about 8 percent above the average of last December and January, although they are still considerably below the December and January averages preceding the 1929 and 1930 seasons. Judging from the present wholesale price level of canned tomatoes, contract prices to growers in 1935 may equal or exceed those of 1934.

Estimates of production on October 1 indicate that the total pack of canned tomatoes in 1934 will be equivalent to approximately 14,500,000 cases of 24 no. 3 cans, compared with a pack of 11,986,000 cases in 1933 and with an average of about 12,300,000 cases for the 5-year period 1928-32. Total supplies of American canned tomatoes, including carry-over stocks on August 1, will probably be around 15,200,000 cases for the 1934-35 marketing season, compared with 13,200,000 cases in 1933-34, and with an average of 14,300,000 cases for the five preceding seasons.

The disappearance of domestic tomatoes from canners' hands was about 12,500,000 cases during 1933-34, 12,900,000 cases for the 1932-33 season, and averaged 12,700,000 cases for the five preceding seasons. The lowest disappearance in recent years amounted to 10,600,000 cases for the 1931-32 season, and the highest was in 1930-31, when it reached a total of about 15,000,000 cases.

In addition to this apparent consumption of domestic canned tomatoes, an average of about 1,600,000 cases of equivalent no. 3 cans was imported into the United States annually during the last four seasons. This quantity has remained fairly constant since the peak imports of nearly 3,000,000 cases in 1929-30, after which the higher tariff duties went into effect. Exports during the last four seasons averaged 67,000 cases annually.

Unless the consumption of American-canned tomatoes in 1934-35 is larger than it has been in recent years, it appears that the carry-over at the beginning of the 1935-36 marketing season would be around 2,500,000 cases, a quantity exceeding the carry-over of the last three seasons but less than at the beginning of the 1930-31 season. It would seem that a pack not in excess of 13,000,000 cases in 1935 would be sufficient, with the probable carry-over, to fill con-

sumption requirements and avoid the possibility of an excessive carry-over into the following season. Under growing conditions approaching the average of the 5-year period preceding 1933, it would require a total of 320,000 to 340,000 acres, or slightly above the 5-year average acreage, to produce a pack of 13,000,000 cases, allowing approximately one-half of this acreage for the manufacture of products other than canned tomatoes, such as tomato juice, soups, sauces, catsup, and similar products.

FRUITS

Production of fruits in general probably will continue to expand, as present nonbearing acreage comes into bearing and as young acreage now in production increases in producing capacity. This is particularly true of citrus production and to a lesser extent of cherries, pears, and grapes. Owing to some improvement in consumer purchasing power and to slightly reduced total fruit production, prices of fruits in general have advanced slightly from the low levels of 1932 and have given orchardists of the country renewed hope. Some reductions of marketing and production costs have contributed to increased returns to fruit growers, which has resulted in better care of commercial orchards in most of the better producing areas. The more distant producers, however, still have the disadvantage of relatively high transportation costs.

Last winter's severe weather caused considerable loss of fruit trees in the Northeastern States and reduced 1934 production materially in nearly all of the eastern half of the country except in the Southern States. Losses of Baldwin apple trees were most severe in New York and in the New England States, while nearly all varieties received considerable injury. Drought damage to fruit trees in the Middle West is still an uncertain factor in the fruit outlook for that section. Tree losses probably will be replaced in commercial orchards, but many of the old farm orchards will be permitted to die out.

Numbers of fruit trees in farm orchards all over the country have been declining rapidly in recent years through neglect and abandonment, and further losses from unusually severe weather conditions last winter will hasten their reduction. On the other hand, commercial orchards generally are receiving good care, and tree plantings, although still moderate, have increased somewhat from the low rate of the two or three preceding years. During recent years, shifts to the more popular varieties have continued and have resulted in adjustments of production to changing market demand. In the areas adjacent to markets there has been a tendency toward more diversification to supply local consumers with a greater number of fruits and varieties over a longer season.

Prices of all fruits declined sharply from 1929 to 1932, partly because of increased production but largely because of reduced consumer purchasing power. During this period it was almost impossible for the fruit grower to cut costs as fast as prices declined and, as a result, orchardists suffered heavy losses. Cash outlays at the orchard were reduced close to a minimum, which resulted in actual neglect of trees in many instances. Freight rates were not reduced in conformity with the declining prices and therefore, the cost of getting the fruit to the more distant markets took an increasing proportion of the consumer's dollar. This reduced the grower's return severely. During the last two seasons, 1933 and 1934, market prices of most fruits have risen somewhat and there have been some downward adjustments in transportation costs, so that most fruit growers have received somewhat higher returns than was the case in 1932.

Owing primarily to the rapid increase in citrus production during the last 15 years, the combined production of all fruits has increased about 20 percent. The increase during the last 10 years has been at the rate of about 1 percent per year. There has been a slight downward trend in apple production since about 1930, largely because of the unfavorable weather in 3 of the last 5 years. With more favorable weather during the next few years, production of apples can be expected to average somewhat higher. The production trend of pears and cherries is sharply upward. Production of citrus fruits, particularly oranges and grapefruit, is likely to continue to increase sharply during the next 5 or 10 years. The trend of peach and grape production is slightly downward. There are still sufficient acreages of nearly all kinds of fruits now in commercial orchards, however, to continue to produce surplus commercial supplies in years of favorable growing conditions.

On a per capita basis, production of all citrus fruits for the 5 years 1919-23 average 29 pounds, as compared with 42 pounds, the average for the period

1929-33. Orange production increased from 21 pounds per capita in the former period to 29 pounds in the latter period, grapefruit increased from 5 to 9 pounds, and lemons from 3 to 4 pounds. A similar comparison for other fruits shows that apple production declined from an average of 72 pounds per capita in the 1919-23 period to an average of 60 pounds in the 5 years 1929-33, while grapes increased slightly from 32 to 33 pounds. Per capita production of peaches decreased from 21 to 20 pounds, and pears increased from 7 to 9 pounds, thus making a net increase in the per capita production of these seven fruits from 161 to 164 pounds. Imports of bananas averaged 24 pounds per capita in the 1919-23 period, compared with 26 pounds in the 1929-33 period.

THE EXPORT OUTLOOK

Fruit exports from the United States during the next few years will depend to a considerable extent upon a modification of trade barriers in foreign countries. Reciprocal trade treaties are now being negotiated although at present negotiations have not begun with the countries that are the most important export outlets for United States fruit.

In the last decade, approximately 10 percent of the commercial United States fruit crop was exported, but the proportion of some products has been much higher. About one-third of the pack of dried fruits is exported and close to one-fourth of the pack of canned fruits. About 16 percent of the commercial apple and pear crops move into export and 7 percent of the citrus production. In recent years, fruit exports have been second or third in importance among the agricultural exports of the United States.

There appears to be an upward trend in world fruit production, particularly in exporting countries. Canada, Australia, and New Zealand have rapidly increased apple exports during late years, and, to a lesser degree, pear exports. Palestine, South Africa, and Brazil have been especially active in increasing citrus exports. Australia has greatly increased raisin and currant exports during the last decade and, together with South Africa, has become a factor in dried and canned tree-fruit exports. Malaya and Taiwan have developed a considerable pineapple export trade.

There has been an upward trend in demand for fruits in foreign markets and the high quality and uniform pack of United States fruit have given it an advantage over fruit from most of the competing countries. This preference can be maintained only by constantly improving the export product. Fruit produced in the British Empire has had a decided trading advantage since the adoption of the Ottawa agreement in 1932 which permits entry of Empire fruits free of duty.

CITRUS FRUITS

The number and age of orange and grapefruit trees in the United States indicate increasingly heavy supplies, particularly of grapefruit. Over a period of years it does not seem probable that demand for citrus fruit, particularly grapefruit, will increase so rapidly as available supplies. Of the total of approximately 754,000 acres of oranges and grapefruit, about one-sixth is not of bearing age and about one-half the trees of bearing age are less than 15 years old and have not reached full bearing capacity. The upward trend in production is therefore expected to continue unless changed by damage to trees from storms, freezes, or other causes. Plantings in the last 2 years have been at a somewhat slower rate than in the preceding 2 or 3 years. The bearing acreage of lemons has been fairly constant since 1925 but has increased slightly in the last year.

During the 4 years ended in 1934, orange and grapefruit production averaged 68,000,000 boxes compared with 44,000,000 boxes in the 4 years 1924-27, or an increase of more than 50 percent. The estimated production in 1934-35 of nearly 77,000,000 boxes of oranges and grapefruit is roughly equivalent to 46 pounds per capita for the population of the United States. With the trees now in groves it would be possible, under favorable weather conditions, to reach a production of 90,000,000 to 100,000,000 boxes within a few years.

Cost of citrus production per acre has shown a downward trend from 1930 to 1933. Data procured by the California Citrus League indicate that the cost of producing oranges up to picking time in 1933 was about 55 percent of the cost in 1930 and that of lemons about 67 percent. Figures obtained by the agricultural extension service of the University of Florida from records kept by growers indicate that the per-acre cost of producing citrus fruit, mostly

oranges and grapefruit, up to picking time, excluding interest and depreciation, in 1932-33 was about 75 percent of that in 1930-31. The low point was perhaps reached in 1933, since which time cost per acre has increased.

A marked increase in the demand for oranges and grapefruit occurred from 1921 to 1929. The demand then fell off sharply owing to the decline in consumer purchasing power, which with increased production forced prices to very low levels. During the last season, prices were slightly higher than in the preceding season, chiefly because of smaller supplies. The higher prices of staple food products will make it more difficult to continue the expansion of citrus consumption among families with small incomes.

Foreign markets have usually taken about 7 or 8 percent of the United States orange and grapefruit crop in recent years. Canada and the United Kingdom are the principal countries receiving United States citrus fruit. Under current exchange rates, tariff on United States shipments to Canada is about 70 cents per box on both oranges and grapefruit, and to the United Kingdom it is approximately 75 cents per box on grapefruit, and on oranges 55 cents per box from April 1 to November 30 and 10 percent ad valorem during the remainder of the year.

Increased competition in the world markets may be expected, because of increasing production of oranges and grapefruit, particularly the latter. The average world production of lemons will probably continue for some years at about the present level.

The outlook for the 1934-35 season is for large supplies of citrus fruit. The October 1 estimate indicated a crop of oranges and grapefruit 25 percent greater than last season and 30 percent greater than the 5-year average, 1927-31.

To improve marketing conditions, marketing agreements are being adopted and put into operation in California, Arizona, Florida, Texas, and Puerto Rico under authority of the Agricultural Adjustment Act. With these agreements an attempt is made to avoid glutting markets to a point at which prices become so low that producers actually lose money on some of their fruit and receive relatively little for the remainder.

The operation of the marketing agreements in the citrus industry is intended to stabilize the market, improve the quality of the fruit moving into consumption, reduce the risk from violent market fluctuations, and move oranges and grapefruit into consumption at a higher average price than would prevail without a program. Experience in the operation of citrus-marketing agreements for the 1933-34 season indicates that such agreements may be of substantial benefit to citrus growers.

ORANGES

Orange acreage in the United States is roughly 539,000 acres, of which about 88 percent is of bearing age. About two-fifths of the bearing acreage is less than 15 years old.

California has approximately 235,000 acres in oranges, 90 percent of which is in bearing. Trees are in good condition. About 100,000 acres in California are Washington Navel and miscellaneous varieties which are marketed mainly from November to April. About 6 percent of these trees are not of bearing age. The Valencia variety, which is marketed largely from May to October, makes up 135,000 acres, with 12 percent not yet in bearing. Some further expansion in the bearing acreage of Valencias is indicated for the next few years, as contrasted with an approximately stable acreage of bearing Washington Navels and miscellaneous varieties.

Florida has about 263,000 acres in oranges and tangerines. Plantings are moderate but are at a higher rate than 2 years ago. Most trees are receiving good care. Early oranges, marketed mainly from October to February, make up about half of the total acreage, with 15 percent not of bearing age. Late oranges marketed mostly from March to July comprise about 40 percent of the acreage, of which 13 percent is not yet in bearing. Tangerines, for which the market season is roughly November to April, make up about 10 percent of the acreage, with only 3 percent under bearing age. Of the total bearing acreage of oranges and tangerines in Florida about three-fifths is under 15 years old.

Texas has about 28,000 acres of orange trees, of which approximately one-fourth are not of bearing age. In Alabama, Mississippi, and Louisiana production is largely of Satsumas. Acreage in these three States and Arizona is about 12,000, with one-fifth not of bearing age.

Orange production in the United States averaged about 48,000,000 boxes from 1929 to 1933, an increase of nearly one-fourth over the production of the preceding 5 years. The average of the 5 years 1934-38 is likely to show a further increase owing to the large number of trees that will have a greater bearing capacity as they approach 15 years of age. The crop forecast for 1934-35 of 57,000,000 boxes is the largest on record.

The orange export season is divided into two periods—the winter season, November to April, and the summer season, May to October. Exports from the United States, which usually approximate 7 or 8 percent of the crop, go mainly to Canada during the winter season and to Canada, the United Kingdom, and other European countries during the summer season. All during the year relatively small quantities are exported to certain Latin American and Asiatic countries. About two-thirds of the annual exports go to Canada and one-fifth to the United Kingdom. The remainder is usually about equally divided between continental European countries, and Latin American and Asiatic countries.

Oranges are not exported to Europe in any considerable volume during the winter season, because the large winter orange exports from the Mediterranean countries and from Palestine dominate the markets. Exports from these countries are increasing. Most of the exports of summer oranges from the United States are Valencias from California.

Brazil and South Africa are increasing their exports of oranges during the summer season. These practically all go to Europe, especially the United Kingdom, where South African oranges enter duty free.

More competition may be expected in foreign markets. In years of large Brazilian and South African orange crops exports from the United States to Europe during the summer season will be light. United States oranges are also meeting more competition in Canada throughout the year from duty-free Empire oranges from South Africa, Jamaica, and from Palestine.

The proportion of the crop exported in 1933-34 was about average, amounting to around 3,300,000 boxes, a somewhat smaller quantity than in the preceding year. The larger orange crop expected in the United States for 1934 indicates that exports may be somewhat heavier during 1934-35, especially during the summer season.

Puerto Rico produces around 1,000,000 boxes of oranges a year, but a large proportion of the fruit is in small holdings or is allowed to grow wild. Consequently exports, mostly to the United States, are important only in years of high prices. In the last three seasons shipments to this country from Puerto Rico have ranged from 15,000 to 40,000 boxes.

GRAPEFRUIT

There are approximately 215,000 acres of grapefruit trees in the United States, distributed as follows: Florida, 43 percent; Texas, 42 percent; and California and Arizona, 15 percent.

Of Florida's 93,000 acres of grapefruit, about 60 percent is classed as "early" and moves to market mostly from September to February, and the remainder is classed as "late." Of the early, 6 percent is under bearing age, compared with 15 percent for the late. For both classes of bearing trees in Florida about 55 percent is under 15 years old.

Texas has about 91,000 acres, with 38 percent not yet in bearing. It is estimated that 500,000 trees (including some trees other than grapefruit) were lost as a result of the storm of September 1933. Plantings in Texas have been at a slower rate during the last 2 years. The 276,000 grapefruit trees set out in the year ended March 31, 1934, compared with 402,000 the preceding year and 949,000 the year before that. In California nearly one-fourth and in Arizona about one-half of the acreage is not yet in bearing.

There has been a rapid increase in grapefruit production. In the 5 years 1929-33 the average production of 15,000,000 boxes was almost 50 percent greater than the average of the 5 years 1924-28. The 1934-35 crop, forecast at slightly less than 20,000,000 boxes, is of record size. With about one-fourth of the country's grapefruit trees not yet in bearing and with three-fourths of the bearing trees under 15 years, further increases in the size of the crop over a period of years may be expected.

The canning industry is an important market outlet for grapefruit. About 20 percent of the 1933-34 Florida grapefruit crop was canned as grapefruit hearts or juice. From 1925-26 to 1930-31 canning of grapefruit hearts increased

nearly sixfold to 2,412,000 cases of 24 No. 2 cans. There was then a decline to about 900,000 cases in 1931-32. In each of the last two seasons the pack was about 2,200,000 cases. The pack of grapefruit juice has averaged about 500,000 cases in the last four seasons. The 1933-34 pack of 610,000 cases of juice was less than the 726,000 cases packed the preceding year, but was considerably greater than the quantity packed in either 1930-31 or 1931-32. Some canning and processing of grapefruit is developing in Texas, but as yet the pack there is only a small percentage of that produced in Florida. There is apparently an upward trend in consumption of juices, including grapefruit, tomato, prune, and pineapple juices.

World grapefruit production is sharply upward. A few years ago grapefruit were received in the United Kingdom, chiefly during the winter months, from United States, Puerto Rico, Cuba, and Jamaica. Now they are received in important quantities throughout the year from many countries. Grapefruit from the United States, Puerto Rico, and Cuba arrive the year around. Palestine and Jamaica supply important quantities during the winter months with lesser quantities from Trinidad, British Honduras, Honduras, Spain, and Italy. South Africa, Brazil, Southern Rhodesia, Mozambique, Australia, and Argentina supply grapefruit throughout the warmer months.

Competition in the export markets may be expected to increase for at least a decade. In European countries other than the United Kingdom the per-capita consumption of grapefruit is very small, and any appreciable increase in consumer interest would tend to relieve the situation.

Around 1,000,000 boxes of grapefruit were exported from the United States in 1933-34 (September to August) out of the 14,243,000 boxes produced. This was about the average proportion, or 7 percent. As usual the United Kingdom took around 55 percent and Canada 35 percent. For the most part, shipments to continental European countries increased, although they continued to be small. Exports are likely to be somewhat larger from the crop of 19,662,000 boxes forecast for 1934-35. From a price standpoint the export outlook is not promising.

In addition to the fresh grapefruit exported, a large quantity of the grapefruit that is canned moves into export. This trade is increasing rapidly. Exports in 1933-34 amounted to 767,000 cases, which is equivalent to 27 percent of the Florida pack of 2,795,000 cases (24 No. 2 cans) of hearts and juice. Practically all the exports went to the United Kingdom and small quantities went to a number of other countries; the most important of these was Canada, which took a little over 5,000 cases.

Since a case of canned grapefruit is roughly equal to a box of fresh grapefruit, it can be seen that almost as much of the grapefruit crop was exported in the canned state as fresh. Taken together, the exports of fresh and canned grapefruit were equal to about 12 percent of the total United States grapefruit crop. The export outlook for canned grapefruit is more favorable than for the fresh fruit.

Grapefruit production in Puerto Rico has fluctuated rather widely during the last 7 years, or roughly, from 300,000 to 1,400,000 boxes, principally because of hurricane damage. Fresh shipments to the United States have averaged about 540,000 boxes and around 36,000 boxes have been shipped direct to foreign countries. A little less than 200,000 cases of canned grapefruit have been produced a year, most of which were shipped to the United States.

The 1934-35 Puerto Rican crop is expected to be about the same size as the 1933-34 crop, or something over 800,000 boxes. By January 1, 1935, probably about one-third of the crop will have been marketed. Since the late crop is running to small sizes, exports to Europe are likely to be heavier than usual next spring.

LEMONS

California lemon trees have received proper care and are in good condition. Growers are encouraged by the returns of recent years, which have been favorably influenced by unusually high temperatures in the consuming markets. There has been considerable planting during the last few seasons, which will probably be reflected in increasing production during the next 4 or 5 years. Of the approximate 49,000 acres in the State, one-seventh is not of bearing age. Bearing acreage has not changed greatly since 1927. California production is at a level at which, in years of average growing conditions, a portion of the crop cannot be marketed as fresh fruit at remunerative prices.

Imports of lemons are now of little importance, chiefly because of the tariff of 2½ cents a pound. Imports from Italy, the chief source, have declined from an average of about 700,000 boxes prior to 1930 to 50,000 boxes during the last season. Exports of lemons have averaged less than 5 percent of the crop in recent years, and about four-fifths of the exports usually go to Canada. In the 10-month period, November to August 1933-34, total exports have been equal to 192,000 boxes, or somewhat above exports in the same period in 1932-33 but below those of the two preceding seasons.

APPLES

With average weather conditions, and average care of orchards, production of apples during the next 5 years probably will be equal to and may exceed the somewhat lower-than-average production of the last 5 years. However, because of recent excessive damage from drought and cold weather, and continued heavy deterioration and removal of farm and generally unprofitable commercial orchards, accompanied by very little planting of trees during the last 5 years, moderate replacements and plantings will be necessary to maintain the present volume of production 10 to 15 years from now.

Indications are that exporters of apples from the United States may expect increased competition in foreign markets, since foreign countries are working toward increased production and improved quality of apples. Recent tendencies of many countries to impose trade restrictions is an unfavorable factor in the export outlook, but efforts are being made to offset these restrictions by trade agreements. The final success of these efforts cannot be determined at this time.

Keen competition from fruits that compete with apples, especially citrus fruits, is expected to continue.

DEAD AND DAMAGED TREES

A preliminary report on winter damage to fruit trees issued by the New York State Department of Agriculture and Markets, in cooperation with the Bureau of Agricultural Economics, shows 1,458,000 apple trees killed and 2,335,000 additional trees injured in New York during the winter of 1933-34. About 22 percent of the dead trees and 17 percent of the injured trees were reported to have passed their period of economic usefulness before December 1933. Winter killing and injury were relatively greater in farm orchards than in commercial orchards. Trees of bearing age were most severely affected. The number of trees of bearing age that were reported as killed amounted to 17.4 percent of the total number of bearing trees in New York on January 1, 1933. Only 4.4 percent of the number of nonbearing trees as of that date were reported as killed. In addition 26.3 percent of the number of trees of bearing age in New York and 12.7 percent of the number of nonbearing age were reported as injured by the cold winter.

Reduction in the total bearing surface was greatest for Baldwins, although Greenings suffered severely. The McIntosh, naturally hardy, with very few old trees, came through the winter remarkably well, as did trees of the Wealthy and Oldenburg (Duchess) varieties.

In New England the apple industry also suffered injury from the cold winter of 1933-34. An inquiry made by the Bureau of Agricultural Economics in July 1934 indicated at that time that the percentage of apple trees that were killed or were expected to die as a result of the freeze were as follows: Maine, 44 percent of the total; New Hampshire, 13 percent; Vermont, 10 percent; Massachusetts, 4 percent; Rhode Island, 7 percent; Connecticut, 6 percent. Baldwin trees, the most extensively planted variety in New England, were most seriously affected. In Maine 72 percent of the Baldwin trees were dead or were expected to die. In New Hampshire the percentage was 22; in Vermont, 50; in Massachusetts, 11; in Rhode Island, 7; and in Connecticut, 13. Practically all varieties showed some injury. McIntosh, the second variety in importance, showed little injury, with trees dead or expected to die at 3 percent of the total in Maine and 1 percent of the total in Vermont.

In addition to these losses about 225,000 apple trees, largely in neglected orchards, were removed in Massachusetts during the winter of 1933-34 for the purpose of apple-maggot control. Some trees were also removed in Maine for the same purpose.

In Pennsylvania winter-killed trees are estimated at but 1 percent of the total and winter damaged at only 6 percent. Estimates of winter killing of trees of bearing age in Michigan range from 5 to 10 percent and occurred mostly in the less favorable fruit-growing areas. Trees of the Baldwin, Wagener, and Grimes Golden varieties were most severely affected in Michigan. In Ohio no extensive damage from the winter of 1933-34 has been reported.

In some of the Central States damage to apple trees from drought is indicated, but for the region as a whole the drought will probably have little effect on future production. In sections of the Rocky Mountain States damage from short water supply for 1 or more of the last 3 years is reported, but is generally considered of a temporary nature, adversely affecting yields of the last 3 years more than those of the future.

Although the full extent of damage to apple orchards from the severe winter of 1933-34 and the drought of the last few years cannot be fully measured at this time, it appears that from 3,000,000 to 3,500,000 apple trees have been killed or are so badly damaged that they will no longer be a factor in production. Perhaps as many more were more or less severely damaged. Probably 90 to 95 percent of the dead trees were of bearing age. Their removal from production will, at average yields, reduce future production of apples by 5,000,000 to 6,000,000 bushels per year, or about 3.5 to 4 percent of average production during the last 5 years.

TREE REMOVALS AND PLANTINGS

From 1910 to 1925 there was a net decrease of 79,000,000 apple trees in the United States. From 1925 to 1930 there was another decrease of 21,000,000 trees, making a total decrease of 100,000,000 trees, or 46 percent in the 20-year period 1910-30. It is estimated that since 1930 a further decrease of at least 18,000,000 trees has occurred (dead trees as a result of the freeze during the winter of 1933-34 are included in the estimated decrease). Thus it is believed that the agricultural census of 1935 will show the total number of apple trees to be less than one-half of the number reported in 1910 and not over 70 percent of the number listed in 1925. The total number probably will not greatly exceed 95,000,000 trees.

During the 3 census years 1920, 1925, and 1930 apple trees of bearing age constituted about 75 percent of all apple trees. Even allowing for the relatively high mortality of trees of bearing age in the winter of 1933-34, it is believed that the proportion of bearing trees to all trees has increased to about 80 percent.

Because of the large number of trees in orchards that were set during the period 1905-12, a relatively large proportion of trees have reached maximum bearing capacity. It is probable that production from this body of trees will begin to decline about 1945. Tending to offset this decline is production from another relatively important body of trees planted soon after the World War, which will be close to maximum bearing capacity about 10 years from now. Increased production from this younger group of trees probably will not quite offset production from the older group 10 years from now, considering tree removals and plantings of the last 5 or 6 years.

Although no measure is available of apple-tree plantings during the last 5 years, it is apparent that they have not been sufficient to maintain the number of trees reported in 1930, and probably not sufficient to maintain the number now in orchards. Low prices for apples and lack of funds during the depression years have undoubtedly resulted in unusually light plantings, but during the present year a few indications of renewed interest in apple growing have been apparent. Instances of increased demand for good orchard land have been reported. Demand for nursery stock has increased somewhat over that of the last 2 years, when sales were very low.

With the exception of orchards that have been injured by cold weather and drought, those that have produced fair to good crops have been generally well cared for during the last 5 years and are in fairly good condition. Reports from some sections indicate better care in 1934 than in 1933. Commercial orchards that have not produced well because of poor locations have deteriorated. Throughout the country farm orchards are deteriorating more rapidly than usual.

Apparently the general tendency is for commercial orchardists to do the best they can in caring for their orchards until economic conditions improve. Once

improvement is substantially under way, the bearing capacity of many orchards may be expected to increase as a result of better care.

Such plantings as are being made are composed largely of McIntosh and of color strains of Delicious, Winesap, Jonathan, Stayman Winesap, and Rome Beauty. Of the young trees now in orchards, a relatively large proportion are of these varieties.

PRODUCTION AND PRICES

During the 5-year period 1911-15 production of apples averaged about 216,000,000 bushels per year, which was 30 percent more than the average from 1917 to 1931. This tremendous production was the combined result of earlier expansion in plantings, and good growing conditions during 4 of the 5 seasons. Production was so heavy that many apples were not harvested. Thereafter production declined rapidly, and, with the exception of seasonal variations, was fairly stable from 1917 to 1931 at about 165,000,000 bushels.

During the last 5 years, 1930-34, production has averaged about 151,000,000 bushels per year, a decrease of 6 percent below the average of the previous 5 years. However, only a small part of this reduction was the result of decreased bearing capacity. Because of unusual drought conditions and the severe freeze of 1933-34, growing conditions were below average, whereas during the previous 5 years growing conditions were better than average. This difference may easily account for two-thirds or more of the 6-percent decrease in production during the last 5 years as compared with the previous 5 years.

Although the number of apple trees of bearing age has decreased 20 to 25 percent during the last 10 years, potential producing capacity of all orchards has been maintained by an increase in average yield per bearing tree of 25 to 30 percent. Allowing for variations in growing conditions, average yield per bearing tree increased from 1910 to 1934 about 50 percent, and during the last 5 years would average nearly 2 bushels per bearing tree under average growing conditions. Because of unfavorable weather and orchard neglect, however, the actual yield during this period was probably about 1.7 bushels per bearing tree.

Although average production for the last 10 years of about 156,000,000 bushels has been only 72 percent of the average crop of 1907-11, there has been, on the average, no shortage of apples. On the other hand, supplies were burdensome in years of good growing conditions throughout the apple country.

Apple prices declined sharply from 1929 to 1932, largely because of declining consumer purchasing power. Prices advanced from an average of 63 cents per bushel to the grower for the 1932 crop to 80 cents for the 1933 crop, although there was little difference in supplies during the 2 years. Owing to a reduction in the crop of 1934, prices are averaging still higher this season. The United States farm price on October 15, 1934, averaged 84.4 cents per bushel, compared with 70.3 cents the year before. The advance in prices during the last 2 years has been substantial in most sections of the country. Apple prices to growers in the New England States averages \$1.34 per bushel on October 15, 1934, compared with 79 cents a year earlier; in the Middle Atlantic States 95 cents against 79 cents; in the East North Central States 92 cents as compared with 78 cents in October 1933; in the West North Central area \$1.12 against 76 cents; in the South Atlantic section 80 cents against 62 cents; in the East South Central States 84 cents as compared with 67 cents the year before; in the West South Central group 83 cents against 72 cents; in the Mountain States the October 1934 average was 84 cents compared with 70 cents at the same time last season, and in the Pacific Coast States 73 cents against 64 cents.

REGIONAL PROSPECTS

WESTERN STATES

During the last 5 years, 1930-34, the 11 Pacific Coast and Rocky Mountain States produced 54,000,000 bushels of apples per year, or 36 percent of the United States total. They produce a higher proportion, about 45 percent, of the commercial crop of the country. Low prices for apples have resulted in noticeable neglect of orchards in the poorer fruit districts of these States and have increased the difficulty of western growers in marketing, since a large part of the crop is shipped to distant markets. Notwithstanding difficulties encountered, production in these States during the last 5 years has averaged only 3.5 percent less than during the previous 5-year period.

In general, commercial orchards in the better districts of the Western States have been well cared for. Plantings have been light and removals have been confined largely to orchards on unprofitable locations, to trees of unpopular varieties, and to trees that are set too close considering their present size. The few plantings that have been made in the last few years are confined largely to Delicious and Winesap. Rome Beauty and Yellow Newtown (Albemarle Pippin) have been planted to some extent. In California the limited plantings that have been made were largely of the Delicious, White Pearmain, and Yellow Newtown.

In Washington, production of the Winesap has probably reached a stationary level, production of Delicious will continue to increase for several years, and production of Rome Beauty is expected to show a slight increase. Production of Jonathan, Stayman Winesap, and Esopus Spitzenburg is declining. In California, production of early apples is expected to increase, and production of late apples probably will continue to decline at a slow rate. In Oregon, production probably will tend downward during the next several years. In the Mountain States, as a whole, production is expected to decline.

In the 11 Western States, as a whole, a relatively small percentage of the trees are yet to come into bearing, and a relatively large percentage have reached, or soon will reach, full-bearing capacity. Under average growing conditions the trend of production may be slightly downward during the next few years.

CENTRAL STATES

Production of apples in the Central States averaged about 58,000,000 bushels per year during the last 5 years, 1930-34, which was about 39 percent of the total United States crop. This was 11 percent less than average production during the previous 5 years. A part of this decrease was caused by unfavorable weather conditions, and a part by curtailed production expenditures and further deterioration of farm orchards. During the period of heavy plantings in the Northwest, 1905 to 1912, many millions of trees were planted in the Central States. The region as a whole is subject to frequent frosts and freezes, and many of the early plantings were on unfavorable locations and have been removed. Thus, from 1910 to 1930 the decrease in the number of apple trees in the Central States amounted to about 73,000,000 trees, or 60 percent. Since 1930 there has probably been a further decline of about 7,000,000 trees, leaving in the region at present about 42,000,000 trees of all ages, or 42 percent of all apple trees in the United States.

Many of the trees now in orchards were planted since the World War. Consequently, a relatively large part of the trees are young. According to the agricultural census, nearly one-third of the trees had not reached bearing age in 1930. The more recent plantings have been of the Delicious, Winesap, Jonathan, Stayman Winesap, and Yellow Transparent. The newer orchards as a whole are more favorably located than were many of the early plantings. With average weather conditions commercial production for the region as a whole can be maintained, and probably increased, with moderate annual plantings. This region contains a great many farm orchards, however, that are being allowed to deteriorate rapidly. This tendency, which probably will continue, may at least offset any increased production from commercial orchards until prices of apples again become attractive.

EASTERN STATES

During the last 5 years, 1930-1934, the Eastern States, which include the New England, the Middle Atlantic, and the South Atlantic States, produced about 38,500,000 bushels of apples per year, or 25 percent of the total United States crop. Production during these 5 years was only 2 percent less than the average for the previous 5 years.

At the beginning of the present depression the apple industry of this region was better equipped for economical production of fruit than at any time in many years. Many unproductive orchards had been removed and those that remained were generally well cared for, and were planted largely to such varieties as Delicious, McIntosh, Winesap, Stayman Winesap, Rome Beauty, Grimes Golden, York Imperial, Baldwin, Northern Spy, Rhode Island Greening, Wealthy, and some of the early varieties. The region as a whole contained a large proportion of trees that had not come into full bearing. During the last 2 or 3 years orchards that have not been generally profitable have received less

than average care, but partly because of nearness to large consuming centers, many orchards have received very good care. Recent plantings have been light, and to the present year removals have been at a normal rate.

During the unusual freeze of the winter of 1933-34 at least 2,500,000 trees were killed or were injured so badly that they are expected to die and many more were severely injured. The dead trees have probably reduced the future potential bearing capacity of orchards in the region by 4,000,000 or 5,000,000 bushels per year, or 10 to 12 percent of average production during the last 5 years. This is only about 3 percent of average production in the United States during the same period. However, the decrease may be considerably larger because of injury to trees that are not dead.

Indications are that during the coming season replacements of dead trees in some sections will be rather large and in other sections they will be light. At best it will be several years before trees can be brought into bearing to replace production of the killed trees. With comparable growing conditions it is doubtful whether production of apples in the Eastern States will be maintained during the next few years at as high a level as during the last several years. From a longer viewpoint, the potential bearing capacity of orchards in the region may decline somewhat, unless they are cared for better, since a relatively large part of the trees are nearing full bearing capacity. Because of the heavy mortality of Baldwin trees during the cold winter of 1933-34, supplies of this variety will be exceptionally low at least for many years.

EXPORT MARKETS

Owing to the short North American apple crop, and consequently prospective higher prices as compared with last year, and to the moderate to large apple crops in Europe, as well as trade restrictions recently put into effect by Germany, the volume of exports from the United States is likely to be less during the 1934-35 season than during 1933-34. The United States commercial crop for 1934-35 is estimated at about 68,800,000 bushels, which is about 8 percent less than the commercial crop of 1933-34. Because of the moderate-to-large European crops, the export movement has been slow in starting and total volume for the season probably will be less than the 12,300,000 bushels exported during the preceding 12 months.

Apple exporters may expect keener competition in foreign markets. Fruit growing has been fostered in many countries as a result of nationalistic policies and economic conditions. Practically all apple-producing countries have made some progress in improving yields and quality. Exporting countries in particular have taken the lead in this respect. Canada, Australia, and New Zealand have increased their apple exports so rapidly in recent years that restrictions were imposed to reduce the volume by eliminating the low quality and the undesirable varieties of apples. The passage of the Export Apple and Pear Act in 1933 has helped materially to raise the quality of apples exported from the United States. Italy, the Netherlands, and Switzerland also have improved their export apple packs.

Trade barriers continue to obstruct the free movement of apples. Efforts are being made to correct this situation, but it is doubtful if any appreciable degree of relief will come from this source before the 1934-35 apple season is over.

In the 5 seasons, 1928-29 to 1932-33, exports of apples have averaged 17 percent, and have ranged from 12 to 20 percent of the commercial apple crop of the United States. From 15 to 24 percent of the commercial boxed-apple crop and from 9 to 16 percent of the barrel and basket crop were exported during the same period. Exports of United States apples go chiefly to United Kingdom, Germany, and the Netherlands. During the 5-year period, 1928-29 to 1932-33, the United Kingdom took 44 percent, Germany 17 percent, and the Netherlands 11 percent of total exports from this country.

Exports from States that grow popular varieties of export apples comprise a large share of the crop of those States. In Oregon, exports sometimes reach 70 percent of the commercial crop. Probably as much as 60 percent of the Virginia and 40 percent of the West Virginia commercial crops move into export in some seasons. Of the various apple-exporting States, the volume of exports is generally heaviest from Washington. Because of the large production in Washington, however, the proportion of the crop exported probably does not exceed 25 percent.

The export outlet is highly important to the American apple industry. Many orchards in both the Pacific and Atlantic Coast States were planted with the intention of marketing considerable proportion of the crop abroad. Often special varieties that are more popular in foreign countries than in the United States were planted, such as York Imperial, Yellow Newtown (Albemarle Pippin), Ben Davis, Ortley, and Esopus Spitzenburg.

PEACHES

For the country as a whole the producing capacity of orchards supplying fresh peaches for market does not seem excessive and is likely to remain near the present level for the next 4 or 5 years. In some districts declines in bearing-tree numbers may be offset by increases in other districts and by better care and condition of orchards generally. The production of clingstone peaches in California, which is still in excess of the needs of the canning industry under present demand conditions, has passed the peak, and clingstone as well as freestone production is likely to continue to decline for the next 4 or 5 years. Production for the United States for the 5 years 1930-34, averaged 53,000,000 bushels, compared with 52,000,000 bushels for 1925-29, and 46,000,000 bushels for 1920-24.

Orchards generally have been well cared for in the last year and are in good condition. Planting of orchards has increased somewhat in 1934 as compared with the low rate of several preceding years. Continued moderate planting is necessary to maintain production near the present level in the South and most other areas producing fresh fruit for market. In the South as a whole the trend in number of bearing trees is probably slightly downward. There has been severe winter injury to older orchards in some of the North Atlantic States, particularly in New York.

Marketing by motor truck and at roadside stands continues to be an important factor in adjustments which are taking place in the peach industry. Shifts in production among competing districts and some changes in varieties planted are occurring.

Returns to peach growers in districts where a crop was produced in 1934 were more favorable than in earlier years of the depression. For the United States prices in 1933 and 1934 averaged about 40 percent higher than the low average of 1931 and 1932. Peach prices for the United States in terms of the 1910-14 average declined from 122 percent in 1929 to 47 percent in 1932; then rose to about 71 percent in 1934.

PRODUCTION PROSPECTS

The outlook for peaches varies with the different districts, according to their harvesting seasons and market-distribution areas. In seven leading Southern peach States (North Carolina, South Carolina, Georgia, Alabama, Tennessee, Arkansas, and Texas), which are the main source of supply of fresh peaches each season until about the middle of August, the number of bearing trees has declined during the last few years. Production in the 3 years, 1932-34, averaged 11,200,000 bushels, or less than one-half of the record crop of 1931 and about one-fourth less than the 5-year average 1927-31.

In seven southern peach States the present number of bearing trees is sufficient, with average growing conditions, to produce a crop of about 15,000,000 or 16,000,000 bushels. A study of the relationship of production and crop value in these States over a period of years indicates that if production falls much below this quantity, the gross returns to peach growers will also decline. Southern peach orchards are in fair-to-good condition, as returns in the last two seasons have encouraged growers and enabled them to give better care to the orchards. Indications, from nursery stock sold and from reports received from the producing areas, are that planting has increased somewhat in the last year as compared with that of the previous year but is still at a much lower rate than during the period of rapid expansion from 1920-25. A continued moderate rate of planting such as has occurred in the last year or two or perhaps a slightly higher rate would apparently not result in burdensome production in years of average growing conditions. New plantings should be undertaken, however, only after careful consideration of such factors as orchard site, variety, competition, and financial resources to care for the orchard.

In Georgia, the leading southern peach State, a survey made in the fall of 1931 indicated that only 18 percent of the commercial trees in the State were

less than 5 years old, and 33 percent were more than 9 years old. Plantings have hardly been sufficient to replace trees going out of production and indications are that a rather high percentage of the trees are well advanced in age. But with better care being given orchards it is probable that in any year in the near future, under favorable weather conditions, Georgia may ship more than 8,000 cars. In 1934 Georgia shipped nearly 8,200 cars, and in the 3 years, 1932-34, averaged about 6,000 cars, compared with 11,000 cars as the 5-year average in 1927-31.

In southern Georgia estimated plantings in 1933-34 of 100,000 trees and in 1932-33 of 50,000 trees have almost equaled the number of old trees removed. Trees planted have been mostly of the Hiley variety with some Early Rose and Uneeda. Only a few of the Elberta variety have been planted in this district in recent years.

Some further decline in the production trend in central Georgia is expected. In the last two seasons probably not more than 100,000 trees have been set in central and north Georgia. Many of the new plantings in central Georgia have been of early varieties, chiefly Hiley and Early Rose. If there is a further material increase in planting of Hiley and earlier varieties in central Georgia, competition with shipments from the southern district may result in serious losses.

North Carolina and South Carolina orchards are generally in good condition. New plantings in North Carolina in the last few years have probably not been sufficient to offset trees that have gone out of bearing. In South Carolina the production trend is definitely upward and within 4 or 5 years production may be approximately double the average of the crops of 1933 and 1934. Condition of Arkansas peach orchards varies considerably, but it is expected that by fall of 1937 the number of bearing trees will be 15 to 20 percent less than at present.

In the peach areas of Pennsylvania, Maryland, Virginia, West Virginia, New Jersey, and Delaware no great change in the number of bearing trees is anticipated, although the trend may be slightly downward, owing chiefly to a decline in the industry in West Virginia and to damage to trees from freezing injury in Pennsylvania, where 7 percent were reported killed and 17 percent injured in 1934. In 1930, 28 percent of the trees in these States were not of bearing age and it is probable that the ratio of young trees to total trees has not changed materially since 1930. For this region as a whole average production has not changed greatly in the last decade.

In New York State, damage to peach trees from freezing in 1933-34 was severe. A survey for the State showed that 37 percent of the trees of bearing age were killed and 33 percent injured. Of the bearing trees which were killed, about one-fifth were reported to have been past their period of economic usefulness prior to the freeze. Of the trees not of bearing age which amounted to about one-third of the total in 1930, only about one-seventh were killed and one-fifth injured. Young orchards in general are well cared for and in good condition, whereas old orchards as a rule are in poor condition. Many growers are planning to set out new orchards many of which will be varieties other than Elberta.

Some injury from low temperatures occurred in Michigan and Ohio but on the whole injury is not very serious. The resulting tree mortality was probably not more than 2 or 3 percent. New plantings are probably about sufficient to prevent a decline in tree numbers. In Illinois and Missouri the number of trees set out has not been large and there has been a small amount of damage from drought.

The 1934 crop in Colorado was the largest on record, quality was good, competition from other States was limited, and returns to growers were encouraging. Orchards are receiving good care. Little, if any, expansion is expected but there will probably be replacements to maintain present acreage. The number of bearing trees in Utah may decline somewhat in the next few years.

Northwestern peach growers are encouraged by better-than-usual returns for the 1934 crop, and orchards are in fair-to-good condition. In Washington new plantings have been limited and in Oregon the bearing acreage is reported to be on the decline.

In California the acreage of 112,000 acres is about equally divided between clingstone and freestone varieties but roughly two-thirds of the production is of clingstone and one-third of freestone varieties. The production of clingstone varieties is still in excess of the needs of the canning industry. The 1933 and 1934 clingstone crops were marketed under an Agricultural Adjustment Ad-

ministration marketing agreement and returns to growers were much higher than in 1932, although under the terms of the agreement a portion of the clingstone crop was withheld from sale to canners. Prices of freestone varieties were also higher in 1933 and 1934 than in 1932. Plantings of both clingstone and freestone varieties have been relatively light in recent years and production is now declining. There was some increase in the rate of planting of clingstone varieties this season.

California peaches move east in considerable volume, particularly in years when the midseason crop in other sections is light. From 1930 to 1934, these out-of-State shipments averaged slightly under 3,000 cars annually, and were equivalent to about 6 percent of the California production. Of the out-of-State shipments during the last 3 years about one-half were reported as freestones, one-sixth as clingstones, and one-third as unclassified.

CHERRIES

The numbers of cherry trees now in orchards and their condition and age are sufficient to maintain the upward trend in production (that has been in evidence during the last few years) for at least another 5 years. Although tree losses were heavy in some of the Northeastern States during last winter and may check the trend to some extent, there is still sufficient acreage upon which the production is increasing at a rapid rate to produce burdensome surpluses in years of normal growing conditions.

Production of cherries in the 12 more important commercial States (New York, Pennsylvania, Ohio, Michigan, Wisconsin, Montana, Idaho, Colorado, Utah, Washington, Oregon, and California) in 1934 is estimated at 115,081 tons, or about 9 percent less than the large crop of 1932, 2 percent less than the 1933 crop, but 23 percent larger than the average crop for the period 1927-31.

The total number of trees in the 12 States increased about 16 percent from 1920 to 1930. In 1920 about 22 percent of the total trees in orchards were not of bearing age and in 1930 nearly 37 percent. Since 1930, plantings have been fairly light in most sections. Allowing for losses from natural causes and losses from freezing during the last two winters, it is estimated that there are about 7,600,000 bearing trees now in orchards, which would be about 29 percent more than in 1930.

SOUR CHERRIES

No separation of sweet and sour varieties is made in the census enumeration of trees nor in the estimates of production, except in New York, but surveys show that the majority of the cherry trees in the States east of the Rocky Mountains are of sour varieties. About 95 percent of the trees in Michigan and fully 87 percent in New York are of sour varieties. The majority of the trees in Wisconsin, Pennsylvania, Ohio, Montana, and Colorado are also of sour varieties.

In these seven States present tree numbers are sufficient to maintain an upward trend in production for at least another 5 years, provided there is no future unusual abandonment or exceptional loss due to winter-killing or like causes.

Production of sour cherries is now so large that in years of average or better-than-average conditions production exceeds the quantity that can be marketed profitably.

In 1930 there were about 6,034,000 cherry trees in those seven States; 36 percent were not of bearing age, and 64 percent were bearing. In New York the cold weather of the winter of 1933-34 killed about 7 percent of the bearing sour-cherry trees and over 3 percent of the nonbearing trees. Almost 18 percent of the bearing trees and 13 percent of the nonbearing trees were injured. About 5 percent of the Pennsylvania cherry trees were killed and 8 percent were injured. Apparently Ohio and Michigan cherry trees also suffered from last winter's low temperatures and, to some extent, from the 1934 drought. In Colorado, in 1933, there was some loss of trees through winter injury, and tree numbers in that State are apparently on the decline. Neglect of trees during the last 3 years, combined with drought and winter damage in Wisconsin, probably resulted in sufficient injury to check the advancing potential production somewhat, despite the probable increase in acreage through new trees coming into bearing.

Michigan, now the largest cherry-producing State in the country, had about 110,000 trees in commercial orchards on January 1, 1931; of these about 54

percent were nonbearing, 21 percent were between 7 and 11 years old, 13 percent between 12 and 18 years old, 9 percent between 19 and 25, and 3 percent 26 years and over. Plantings since 1930 have been negligible. Under present low-price conditions no extensive plantings are contemplated, and some neglect has been reported. Total potential cherry production in Michigan increased about 26 percent during the period 1929-34, as a result of previous heavy plantings. This upward trend is expected to continue chiefly as a result of increased bearing capacity because of the increase in the average age of bearing trees. The greater number of the cherry trees in New York are relatively young and are mostly well cared for. In Washington new plantings of sour cherries scarcely equal the removals.

SWEET CHERRIES

In the States producing the bulk of the sweet cherries the long-time production outlook is much the same as indicated for sour cherries. In 1930 California, Oregon, Washington, Utah, and Idaho had about 3,368,000 cherry trees, which represented an increase of about 56 percent from 1920. Only about 62 percent of the trees in orchards in these five States in 1930 were then of bearing age, compared with 75 percent of the 2,156,000 trees reported in the census of 1920. In California orchards have generally received good care, but low returns in recent years have tended to discourage producers, and, if this condition continues, some abandonment of orchards may be expected. A classification of Utah cherries for April 1931 was as follows: Of bearing trees, sweet dark, 65 percent; sweet light, 11 percent; sour cherries, 22 percent; of non-bearing trees, 60, 9, and 31 percent, respectively. Dark sweet cherries, chiefly Bing and Lambert varieties, have been the favorites in the plantings of the last 8 or 9 years and the few plantings of 1934. The recent drought has probably killed considerable numbers of young cherry trees in Utah. Plantings since 1930 have been light in the Western States, but there is some indication that plantings of sweet cherries are being made in some Eastern States within trucking distance of large cities and in localities in which retail sales can be made through roadside stands. Loss of sweet-cherry trees in these States was unusually heavy during the winter of 1933-34. With about 38 percent of the trees in orchards in 1930 not of bearing age, and with but little abandonment or unusual future loss from weather and diseases, the trend of production may be expected to continue upward during the next 5 years.

PEARS

Pear production in the United States has followed a pronounced upward trend for the last 30 years, and there are now sufficient trees in bearing and coming into bearing to increase production further, unless tree numbers are greatly reduced by winter injury or by neglect. Bearing-tree numbers are such that in years of favorable fruiting conditions production will be greater than can be marketed without difficulty. Low prices during the 4 years, 1930 to 1933, discouraged many growers and resulted in neglect and in some abandonment of orchards. The higher returns in 1934 over those received in 1932 and 1933 have tended to encourage growers in most of the important pear-producing sections to take better care of their orchards.

The number of bearing pear trees in the United States declined from about 17,700,000 in 1900 to a low point of 14,651,000 in 1920, then turned upward to 16,041,000 in 1930. The 20 years of decline from 1900 to 1920 were marked by the abandonment of the small-farm orchard and by expansion in the more favorably located commercial sections. This shift in the areas of production was largely regional. In the Eastern States as a whole, tree numbers have declined from the beginning of the century to the present, whereas in the Pacific Coast States new plantings made shortly after 1900 began to show in an upward trend in numbers of bearing trees between 1910 and 1920. The sharp increase in bearing trees between 1920 and 1930 is due almost entirely to the expansion in California, Washington, and Oregon. In 1910 only about 16 percent of the pear trees in the United States were located in these three States, while by 1930 these States contained over half.

Since 1930 the rate of new planting has decreased, although some new planting is continuing in a few areas, such as the Hood River Valley in Oregon, where there is a marked tendency to replace apples with pears. During last

year there was a slight decrease in the total pear-tree acreage in California, but there was about a 2-percent increase in the bearing acreage.

Commercial pear orchards in Michigan, Indiana, and Illinois have been maintained in good condition. Elsewhere east of the Pacific Coast States there has been a general tendency to neglect orchards during the last few years. Pear trees suffered from the severe temperatures of the winter of 1933-34 in New York and Pennsylvania. About 9 percent of the bearing pear trees in New York were killed last winter and 6 percent of the nonbearing trees. An additional 21 percent of the bearing trees and over 14 percent of the nonbearing trees were injured. Probably 2 percent of the Pennsylvania pear trees were either killed or injured. There has been a tendency to neglect and, to some extent, to abandon marginal orchards and unpopular varieties in the west coast orchards.

It seems probable that the United States production of pears on the present acreage may reach a peak in a few years and that the Pacific Coast States will produce an increasing proportion of the total crop.

No statistics are available as to the average age of pear trees now in orchards, but with such a large proportion of the present bearing acreage located in the three Pacific Coast States, where the major part of the development has occurred within the last 15 years, it would seem that the trees are relatively young. In the East the orchards are probably older, but the shift that has taken place during the last 20 years would indicate that the present orchards, although having reached full production, are in better locations where a relatively high average production per tree can be obtained.

Of the 21,929,000 bushels of pears harvested annually (average of the 5-year period 1927-31), about 17,229,000 bushels were used as fresh fruit, 3,639,000 bushels were canned, and 1,061,000 bushels were dried. Of the 19,525,000 bushels of pears harvested in 1933, about 69 percent were used as fresh fruit, 24 percent were canned, and 7 percent were dried. In 1934 it is estimated that 23,321,000 bushels were harvested, of which 73 percent were marketed fresh, 23 percent were canned, and about 4 percent were dried. The canned-fruit pack during the 1934 season is estimated at 5,000,000 cases compared with the average 1927-31 pack of about 3,460,000 cases (24 no. 2½ cans). The dried output during the period 1927-31 averaged about 4,822 short tons. About the usual quantity and percentage of pears for use as fresh fruit were held in cold storage on October 1, 1934 (2,123,000 bushels).

EXPORTS

Exports of fresh pears in 1933-34 (July to June) were 2,220,000 bushels, compared with 2,400,000 bushels last season and 1,618,000 bushels in the 5-year period 1926-27 to 1930-31. The proportion of the pear crop exported has been around 10 percent in the last 2 years, as compared with 7 percent, the average of the last 5 years. The United Kingdom is the chief outlet, taking about 50 percent of the exports. Important quantities are also disposed of in France, the Netherlands, and Canada.

In addition to the fresh pears, large quantities of canned and dried pears are exported. Exports of these products on a fresh-fruit basis averaged about 2,000,000 bushels during the last 5 years, or nearly 9 percent of the crop.

Exports of dried pears in 1933-34 of 4,204 short tons were the heaviest on record. Germany has usually taken over half these exports. Most of the remainder goes to France, the United Kingdom, the Netherlands, and Sweden. Usually about 70 percent of the dried-pear production is exported. With the exception of 1928-29, the exports of canned pears in 1933-34 amounting to 1,568,000 cases (50 pounds) were the heaviest on record. Practically all of the canned-pear exports go to the United Kingdom. Small quantities are distributed to many different countries. About one-third of the pack is usually exported.

The United States is the chief source of dessert pears entering into export during the winter months. Although some increase in plantings is taking place in Canada and in a few European countries, no important increase in world supplies is expected in the next 5 years. The United States is also the most important source of canned- and dried-pear exports. Neither of these products is in danger of being displaced in export markets in the near future, although Canada and Australia have been increasing their production of canned pears.

The export outlook for the remainder of the 1934-35 season is favorable for fresh and canned pears. Owing to the heavy reduction in imports by Germany, the outlook for dried pears is rather unsatisfactory.

GRAPES

The market outlook for grapes for 1935 will probably show but slight change from 1934 unless there is marked improvement in economic conditions in general. There is already in the country as a whole, ample acreage of wine, raisin, and table varieties to take care of any increase in demand that is likely to take place in the next 5 years. Potential supplies from the present acreage in years of normal crops are likely to prove burdensome, and it is not probable that new plantings will be necessary, except for replacement purposes, for several years to come.

In general, grapes are used in the United States for three purposes. In the order of their importance, they are grapes used for fresh table use, grapes used for the production of raisins, and grapes used for the production of wines. During the last decade the volumes of grapes marketed fresh had necessarily increased considerably, but the decline in purchasing power during the depression brought about a decrease in demand and drastic declines in prices. With the repeal of the eighteenth amendment, a considerable portion of grapes heretofore marketed for fresh use apparently has been diverted to the manufacture of wine.

Prior to the enactment of the eighteenth amendment, 1915-19, consumption of wines in the United States averaged about 46,000,000 gallons per year, or somewhat lower than during the pre-war years, 1910-14, when it averaged about 57,000,000 gallons. Imports from foreign countries made up from 5,000,000 to 7,000,000 gallons of these quantities. On a per capita basis consumption has never exceeded 0.67 gallon during the last 30 years and in normal times averaged about 0.6 gallon. It is estimated that 30 percent of 1934 production of all grapes in the United States would produce enough wine to satisfy preprohibition per capita requirement. In 1934 the production of wine varieties in California alone makes up about 80 percent of this requirement. During the 4 years beginning July 1, 1928, and ended June 30, 1932, an average of about 6,266,000 gallons of wine was produced. For the year 1932-33 the production increased three times and reached 18,756,000 gallons. In 1933-34 it was increased almost 10 times the 1928-32 average to 61,000,000 gallons. Production in the latter year was augmented by importations amounting to about 3,151,000 gallons. Stocks of wine on hand in bonded warehouses on July 1 averaged 21,112,000 gallons for the 5 years 1928-32 and are estimated to have reached between 55,000,000 and 60,000,000 gallons by July 1, 1934. These figures on stocks and production of wine include also wine to be used for distilling purposes, and no allowance is made for evaporation and waste loss. It is indicated from production and stocks that about 25,541,000 gallons moved out of bonded warehouses during 1933-34, some of which went to build up stocks in wholesale and retail stores.

The outlook for higher prices for table grapes is poor, as the supply continues to exceed the demand, which has not changed materially in the last year or two.

The raisin situation from a supply standpoint appears to be much more favorable than it was in 1933. Indicated total production of dried raisins is down about 17 percent from last year and when carry-over is included, the total supply for the 1934-35 marketing year would be down about 14 percent from 1933 and about 16 percent below the average for 1928-32. Normally about 22 percent of the total supply is exported, but in recent years, owing to the increase in trade restrictions in foreign countries, exports have been declining. Normal exports of raisins have averaged about 65,000 tons. The exports for the year 1932-33 were 60,000 tons, and for 1933-34, 50,000 tons. With exports and domestic consumption about the same as during last season, the carry-over at the end of the present marketing year will be reduced materially below those of recent years. Although the raisin-grape situation has improved somewhat owing to the large reduction in acreages and low yields in the last several years, and a somewhat greater use of raisin varieties for wine during the last year, the supply is still somewhat in excess of the demand.

During the period 1910-14 production of all grapes in California averaged 897,000 tons, while during the recent 5 years (1929-33) it averaged 1,783,000 tons, and is estimated at about 1,471,000 tons this year.

For the country as a whole the production of grapes increased steadily during the decade ended in 1928, but has since declined. The 1934 crop, smaller than last year because of drought and winter damage, is expected to total 1,639,000 tons, which compares with 1,910,000 tons produced in 1933, and 2,277,000 tons, which was the 1927-31 average. California is expected to produce 1,471,000 tons in 1934, of which 431,000 tons are classed as wine varieties, 799,000 tons (fresh basis) as raisin grapes, and 241,000 tons as table grapes.

In general the demand for grapes has declined sharply since 1927, although there had been some slackening in consumption for at least 2 or 3 years prior to 1927. In 1933 and 1932 growers received only \$17.82 and \$13.16 per ton, respectively, for grapes compared with \$23 per ton in 1931. Owing to a smaller supply and demand and improved conditions, there have been increased returns for the 1934 crop.

ACREAGE

The number of grape vines of all ages and varieties in the United States decreased about 8 percent during the 10-year period 1910-20, but increased 45 percent from 1920 to 1930. The Bureau of the Census reported that there were 366,844,000 vines of all ages in the country as a whole in 1930, of which number 342,191,000 were of bearing age and about 24,653,000 were nonbearing. Since 1930 there has been considerable neglect and some abandonment of vineyards, especially in California. The repeal of the prohibition amendment has changed this tendency to some extent, but there have been few new plantings except of sweet wine and other desirable wine varieties in California, and the number of vines now in vineyards has undoubtedly declined slightly.

The 1934 drought and the 1933-34 winter damage, although affecting the producing capacity of the 1935 crop, will not be sufficient to lower materially the national total production capacity. A survey in New York shows that 9.4 percent of the vines of bearing age were killed and 30.2 percent were injured; and 6.5 percent of the vines not of bearing age were killed and 14.7 percent were injured by the severe weather in the winter of 1933-34. Such varieties as Catawba, Niagara, and Delaware suffered the greatest damage. It is expected that new and replacement plantings will largely offset the reduced acreage caused by drought and winter killing.

In California, where approximately 70 percent of the grape acreage is located, the number of bearing grape vines increased steadily during the two decades ended in 1928. Since 1928 there has been a steady decline and in 1934 the bearing acreage was about 18 percent below the 1928 peak. From 1919 to 1928 the bearing acreage of all varieties in California almost doubled, rising from 322,000 to 628,000 acres, but has since declined to 514,100 acres in 1934. Since 1927 the nonbearing acreage of all varieties has dropped off sharply, from 40,700 acres to only 1,600 acres as of January 1, 1934.

The California bearing acreage of wine grapes increased steadily from 97,000 acres in 1919 to 194,000 acres in 1928, but declined to 185,000 acres in 1932. It increased slightly to 187,800 in 1933 and remained stationary during 1934. Since 1927 the nonbearing acreage of wine-grape varieties has declined steadily from 33,930 acres to only 600 acres in 1933 and increased slightly to 800 acres as of January 1, 1934.

The California bearing acreage of raisin grapes increased from 170,000 acres in 1919 to 352,000 acres in 1926, but has since declined to 232,500 acres in 1934. Very few raisin grapes have been planted in California during the last few years. In 1927 only 2,000 acres were of nonbearing age and by January 1, 1934, the acreage had decreased to only 100 acres.

In 1919 the bearing acreage of table grapes in California totaled 55,000 acres. It increased to 144,000 acres in 1926, but has declined steadily to 93,800 acres in 1934. The nonbearing acreage of table-grape varieties declined from 4,800 acres in 1927 to only 700 acres in 1934, excluding 1934 plantings.

In the remainder of the United States the total number of grape vines increased 39 percent from 1920 to 1930, when it was probably at a record peak of 109,000,000 vines. Of this total, about 100,000,000 were of bearing age and 9,000,000 were nonbearing. Because of the low prices received for all varieties of grapes during the last few years and in view of the downward trend of acreage in California and winter loss in New York, it is probable that there has been a decrease in vineyards in these States since 1930.

STRAWBERRIES

Preliminary estimates indicate that the 1935 commercial strawberry acreage for picking will be about 167,100 acres, or 15 percent below the acreage of 1934, which was only slightly below the record acreage of 1928. Acreages for harvest will be below those of 1934 in all marketing groups of States, except the western group, where an increase of about 10 percent is expected. Of the acreage for picking in 1935, it is estimated that about 57 percent will be new beds, 30 percent second-year beds, and the remaining 13 percent chiefly third-year beds. Roughly this is the same proportion as the age distribution of the acreage picked in 1934. The average condition of all beds about October 1, 1934, was reported to be 71 percent of normal, compared with 73 percent a year earlier. The relative condition of first-year, second-year, and older beds was reported at 75, 69, and 57 percent, respectively, compared with condition figures of 79, 69, and 59 percent on October 1, 1933.

For the country as a whole, commercial strawberry production in 1932 was the largest in several years. With production high, quality of southern berries generally poor, and buying power of consumers low, average prices for the 1932 crop were much lower than for any crop of the previous 15 years, and 45 percent below the average price for the 5-year period, 1927-31. Nevertheless, the acreage for picking in 1933 was increased about 4 percent and with yields slightly above average, total production was above average and prices to growers were the lowest on record, and 11 percent below the unusually low price of 1932. Nearly 25,000,000 quarts, or 8 percent of the production, was not harvested. Even so, plantings were again increased slightly, bringing the acreage for picking in 1934 close to the 202,400 acres harvested in the record season of 1928. In 1934 almost 23,000,000 quarts, or 7 percent of the total production of berries, was not harvested. Largely because of the 1934 drought, the acreage for picking in 1935 in Arkansas, Missouri, Oklahoma, and Kansas, taken as a group, is expected to be only 41 percent of the acreage harvested in 1934. This reduction is largely responsible for the expected decrease of 15 percent from the total acreage harvested in 1934. Based on average yield per acre of the last 5 seasons, 1930-34, the indicated acreage for harvest in 1935 would produce a crop of 268,000,000 quarts, or 15 percent below the production of 1934.

In the early shipping States (Florida, Louisiana, Alabama, Mississippi, and Texas) preliminary estimates indicate 40,000 acres for picking in 1935. This is about 15 percent below the peak acreage of 1933, and the lowest acreage since 1928. The condition of the first-year beds, comprising about 95 percent of the acreage, was reported to be 78 percent of normal on October 1, 1934, compared with 79 percent a year earlier. The condition of second-year and older beds (confined to Alabama and Mississippi) was given as 74 and 64 percent, respectively, compared with 77 and 75 percent on October 1, 1933. In these States, expansion was marked from 1919 to 1929, when acreage increased from 7,100 to 41,200 acres. Since 1929, the acreage has varied from 40,500 in 1931 to 46,800 in 1933. Decreases in 1935 compared with 1934 are indicated in Louisiana, Alabama, and Mississippi. Florida, with 9,000 acres indicated for 1935, and Louisiana with 25,700 acres, together contribute about 87 percent of the 1935 early acreage. Prices to growers in these States in 1934 were about 27 percent higher than the low prices of 1933, but nearly 30 percent below the 5-year average, 1928-32. In 1933 nearly 5,000,000 quarts of berries and in 1934 about 4,000,000 quarts were not harvested.

In the second early States (Arkansas, Georgia, North Carolina, South Carolina, Tennessee, and Virginia) the 1935 acreage for picking (40,800 acres) is expected to be about 28 percent less than in 1934, and is the smallest reported since 1931, when acreage was unusually low because of the 1930 drought. The estimated acreage for picking in 1935 is composed of 41 percent first-year beds, 38 percent second-year beds, and 21 percent older beds—approximately the same as in 1934. The condition of beds on October 1, 1934, was 63 percent of normal compared with 71 percent October 1, 1933. Production in these States in 1934 was not harvested, chiefly because of market conditions. Prices as a whole average, 1928-32. In both 1933 and 1934, about 10 percent of the production was not harvested, chiefly because of market conditions. Prices as a whole were about the same in 1934 as in 1933, and were 43 percent below the average of the preceding 5 years.

In the intermediate States (Missouri, Kansas, Illinois, Oklahoma, Kentucky, Delaware, Maryland, and New Jersey) acreage for picking in 1935 is expected to be 25 percent below the 1934 acreage, and 19 percent below the 5-year average (1928-32). Principally because of drought, the acreage for harvest in 1935 was sharply reduced in Missouri, Kansas, and Oklahoma, in which the harvest acreage in 1935 is expected to be 7,900 compared with 18,700 in 1934. A total of 38,400 acres is indicated for picking in these States in 1935 (compared with 51,200 acres in 1934) and it is estimated that 46 percent will be first-year beds, 42 percent second-year beds, and 12 percent older beds, compared with 48, 43, and 9 percent, respectively, of the 1934 harvested acreage. Condition of all beds was reported on October 1, 1934, to be 65 percent of normal compared with 70 percent a year earlier. Condition of beds of each age was below that reported in October 1933. All these States show smaller acreages for 1935, except Delaware and Maryland, which show no change. Production in 1934 was 17 percent above the 5-year average. Average prices to growers in 1934 were about 28 percent above the 1933 average, but were 34 percent below the 5-year average, 1928-32.

In the eastern lake States (Indiana, Iowa, Michigan, New York, Ohio, Pennsylvania, and Wisconsin) the estimated acreage for picking in 1935 is about 4 percent smaller than the large acreage of 1934. It is estimated that 49 percent will be first-year beds, 41 percent second-year beds, and 10 percent older beds. On October 1, 1933, corresponding percentages were 51, 39, and 10, respectively. The October condition of first-year beds was reported to be 75 percent of normal, of second-year beds 72 percent, of older beds 64 percent, and of all beds 73 percent of normal. Condition of all beds in this group in October 1933 was 70 percent of normal. The average price paid to growers in 1934 was approximately 28 percent above the 1933 average but was 32 percent under the 5-year average, 1928-32.

In the Pacific Coast and Mountain States (California, Washington, Oregon, and Utah) 23,900 acres are indicated for picking in 1935—about 10 percent above the 1934 harvested acreage but about the same as the average of 1928-32. Of the 1935 acreage in these States, approximately 44 percent will be first-year beds, 34 percent second-year beds, and 22 percent older beds. The October 1934 condition of first-year beds was reported to be 87 percent, of second-year beds 81 percent, of older beds 66 percent, and of all beds 81 percent of normal. The average price to growers in 1934 was 10 percent less than in 1933 and 38 percent under the 5-year average 1928-32.

DRY BEANS

With a total supply of dry beans in 1934 of about 1,000,000 bags (100 pounds) less than the average annual disappearance, prices of beans have lately shown a pronounced increase. Imports of a few classes of beans to supplement the domestic supply will probably be necessary this year, and prices of these classes will be influenced largely by the cost of imported beans. Prices of beans generally will doubtless be much higher than during recent years of surplus domestic supply. As a result, excessive plantings of beans are likely to be made in 1935. The price advantage resulting from a supply adjusted to domestic requirements is not likely to be retained if plantings in 1935 greatly exceed those of 1934. The present short crop is due to acreage abandonment and small yields resulting from drought conditions.

The indicated production of dry beans in 1934, based on crop conditions October 1, is 9,449,000 bags, which would be the smallest production since 1927. This short-crop production, plus a carry-over on September 1 of about 1,700,000 bags, estimated largely on reports obtained from trade sources, gives a total supply of only 11,150,000 bags available for all uses during the 1934 crop-marketing season. This is about 700,000 bags less than the estimated disappearance during the 1933 season and about 1,000,000 bags below the average of the previous 5 years. If the total disappearance of beans during the current marketing season were to continue on the level of the average of recent years, the present supply, unless supplemented by imports, would be entirely exhausted before the 1935 crop is ready for market.

There is a possibility that the consumption of beans may increase during the next year or two because of being substituted for meat, in view of the prospective decrease in the meat supply. Even without this stimulus to consumption it is probable that the relatively low supply will necessitate importing beans

this season. The quantity imported will depend upon the price of domestic beans for which available foreign types can be substituted. Ordinarily the price of domestic beans must exceed a minimum of \$4.50 per 100 pounds before imports are possible with the present duty of 3 cents per pound. Reports from the Danube Basin and Japan indicate that there is an exportable surplus of beans this season slightly above the average exports of the last 5 years. These countries are the principal sources of imports of white beans.

Because of the comparatively small supply of beans and the increase in prices this season, growers will be inclined to plant an excessive acreage in 1935. Some increase in acreage may be warranted but an acreage equal to that planted in 1934, assuming average abandonment and average yields, would produce about 12,000,000 bags of beans. This quantity would be close to the average annual disappearance for all purposes and if proportionately distributed among the different classes or varieties of beans would about equal the average domestic requirements during recent years. Any considerable increase over this quantity probably would go into competition with the 1936 crop. By holding next year's acreage down close to that of 1934 there would be little danger of a reappearance of burdensome carry-overs such as existed in the case of some of the major classes of beans during the period 1929-33.

The average monthly farm price of beans in the United States has advanced sharply since May 1934, when the average was \$2.61. The October 15, 1934, price was \$3.83 per 100 pounds. This compares with \$2.64 for October 1933, \$1.90 for October 1932, and an average of \$5.33 for October of the previous 5 years. However, the index of bean prices has not kept pace with the upward movement of the general index for all farm groups during the last 2 years.

Imports and exports continued to be relatively unimportant factors in the domestic bean situation during the year ended September 1934, when imports exceeded exports by only 46,000 bags.

It is too early to estimate closely the production of beans by classes for 1934. It appears from crop conditions in Michigan and New York on October 1, that the total United States production of Pea beans may be roughly about 2,850,000 bags, compared with 3,818,000 bags in 1933, 4,827,000 bags in 1932, and 3,000,000 bags as an average for the preceding 5 years. According to trade estimates, the carry-over of Pea beans in elevators and warehouses in producing States on September 1 of this year is 500,000 bags, or possibly 10 percent greater than that of a year ago. This makes a total available supply of about 3,350,000 bags.

The indicated production of Great Northern beans based on crop conditions on October 1 in the States of Idaho, Montana, and Wyoming is about 1,250,000 bags, which is about 400,000 bags less than was produced in 1933, 175,000 bags more than in 1932, and 400,000 less than the average of the previous 5 years. The estimated carry-over of Great Northern beans on September 1 is about 410,000 bags, bringing the total indicated supply available for distribution this season up to about 1,660,000 bags, which is slightly above the total disappearance for all purposes during the 1933 crop-marketing season.

The production of Pinto beans is not expected to exceed 650,000 bags, which is the lowest production since this class of beans attained commercial importance. The carry-over of Pinto beans in warehouses in producing States on September 1 is variously estimated at from 100,000 to 250,000 bags. The total supply is probably about one-third the total disappearance during the 1933 season or the average of the years 1927-32.

The production of standard lima beans in 1934 is estimated to be 971,000 bags compared with 943,000 bags in 1933, 872,000 bags in 1932, and 1,011,000 bags average for the 5 years 1927-31. The carry-over of 125,000 bags on September 1, 1934, plus the new crop production gives a total available supply of 1,096,000 bags. This is about 225,000 bags more than the total disappearance during the 1933 crop-marketing season, 172,000 bags more than during 1932, and 65,000 bags more than the 5-year average 1927-31. The total supply of baby lima beans available for all uses during the 1934 crop-marketing season is 810,000 bags. This total supply compares with 698,000 bags in 1933, 470,000 bags in 1932, and 547,000 bags average for the 5 years 1927-31.

PEANUTS

October estimates indicate a 1934 crop of about 1,050,000,000 pounds of peanuts to be harvested for nuts. The estimated production is 14 percent larger than the 1933 crop, about 16 percent above the average production of the 5 years ended with 1931, and only about 4 percent smaller than the large produc-

tion of 1931. Stocks of old-crop peanuts at the beginning of the 1934 marketing season were, however, the lowest in many years. Plans of the Agricultural Adjustment Administration provide means for diverting a very much larger-than-usual proportion of the crop to crushers or to be used as feed. Should these plans be followed the quantity of peanuts going to cleaners and shellers during the 1934-35 season will probably be below the average of recent years.

Prices in early October were higher for comparable grades of peanuts than in any early October since 1929. In addition, growers who contract to limit their 1935 peanut acreage will receive benefit payments amounting to \$8 per ton on the 1934 harvested production. In view of the improved prices it is to be expected that the acreage of peanuts planted to be harvested for nuts in 1935 will be larger than the 1934 acreage. Contracting growers in 1935 will be allowed to plant an acreage equal to the average of the 2 previous years and it seems probable that growers not under contract will increase plantings. There is a possibility that plantings by new growers next year may result in a materially increased acreage and a crop larger than can be marketed at profitable prices.

Owing to the small 1934 production of cottonseed, to reduced hog marketings and resulting higher lard prices, and to increased duties on imported oils, peanut-oil prices have increased sharply since last season along with prices for other vegetable oils. Prices for peanut meal have also increased in common with advances in other feed prices. These increased prices have made it possible for crushers to pay more for peanuts and the Agricultural Adjustment Administration has provided means for remunerating growers for diverting a larger-than-usual proportion of the 1934 peanut crop to crushers or for use as feed. Under these conditions crushings of peanuts in the 1934-35 season will doubtless increase sharply over the level of recent years, when they have averaged about 30,000 tons. Peanuts have already begun to move to southeastern crushing plants in considerable volume. The prices paid in the Southeast, including the Government allowance for diversion to oil, were between \$50 and \$60 per ton during the first 2 weeks in October and many farmers seem inclined to market at prevailing prices.

About one-third of the total planted acreage of peanuts is normally hogged off. The quantity of peanuts harvested and subsequently fed to livestock has been of comparatively small proportions in past years. In view of the present high feed prices and because of the additional payments made for the diversion of harvested peanuts to feed purposes, it is expected that the proportion of the crop thus disposed of will be increased.

ACREAGES

The September estimate of 1,535,000 acres of peanuts to be harvested for nuts in 1934 is the second largest acreage on record, being exceeded only in 1932. This estimated acreage was based on the assumption that the acreage of peanuts harvested for nuts would be about the same proportion of the total peanut acreage as has been the case in past years. However, it appears that the proportion of the total plantings harvested for nuts may be increased this year because of prospects of improved returns for peanuts harvested and because of a reduction in number of hogs. The October estimated yield per acre in 1934 of about 684 pounds slightly exceeds the 1932 and 1933 yields, but is somewhat below the average for the 5 years ended with 1931. The acreage in 1934 was increased over the 1933 level in each State except Texas, but the large increase in acreage was chiefly confined to the Southeastern States and to the Virginia-North Carolina section. The preliminary estimate of about 1,050,000,000 pounds for 1934 is about 145,000,000 pounds above the average production for the 5 years 1927-31. It is about 45,000,000 pounds lower than the large 1931 production and about 130,000,000 pounds above the 1933 production. Stocks of old-crop peanuts at the beginning of the present marketing season were the lowest in years. With present plans for diverting the surplus 1934 production to oil mills and for use as feed, supplies of peanuts going to cleaners and shellers during the current marketing season are expected to be somewhat lower than the average of recent years.

Virginia, North Carolina, and Tennessee, which produce principally large-podded peanuts or Virginia-type nuts, according to preliminary estimates have an acreage about 20 percent above that of 1933, but this forecast acreage is smaller than the large acreages of 1931 and 1932. The prospective yield per acre in 1934 is improved over the rather low 1933 yield, and the indicated

production of 421,730,000 pounds is about 33 percent above the 1933 production. The carry-over of old-crop Virginia peanuts in all hands at the beginning of the 1934-35 marketing season was negligible. With practically no carry-over, and with a probable increase in the quantities of peanuts in these States that will be diverted to crushers or used for feed, supplies of Virginia peanuts for cleaners and shellers during the coming season are not expected to be in excess of requirements, notwithstanding the rather large 1934 crop.

In the Southeastern States of Georgia, Alabama, Florida, South Carolina, and Mississippi, where both Spanish and Runner types are grown, the indicated 1934 acreage has been exceeded only in 1932. The estimated 1934 production of 533,840,000 pounds for these States exceeds the previous large 1931 crop by about 9 percent and is about 17 percent larger than either the 1932 or 1933 crop. Supplies of old-crop peanuts at the beginning of the current marketing season were negligible, as was the case a year earlier. It is expected that a considerable proportion of peanuts from these Southeastern States will be diverted to crushers or used for feed. Early reports indicate that the 1934 crop, particularly of Spanish-type nuts, will be above average quality.

In the Southwestern States of Texas, Oklahoma, Arkansas, and Louisiana, where the Spanish-type peanuts are grown, the 1934 acreage is only slightly increased over the 1933 acreage. The indicated yield per acre, however, is exceptionally low because of the drought, and the estimated production in 1934 of 94,175,000 pounds is the smallest since 1930 and 36 percent below the 1933 crop. Supplies of peanuts in these Southwestern States were exhausted before the beginning of the current marketing season, and present supplies are certain to be inadequate for normal needs. Early reports indicate that the quality of peanuts in the Southwest is below average, being affected by unfavorable weather. Harvestings have been delayed in the hope that the yields might be improved by late rains.

TOBACCO

The outlook for most types of tobacco is for reduced stocks a year hence and for further improvement in the supply situation, provided production in 1935 is held in line with requirements. Domestic consumption of several tobacco products has shown improvement during the past year and exchange rates are favorable to the exportation of American tobacco. Exports to October 1934 continued to be small, though exceeding the exports for the same months in 1933. In spite of the improvement that has occurred, supplies of several types of tobacco continue to be large when compared to the present rate of consumption. This is especially true for burley, the production of which has not been reduced enough to result in a materially reduced carry-over by October 1935.

The total tobacco acreage grown in the United States in 1934 was estimated at 1,364,500 acres, a very large percentage of which was under contract with the Agricultural Adjustment Administration. The contracts provided for different rates of reduction for the several kinds of tobacco, averaging around 30 percent. The 1934 acreage was the smallest total acreage in the United States since 1921 and the second smallest since 1914. Preliminary estimates in 1934 indicate yields above average for most types of tobacco, as a result of favorable weather conditions. The average yield for all types combined was estimated at 800 pounds per acre, which is higher than any yield for the last 11 years. For some types, notably burley and fire-cured, the 1934 production of contracting growers is reported to be materially in excess of the quantity allotted to be sold under the contracts. The extent to which this excess production is marketed will influence the size of the carry-over of these types into the next marketing season.

Consumption of tobacco products was reduced during the depression: cigarette and cigar consumption decreased materially, pipe smoking and the use of hand-rolled cigarettes increased, snuff consumption decreased, and chewing tobacco continued to decline as it has done for many years. During the last year, there was an increase in the consumption of all classes of tobacco products, the principal increase being in cigarettes and cigars.

On the other hand, American tobaccos are continuing to meet with increased competition in foreign markets. A large quantity of tobacco formerly purchased from the United States has been replaced by competing foreign types. The production of tobacco in seven countries, which before the World War

took approximately 45 percent of the leaf tobacco exported from the United States, increased from an average of 250,000,000 pounds for the 3 years 1918-20 to 451,000,000 pounds for the 3 years 1930-32. This expansion resulted largely from high foreign tariffs, policies of government tobacco monopolies in foreign countries, and unfavorable exchange rates.

From 1919 to 1929 nearly 45 percent of the production of tobacco in the United States was exported. During the 12 months ended September 30, 1930, exports totaled 688,000,000 pounds (farm sales weight), from which level exports dropped successively to 640,000,000 pounds for the crop year 1930-31, 480,000,000 pounds for 1931-32, and 437,000,000 pounds for the 12 months ended September 30, 1933. Exports in the latter years, however, were materially affected by the unusually short crop of 1932. During the 12 months to September 1934, following the large crop of 1933, exports amounted to only 500,000,000 pounds, equivalent to 30 percent of the total 1933 production.

The tendency toward self-sufficiency on the part of many countries and the high prices now prevailing in the United States for some types of tobacco may further encourage the production and consumption of competing foreign types. However, if the improvement which took place last year in exchange rates is maintained during 1935 it may partially offset some of these influences.

With a very large percentage of the tobacco acreage of the United States under contract with the Agricultural Adjustment Administration for 1934 and 1935, it is evident that the policy of the Administration, together with any extension or modification of the Tobacco Control Act, must be considered as a principal factor in determining acreage and production in 1935. In the past, substantially improved prices for tobacco have usually caused large increases in production and lower prices the following year. Except for the control measures to be applied to tobacco in 1935, plantings of most types would probably be greatly increased. Notwithstanding the progress made in the liquidation of surplus tobacco stocks in 1934, a general expansion of production does not appear justified in 1935.

FLUE-CURED TOBACCO, TYPES 11, 12, 13, AND 14

The flue-cured tobacco situation shows considerable improvement compared with a year ago. A moderate increase in acreage seems justified in 1935 in order to obtain a production equal to consumption, thus maintaining a total supply for the 1935-36 marketing year similar to that available for this season.

With July 1 stocks in the United States estimated at 770,000,000 pounds (farm sales weight) and foreign stocks of United States flue-cured tobacco estimated at 580,000,000 pounds, the total carry-over into the present marketing season amounted to about 1,350,000,000 pounds. Carry-over, combined with the October 1 estimates of the 1934 production of 545,000,000 pounds, makes the total supply of United States flue-cured tobacco for the current season 1,895,000,000 pounds, which is 4.5 percent below the supply a year earlier and 10 percent below the average of the last 5 years. World carry-over July 1, 1934, was approximately 105,000,000 pounds larger than a year earlier as a result of the large crop of 1933. This increase of carry-over was more than offset, however, by the reduction in the 1934 crop.

World consumption of United States flue-cured tobacco during the year ended June 30, 1934, showed little change from that of the preceding year, being estimated at 633,000,000 pounds, which was about 8 percent below the average for the last 5 years. Domestic consumption, which consists of about two-fifths of this total, increased nearly 5 percent during the year because of the increase in the use of cigarettes, but foreign consumption declined slightly. About 30 percent of the total world consumption of flue-cured tobacco is used in cigarettes in the United States. Cigarette consumption during 1934-35 is expected to show some further increase, but the consumption of other manufactured tobacco products is not likely to show much change, leaving the net increase for flue-cured products in the United States about the same as that which occurred last year.

Exports during 1933-34 totaled 380,000,000 pounds (farm-sales weight), which represents an increase of 22 percent over the exports a year earlier and 14 percent over 2 years earlier. This is about 10 percent below the 5-year average. The quantity exported last year exceeded foreign consumption for the first time since 1930-31. It is probable that, in view of the reduced production in 1934, exports during 1934-35 will be below foreign consumption. Foreign consumption showed a small reduction last year, and it appears probable that

some further decline may take place during 1934-35. Although the consumption of United States fire-cured tobacco in the United Kingdom appears to have shown some increase during the last few months, this gain has been more than offset by declines in other important countries, particularly in China. The production of fire-cured tobacco in foreign countries in 1934 appears to have been larger than in 1933, notwithstanding the smaller crop in Canada, and it is expected that further increases may take place in 1935, bringing the total foreign production for reporting countries (China, Japan, South Africa, Canada, and Australia) well above 200,000,000 pounds.

It is estimated that the total world consumption of fire-cured tobacco during 1934-35 will be around 630,000,000 pounds. This suggests that world stocks on July 1, 1935, will be about 1,265,000 pounds, or 6.4 percent below those of July 1, 1934. Therefore a crop of fire-cured tobacco in 1935 equal to that of 1934 would make a total world's supply for the succeeding year of about 1,800,000,000 pounds, or about 5 percent below that of July 1, 1934. On the other hand, a 1935 crop as large as that of 1933 would give a world's supply approximately 105,000,000 pounds larger than that of 1934-35.

Sales to October 1 from the 1934 crop of fire-cured tobacco were at the most favorable prices in more than a decade. Judging from the effects of high prices in previous years, it appears that if no control measures were to be applied in 1935 the acreage planted to fire-cured tobacco would be so increased as to result in a crop far in excess of world consumption. The present economic situation in the fire-cured tobacco industry indicates that the total supply for the 1935-36 season should not greatly exceed that available for the present season.

FIRE-CURED TOBACCO, TYPES 21, 22, 23, AND 24

The outlook for fire-cured tobacco shows only moderate improvement. World supplies, though materially reduced, are still large, and the export situation shows no material improvement. Foreign consumption of these types, which has been on a downward trend for the last decade or more, decreased further during the last year, but a moderate increase is shown in domestic consumption.

Production of fire-cured tobacco in the United States in 1934 is currently estimated at 121,628,000 pounds. Except for 1927, this is the smallest crop on record and is materially less than world consumption for the 1933-34 season. As this crop is below world consumption, stocks of these types a year hence will show a sizeable reduction from present levels.

Domestic stocks of fire-cured tobacco on October 1 are estimated at about 207,000,000 pounds (farm sales weight). Foreign stocks of United States fire-cured types have been estimated at 133,000,000 pounds. World stocks, together with the estimated domestic production of nearly 122,000,000 pounds, make a total world supply of 462,000,000 pounds for the 1934-35 season. This is about 4 percent less than the world supply the previous year and around 35 percent below the level of world supplies 10 years earlier. But present supplies are large in view of the reduced rate of consumption.

World consumption of United States fire-cured tobacco, for the 12 months ended September 30, 1934, is estimated at 134,000,000 pounds. This is about 2 percent below world consumption for the preceding 12-month period and 37 percent smaller than world consumption in 1925. Foreign consumption decreased during the last season, but was offset to some extent by increases in domestic use. About 70 percent of the fire-cured tobacco produced in the United States is exported and about 30 percent of it is used in domestic products, principally snuff. Tax-paid withdrawals of snuff for the 12 months ended with September 1934 were approximately 5 percent larger than for the previous 12 months.

The foreign trade in United States fire-cured tobacco has declined rapidly since 1923, owing to the increasing competition of foreign tobacco and to changes in consumer preferences. Exports for all fire-cured types for the 12 months to September 30, 1934, totaled only 83,000,000 pounds (farm sales weight). This is 9 percent below exports for the previous year and more than 50 percent below the exports of 10 years ago.

The outlook for fire-cured tobacco in 1935 depends to some extent on the disposition made of the excess production of some producers of the quantity allotted under contract. If this excess is destroyed, the supply situation will have been so improved by 1935 that a reduction in the crop somewhat less than that of 1934 will restore supplies to their normal relationship with consumption.

BURLEY TOBACCO, TYPE 31

The dominating factor in the burley situation is the huge carry-over from the 1933 and previous crops. In 1933 the October carry-over was about 736,000,000 pounds, farm weight. Added to the 1933 production of 382,000,000 pounds this made a total supply of 1,118,000,000 pounds, the equivalent of about 4 years' consumption requirements compared with an average of 2.8 years' supply during the 10-year period 1920-29. This year it is believed that October stocks (not yet tabulated) will amount to about 837,000,000 pounds, farm weight. This, added to the estimated 1934 production of 298,000,000 pounds, makes a total supply of 1,135,000,000 pounds, or again, about 4 years' consumption requirements. Should the full quantity be sold or held available for sale, the total supply for the ensuing year would be 1,135,000,000 pounds, or about 1½ percent greater than that of a year ago. This suggests that the planting of an acreage next year equal to that of 1934 would be unwise.

It has been reported that owing to favorable yields, a larger percentage of the burley growers who signed contracts with the Agricultural Adjustment Administration this year have produced in excess of their quota. The method of disposing of this excess tobacco will have an important bearing on the present and future outlook. If, as has been estimated, the excess production by signers amounts to 25,000,000 pounds, and this quantity is destroyed or rendered unfit for the ordinary uses, the present potential supply and next October's carry-over will be diminished accordingly.

The demand situation in burley has improved somewhat. Cigarette consumption has shown an upward trend since April 1932. Withdrawals during the 12 months ended September 1 were about 9 percent higher this year than last. Consumption of other products for which burley is used has shown but little change, however, and the total disappearance of burley in the 1933-34 season will probably be about 4 percent over that of the previous season.

MARYLAND TOBACCO, TYPE 32

The outlook for good Maryland tobacco appears to be favorable. But it is to be noted that the total supply as of October 1 was the highest on record, largely because of the accumulation of low-grade tobacco. Production in 1934 is estimated at 24,480,000 pounds, compared with 20,400,000 pounds in 1933; whereas it is estimated that stocks on October 1 were 38,000,000 pounds, compared with 40,488,000 pounds a year ago. The net effect of these changes in production and stocks is to increase the total supply from 60,888,000 pounds on October 1, 1933, to about 62,500,000 pounds on the same date in 1934. A considerable portion of the existing stocks and total supply represents an accumulation of low-grade tobacco. Offsetting this increase in total supply is the fact that exports have improved somewhat during the last 9 months and there are indications that domestic consumption also is increasing. Total disappearance is estimated at 23,000,000 pounds during the last 12 months, which is substantially larger than disappearance during any of the preceding 3 years. Prices paid on the Baltimore market for the 1933 crop averaged slightly higher than those paid for the 1932 crop, notwithstanding the fact that the only sales of low-grade tobacco have been at extremely low prices.

DARK AIR-CURED TOBACCO, TYPES 35, 36, AND 37

The supply situation of the dark air-cured class of tobacco improved during last year. Production during the last 2 years has been on a lower scale than in previous years, and there has also been a reduction in stocks. The October forecast of production of dark air-cured types is about 10,000,000 pounds less than the total disappearance during the year ended October 1, so that it is probable that stocks will be further reduced by October 1, 1935.

Disappearance of dark air-cured tobacco declined more than 50 percent during the last decade but has remained at about the same level during the last 2 years. Most of the earlier decline was due to the decreasing consumption of chewing tobacco here, and to foreign substitutions. This decline has proceeded without interruption for many years, but there are indications now that, temporarily at least, the decline has been checked. Considerable quantities of dark air-cured tobacco are exported in the form of black-fat, and these exports are being fairly well maintained. Altogether, no material change in the world consumption of these types is likely to occur during the ensuing year. With this factor remaining about the same, and with a reduction in stocks by next October, the outlook for 1935 shows improvement.

CIGAR-LEAF TOBACCO

The outlook for cigar tobacco has improved, but burdensome supplies and restricted outlets, especially for the stemming grades, continue to face the growers. The decline in cigar consumption has been checked, but the consumption of scrap chewing tobacco continues to decline. Even after the serious oversupply situation of recent years has been corrected, farmers will be obliged to continue production at a level much below that of 1931 and previous years if improved prices are to be maintained.

Tax-paid withdrawals of cigars for the 9 months ended with September 1934 were about 2 percent larger than for the same period in 1933, but about 30 percent below the average for the 5-year period, 1926-30. Available information indicates that the consumption of scrap chewing tobacco has declined around one-third during the last 3 years. During the last year the decreased use of cigar tobacco in production of scrap chewing more than offset its increased use in cigars.

Estimated production of domestic cigar tobacco in 1933 was approximately 35,000,000 pounds less than consumption, thus resulting in a reduction by that quantity in stocks (including farm stocks) held on October 1, 1934, from those of a year earlier. Early estimates of production and consumption for 1934 indicate that stocks will further decrease by approximately the same quantity by next October 1.

As compared with the normal relation of stocks to consumption, present stocks are still excessive. Those of October 1, 1934, were equivalent to approximately 4.4 years' consumption, whereas from 1923 to 1929 stocks averaged 2.4 times the annual consumption. The reduction in stocks during last year was equivalent to approximately one-third of a year's consumption.

October 1 estimates indicate a 1934 crop of cigar tobacco of 70,569,000 pounds. This is the smallest crop reported for cigar-tobacco districts since 1869. Production of filler types for 1934 is estimated at 36,155,000 pounds; binder types, 27,431,000 pounds; and wrapper types, 6,983,000 pounds. Approximately 92 percent of the growers operated in 1934 under adjustment contracts with the Agricultural Adjustment Administration. Under the terms of these contracts, the reductions made in acreage in 1934 may be continued in 1935.

Tobacco plantings in Puerto Rico for the 1934-35 crop are expected to be about 33 percent smaller than those of 1933-34. The import duty on tobacco and tobacco products from Cuba was reduced under the reciprocal trade agreement between Cuba and the United States, effective September 3, 1934, but the quantity of such tobacco and tobacco products (unstemmed equivalent) which may be imported during any year is limited to 18 percent of the quantity of tobacco used in cigar factories in the United States during the preceding year. The percentage relationship is approximately the average of the last 10 years.

BROOMCORN

A moderate expansion of broomcorn acreage in 1935 in established producing districts appears justified, in view of prospective commercial requirements. Expansion could easily be overdone, however. The short 1934 crop and present high prices, together with a small carry-over into 1935, may result in a larger broomcorn acreage in 1935 than is warranted, especially in view of the expansion occurring outside of established areas.

The crop of 31,800 tons in 1933 was smaller than the crop of any of the preceding 7 years and exceeded the very small 1925 crop by only 600 tons. The present outlook is for a production in 1934 of approximately 28,600 tons, which is about 10 percent under that of 1933 and materially below the requirements of domestic use and usual exports.

The annual disappearance in recent years has averaged about 45,000 tons. A crop of 50,000 tons in 1935 would probably be sufficient for next season's domestic use and exports, and in addition would provide for a moderate carry-over. Such a crop, with the 1924-33 average yield of 300 pounds per acre, would be produced on 333,000 acres—an acreage 14 percent greater than the 291,000 acres harvested in 1934 but only 4 percent above the 5-year (1929-33) average of 320,000 acres.

As the uses of broomcorn are practically limited to the making of brooms, any crop much greater or much less than the requirements for domestic use and exports has usually resulted in a decided change in the farm price. In past years, after high prices, broomcorn production has usually been mate-

rially increased. Should plantings in 1935 be excessive, the resultant crop, with average yields, would probably be larger than could be marketed at profitable prices.

In view of the high prices such as those of 1933 and 1934, it is probable that growers in established districts will expand their acreage sufficiently to provide an adequate supply. Since buyers usually visit only established districts, producers of broomcorn outside of these districts, unless they have a local market, are at a material disadvantage in marketing their crop. In addition, broomcorn production requires special equipment. Unless a grower has had experience in growing and handling the crop, he is likely to produce broomcorn brush of low quality, which will not command a good price.

RICE

Supplies of rice in the United States for the 1934-35 season are about 6 percent larger than they were in 1933-34. Even should the 1934-35 domestic utilization, exports, and shipments to insular possessions be slightly larger than in 1933-34, the carry-over on August 1, 1935, will not be greatly different from the carry-over on August 1, 1934, which was the second largest on record. The probabilities, however, indicate a larger carry-over at the close of the 1934-35 season than on August 1, 1934. Domestic utilization may be increased slightly from the prevailing low level, under the stimulus of marketing agreements, but the net effect will hardly be sufficient to reduce the prospective large carry-over. Minimum rice prices were established near the pre-war level by marketing agreements and by a license. By establishing minimum prices, the marketing agreements have minimized speculative interest in the accumulation of stocks of rice. If United States rice acreage and production are not successfully controlled in 1935 at around the 1934 level, present prices cannot be maintained.

SOUTHERN BELT

Supplies of southern rice for the 1934-35 season are 4 percent larger than those of 1933-34 but 6 percent under the average of the years 1929-33. The carry-over from the previous year was larger, and the 1934 crop was about as large as that of 1933. The southern rough-rice carry-over of 469,000 barrels was only slightly larger than the 448,000 barrels of the previous season. The concentration of milled rice at southern mills, however, which on August 1, 1934, totaled the record quantity for that date of 999,000 pockets, made the total carry-over 1,468,000 pockets. The total 1933 carry-over was 1,003,000 pockets, while the total 1932 carry-over was 1,613,000 pockets—a post-war record. (Rough rice was converted to milled rice on the basis that 1 barrel or 162 pounds of rough rice equals 1 pocket of 100 pounds of milled rice.)

The 1934 southern rice crop was estimated, October 1, at 8,174,000 barrels (29,426,000 bushels) compared with 8,218,000 barrels (29,577,000 bushels) produced in 1933 and 9,520,000 barrels (34,272,000 bushels) in the 5 years 1929-33, used as the base period in the crop-control program. Neither the 1934 acreage nor yield per acre was greatly different from those of 1933.

The total 1934-35 rough-rice supply (carry-over plus the 1934 crop) minus a nominal allowance for farm use including seed and feed, indicates a 1934-35 commercial mill supply of 7,926,000 barrels compared with the 1933-34 mill receipts of 7,628,000 barrels. Commercial mill receipts during August and September 1934 totaled 1,079,000 barrels as against 1,237,000 barrels in the same period last year. Movement of the milled-rice products from southern mills, however, was 24 percent greater than in August-September 1933, and totaled 1,302,000 pockets, causing a reduction of southern mill stocks of milled rice to 790,000 pockets on October 1, 1934. Mill stocks of rough rice October 1, 1934, totaled 294,000 barrels, compared with 529,000 barrels a year earlier. A comparison of these periods indicates a slower movement of new-crop rough-rice to mills in 1934 and the tendency to reduce previously accumulated mill stocks. The larger market takings of milled rice in August and September suggest a replenishment of the stocks, in wholesale centers and in Puerto Rico, which were permitted to dwindle in the spring of 1934, rather than a material improvement in consumer demand.

Exports of southern rice during 1934-35 will be small because of the high-price level of domestic rice compared with foreign rice, the comparatively liberal supplies in foreign countries, and the various import regulations of foreign governments. Movement of southern rice to Puerto Rico during the season may be even lower than the small shipments during 1933-34 because of a decrease in

purchasing power. Demand in continental United States may possibly be increased. A Nation-wide advertising campaign has been initiated by the southern rice industry to increase domestic rice consumption. The Federal Relief Corporation has accepted bids on 50,370,000 pounds, clean (40,370,000 pounds of southern rice and 10,000,000 pounds California rice) of the carry-over to distribute to the needy unemployed, thus removing from commercial channels some of the surplus of old rice.

Minimum prices for 13 varieties of southern rice were established October 15, 1934. Under provisions of the southern rice-marketing agreement and license the minimum price of No. 1 prime A milling quality Early Prolific was placed October 15 at \$2.90; Blue Rose type Prolific, \$3.10; Blue Rose, \$3.30; Louisiana Pearl, \$3.15; Lady and Early Wright, \$3.30; Edith, \$3.60; Fortuna, \$3.65; and Rexoro, \$3.70 per barrel. These prices are slightly higher than the 1933-34 minimum prices or those generally prevailing in the markets during or at the close of the 1933-34 season. The seasonal average price of southern rough rice from the 1933 crop was 76 cents per bushel (\$2.74 per barrel) compared with 42 cents per bushel (\$1.51 per barrel) for the 1932 crop. Southern milled-rice prices may be slightly lower because of the amendment to the license which reduced the conversion charge on rough rice from 70 cents to 50 cents per barrel.

CALIFORNIA

The 1934 rice crop in California was placed by the October 1 estimate at 3,165,750 bags of 100 pounds each (7,035,000 bushels) compared with 2,718,900 bags (6,042,000 bushels) last year and an average of 3,156,000 bags (7,013,000 bushels) during the base period 1929-33. The 1934 carry-over was large considering the 1933 crop. It totaled about 325,000 bags. Mill stocks of rough rice at the beginning of the 1934-35 season (Oct. 1) aggregated 30,000 bags compared with 37,000 bags a year ago; of milled rice 228,000 bags and 73,000 bags at the same dates, respectively.

During the California 1933-34 rice season, total shipments to Hawaii and Puerto Rico, and exports, were reduced compared with a year ago. Southern Blue Rose and Japan rice were relatively cheaper than California-Japan in Puerto Rico. During the 1934-35 season California probably will not ship more rice to Puerto Rico than in 1933-34, when it shipped 387,000 bags. The average shipments of California rice to Puerto Rico, 1928-29 to 1932-33, was 420,000 bags, clean basis. Hawaii and Pacific coast markets will remain the principal outlets. Competition from oriental rice in Hawaii will probably be less in 1934-35 than last season, owing to the small Chinese and Japanese crops. The 1934-35 export market for California-Japan will be unusually small and will remain as restricted as in 1933-34, when less than 10,000 bags were exported. By order of the Secretary of Agriculture, October 15, 1934, extra fancy California-Japan was priced at \$3.95 per 100 pounds f. o. b. San Francisco. The earlier minimum was \$3.60, but market prices in 1933-34 averaged slightly above this base.

FOREIGN SITUATION

United States rice prices are sufficiently above the world level to permit imports of rice and rice products. Imports of rough rice (in terms of clean), cleaned rice, including Patna, and flour, meal, and broken rice during the year ended with July 1934 totaled 42,000,000 pounds, compared with 22,000,000 pounds in the preceding season of 1932-33. The increase was principally in broken rice for brewing purposes, which increased from 2,846,000 pounds in 1932-33 to 26,186,000 pounds in 1933-34. Some foreign head rices compete in American markets with domestic rice. Imports from the Philippine Islands have increased rapidly; they are principally in competition with southern rices. During 1933 imports into the United States from the Philippines totaled only 221,000 pounds, whereas for the period January to August 1934 imports from those islands totaled 3,672,000 pounds. Market quotations on Philippine rices were generally under domestic prices.

The 1934 rice crop of Japan is estimated at only approximately 16,600,000 pounds, as compared with the final estimate of the 1933 production of 22,254,000,000 pounds. The October 1, 1934 carry-over, however, is placed at the record level of 5,000,000,000 pounds. The total supply, including imports from possessions, indicates relatively low prices during 1934-35 compared with No. 1 brown at San Francisco. Thus, an increase in exports of brown head rice from San Francisco is not probable. The Chinese crop is also reported to be much below the production of 1933. The 1934 production in three leading European countries (Bulgaria, Italy, and Spain) is estimated at 1,268,000,000 pounds, as compared with 1,248,000,000 pounds in 1933.

Exports from the United States to Cuba may be increased slightly during 1934-35 as a result of the new trade agreement with Cuba, which makes it less difficult for Cubans to purchase United States rice. The trade agreement with Cuba permits imports of hulled or semihulled rice from the United States at a tariff rate 50 percent below the rate applied to rice from other countries. The duty plus the consumption tax on United States hulled and semihulled rice was reduced from \$1.01 to 84 cents per 100 pounds. The duty, including the tax on rice from countries other than the United States, remains at \$1.68 per 100 pounds.

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