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THE AGRICULTURAL OUTLOOK FOR 1931

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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

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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 140,000,0000 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 crushnigs 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 carryover 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 begining 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 vailable 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 1930 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 recline, 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, $2.66 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 Januay 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 Januay 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. Slaughterings 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 fall 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 Januarly 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 13,364,000 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 southeast 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 producion 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 1830 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 12,995,000 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 Missiouri 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.

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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 seedings 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 (1925–1929) 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 northerns, pintos, baby Limas, and black eyes. The total supply of all white beans including pea beans, small whites, great northerns, 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 1924–1828 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 northerns have been maintained on a favorable level compared with prices for pea beans. The December 15 farm price of great northerns 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 1,653,600 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 midseason 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 nonbearing 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 1919–1924 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 oversupply 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, (18 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, wth 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 prevous 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 7/8-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 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 1⅛ inches and longer; while cotton of staple lengths from seven-eighths of an inch to 1$\frac{3}{32}$ 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 1¼ 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 1926, 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 consumpion. 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 Winconsin 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 Decmeber, 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 1⅜–1½ 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 maufacturers 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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