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UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Economics

THE AGRICULTURAL OUTLOOK FOR 1929

Prepared by the Staff of the
Bureau of Agricultural Economics
Assisted by Representatives of the
Agricultural Colleges and Extension Services

This report summarizes the facts as to the probable agricultural conditions of the coming season to aid farmers in making plans for the year's production and marketing of crops and livestock.

Contents

This advance mimeographed copy is for the use of the Press, radio and State workers who are preparing State and regional outlook reports.

This report will be available in a printed circular distributed by the Department about February 12, 1929.

THE GENERAL AGRICULTURAL OUTLOOK.

The agricultural outlook for 1929 is for some improvement in the midwest and east, offset by conditions in other regions possibly not quite so good as in 1928. For agriculture as a whole, total gross income will probably be maintained near its present level of around $12,000,000,000 to $12,500,000,000.

The agricultural situation for the past five years has been marked by a rising level of production and relative stability in prices paid by farmers for goods and services, such as labor, machinery, building materials, and taxes. The chief contributing factors to the upward trend of production have been dairy and poultry products, small grains, truck crops, and fruits and vegetables. In 1928 these trends continued, with prices to producers of the principal crops generally lower than in 1927, with an upward tendency in prices of most classes of livestock and livestock products, and with land values becoming more stabilized. Continued heavy production of feed crops in the face of reduced numbers of meat and work animals resulted in an unbalanced situation which threatens to prevent a continuation of the present level of return for livestock and livestock products.

Prices in recent years have fluctuated largely in response to productio changes, and except for the changes that may result from National policies designed to increase the price level of farm products, the prices of the principal products may be expected to show their usual response to changes in production and in domestic and foreign demand. If the gradual reduction in the number of farms continues, the average individual income will continue to gain somewhat by reason of the fairly stable total being divided among a steadily decreasing number.

East For the eastern States the outlook for 1929-30 is for somewhat better returns than in 1928-29. Fluid milk continues to profit from increasing demand, with no grain feed shortages anticipated; the potato situation is expected to show a recovery from the over-expanded National acreage of 1928. Demand for market hay, except alfalfa, continues poor. Fruit growers face continued heavy production, with the long-time outlook for northern peaches slightly improved. Producers of such specialized crops as cabbage, beans and sweet corn, which in general did well last year, should guard against over-expansion.

Midwest In the midwestern States agricultural income is likely to show some improvement in 1929-30. Increased returns may be expected for hogs, wheat and potatoes, whereas returns from the production of beef cattle, dairy products, and poultry are likely to continue near the 1928 basis, providing there are no material increases in production.

Meat animal production is in a strong position, and farmers are cautioned against too great an expansion of livestock production in the effort to realize higher returns on their surplus feeds than direct sale will yield. Unless corn acreage is reduced in 1929 lower corn prices may be expected. If oat acreage is increased to compensate for reduced plantings of fall wheat, oat prices are likely to be further weakened.

Low world prices for wheat may discourage producers all over the world and result in higher prices for the 1929 crop. Flax continues to be

an attractive alternative for spring grain crops in suitable areas. Low prices for the 1928 potato crop will probably result in smaller acreage and improved prices. With the possibility of increased production of clover and timothy hay in 1929 and with a shrinking demand for hay in the Southern States, the outlook for hay prices, with the exception of alfalfa, is not encouraging.

From a long time standpoint, wheat producers may expect increased competition from other wheat growing countries. Dairy products will continue to find expanding markets in cities and in sweet cream shipments eastward. Present attractive cattle prices cannot be maintained with any market increase in production such as has followed similar periods of high cattle prices in the past. The increased use of mechanical power in the Middle West is reducing the demand for feed grain crops, but is making possible the more efficient use of man power, the operation of larger units of land, and so tends to increase the gross income of the individual farmer. Farmers who expect to produce horses or mules when prices become more attractive should consider the replacement of older work animals by young mares at present prices.

Far West In the western States dry land and grazing sections can look forward to a somewhat improved wheat price situation in 1929, continued high beef prices, and lamb prices at a profitable level, even if not up to the peaks of recent years. Irrigated sections that depend on alfalfa hay and dairy products can anticipate continued good demand for those products. Sections depending on specialized fruit and vegetable products face continued keen competition, with over-expansion and low prices in many cases. Developments in these sections and in other competing areas, and the probabilities as to over-production, should be most carefully considered before new commitments are made in specialized products.

In making long-time plans, western producers should consider the possible future down-turns in the beef and sheep price cycles, and continued heavy foreign competition in wheat, general stability in and growing demands for dairy products, and the tendency for demand for fruits and vegetables to increase somewhat faster than population.

Southeast The outlook for producers throughout the south east region warrants confidence in a production program in which improvements in quality and in distribution of products, such as the greater use of legume hays, is emphasized rather than material increases in total quantities produced. In the Appalachian region and rougher sections of the Piedmont and in certain other localities where conditions are definitely favorable development of the dairy enterprise offers good prospects for increased income. Increasing competition from other States in those special fruit and vegetable crops generally grown throughout the country, in which the advantage of the South is largely that of early season, suggests caution in expanding production of those commodities and varieties which do not have virtually clear fields in consuming centers. Available resources left over after providing for acreage not in excess of last year for the major staple products may well be applied to production of home grown food and feed and to better pastures.

DOMESTIC DEMAND

Judging from recent trends in general business activity, commodity prices, and the financial situation, observers feel that business activity is likely to be maintained near the present level through most of 1929 but there may be some recession in the latter part of 1929 or early part of 1930 similar to the recessions of 1924 and 1927. If the anticipated slackening does appear, the domestic demand for the farm products of 1929-30 will be reduced somewhat below that of the current season.

Following the moderate recession in business activity at the end of 1927, there was a gradual recovery during 1928, and the year ended with somewhat better than normal business conditions, which helped sustain the markets for butter, fluid milk, wool, mohair, lambs, beef, and other farm products which are sensitive to business conditions. This general recovery was due largely to improvement in the major industries, iron and steel, automobiles, textiles, and building, which were reflected in an improvement in employment and the buying power of urban consumers.

In previous years advances in business activity, such as took place during 1928, have continued well into the following year. This suggests that the second half of 1929 will still find the domestic market at the active phase of the business cycle, with possibly a declining phase toward the end of the 1929-30 season. Several factors indicate this as a possiblity. Commodity prices in general, which usually reflect the upward and downward movements of business activity, and prices of nonagricultural products particularly, advanced steadily from the summer of 1927 to the end of 1928. The year ended with weaker agricultural prices after September, but with continued firmness in nonagricultural prices. Another factor suggesting that industrial activity is likely to continue good through the first half of 1929 is the continued rise in the price level of industrial stocks, which, after recessions in June and December, 1928, continued to make record peaks early in 1929. In the past such peaks have been reached during, or somewhat prior to, the peaks in general business activity.

The present credit situation has raised the question in the minds of many whether the peak in the present upward trend in business may not come in 1929 rather than in 1930. There has been a marked rise in interest rates during the past year. Such large advances in interest rates in the past have usually not occurred until the later stages of a period of prosperity, when they appear to have had a subsequent retarding effect, particularly on construction work. To date the only noticeable effect of interest rates higher during the last half of 1928 than during the first half, appears to be some decline in building activity during November and December. From the standpoint of general business activity this has so far been offset by present high rates of production in the automobile and metal industries.

Farmers should interpret the present business situation as holding in store one of two possiblities, either a continuation of the recent fairly active demand for farm products during most of 1929, but weaker during the first half of 1930; or else that during the last half of 1929 and the first half of 1930, demand for farm products which are sensitive to business conditions may not be quite so good as during the 1928-29 season. On the whole, the latter appears somewhat the more probable of the two possiblities.

The fact that industrial conditions are now at a high level, with some increase in prices of building materials, wages, and interest rates, suggests that farmers who are planning new construction may profit by postponing it until peak prices are passed and costs are lower. Similarly, producers of dairy products, cotton and flax, and the higher quality meats and vegetables, should make their plans with due regard to the possible effect of decreased domestic demand on the markets for their products.

FOREIGN COMPETITION AND DEMAND

Foreign demand for our agricultural products of 1929 probably will be about the same as for the products of 1928. From present indications the purchasing power of foreign consumers generally should be as good as in the present season. The purchasing power of the consumers of a few countries, particularly Germany, Poland, and Denmark, may be better than during the present season. The purchasing power of consumers in the remainder of continental Europe, in the United Kingdom, and the Orient, now seems likely to be at least as good during the present season. Competition of foreign producers in foreign markets and in the markets of the United States will probably be at least equal to that of the past season, being greater for some commodities and less for others. Somewhat less competition is to be expected in the production of pork, wheat, and rye, but more competition may be expected in corn, apples, tobacco, flaxseed, dairy products, and wool.

In general economic conditions in Europe are now better than they were a year ago. Completion of currency stabilization in all of the principal European markets for our products has rendered improbable a return to the extreme fluctuations in economic conditions that have characterized previous years. In Great Britain the industrial situation shows little or no improvement over that of a year ago and unemployment shows some increase. No significant change is anticipated, however, in the British purchasing power for agricultural products. Prospects for the sale of American products in Japan and China are better than last year.

It is difficult to forecast industrial activity and the purchasing power of foreign consumers generally, so far in advance as to cover the 1929-30 marketing season, but, barring a general industrial or financial depression, foreign market conditions will continue to improve.

Foreign competition in general continues to increase. In 1929, however, there is likely to be some slackening in competition in the production of wheat, rye, and pork. An upward trend in wheat acreage in foreign countries continues and, from the long time point of view, we may expect increasing competition from foreign wheat producers. The tendency toward expansion in wheat production is particularly noticeable in Canada and Argentina. It seems probable, however, that the low prices prevailing during the present season may cause some curtailment in wheat acreage for 1929-30. Wheat production in Russia has been reported as increasing during recent years, but there are no indications that significant quantities of Russian wheat will reach foreign markets in 1929-30. Foreign rye production is likely to be under that of 1928. Post-war rye acreage in foreign countries, excluding Russia, has been considerably below the pre-war average, and the large production of 1928 was a result of unusually favorable weather conditions rather than of increased acreage.

Our pork products are likely to meet less competition in European markets during the next 18 months than they have encountered since the middle of 1927. Indications point to a reduction in hog numbers in the principal European producing countries.

Producers of feed grains, on the other hand, may meet greater competition in 1929-30. It seems likely that the European production of feed grains will be larger in 1929 than in 1928. Two successive years of abnormally

small European corn crops have kept prices of feed grains in Europe at fairly high levels. With little or no change in the production of barley or oats in prospect, average, or better than average, corn yields in Europe would result in a considerably larger European feed grain supply.

American apples on European markets in 1929-30 will probably encounter more competition than during 1928-29 when the European crop was below average. Smaller apple crops in New Zealand and Australia, however, indicate reduced competition in the British market in the last few months of the 1928-29 season.

The tendency toward increased production of tobacco in British Empire countries appears to have been checked temporarily during the past year. This has been more true of cigarette tobacco, which competes with our bright flue-cured in the British market, than of pipe tobaccos. We may expect continued efforts on the part of Empire tobacco producers to secure a larger share of the British market. Production in 1928 of dark tobaccos in Europe which compete with American dark fired in European markets was also less than in 1927 but the trend of production appears to be upward.

Wool production in foreign countries has shown an upward trend during recent years. With favorable weather conditions, it seems probable that foreign wool production during the 1929-30 season will be no less than this season.

Cotton production in some of the newer cotton growing areas in Africa and South America was stimulated by the high cotton prices during the period of severe boll weevil damage in the United States, but the large 1926 United States crop and the subsequent low prices tended to check this expansion. In the older cotton producing areas of India and China, there have been no recent developments indicating a significant increase in competition, although the expanding cotton textile industries in the Orient furnish an incentive for larger cotton production. The total Egyptian cotton acreage shows but slight trend but there has been an upward trend in the acreage of Egyptian "Uppers", the staple which competes most directly with American long staple upland cotton and a downward trend in the acreage of Sakellarides which competes with American-Egyptian cotton.

There are indications that the competition of foreign flaxseed may be keener when the 1929 American crop is marketed than it was for the 1928 crop. The flaxseed acreage of Argentina, the most important single factor in the world market for flaxseed, continues to expand. The acreage sown for the current crop was the largest on record and, since favorable growing conditions have been reported, it is possible that the increase in Argentine production may more than offset the decreased production in the northern hemisphere.

Rice production in foreign countries is on a considerably higher level than before the war and rice prices in the Orient have tended downward in recent years. Although present low prices for rice may tend to discourage rice production in a few countries next year, there appears to be no reason to expect, over a long period, any material reduction in foreign countries.

Present prospects point to continued heavy foreign production of sugar, particularly in cane growing countries.

The trend of corn production in Argentina continues definitely upward. In 1929 corn production in Europe will probably be larger than in the past two years, when unusually low yields were obtained.

High prices in the United States have stimulated imports of beef and cattle during the past 2 years, but those imports represented a very small fraction of our total beef consumption. An upward trend is noticeable in foreign beef cattle production, but figures for 1927 in the important exporting countries were below the average of the years 1921-1925. No serious competition in our domestic market from those sources is anticipated within the next few years.

The trend in dairy production in Europe and the southern hemisphere continues upward. Strong European markets favored the movement of a larger supply of dairy products in 1928 and resulted in some reduction in imports into the United States. Indications are that foreign producers, encouraged by prices in 1928, will endeavor to maintain their output and that the pressure of foreign supplies on the American market may be somewhat greater in the winter of 1929-30 than it has been so far during the winter of 1928-29.

Substantially larger exports of both frozen and dried egg yolks were made from China to the United States in 1928 than in 1927, but exports of albumen fell off. Heavy shipments in the middle of 1928 in anticipation of an increase in the United States tariff accounted largely for the increased Chinese exports. Improved railway transportation is expected to increase the volume of eggs available in Chinese packing plants in 1929, but little increase in the importation of Chinese egg products into the United States is anticipated.

In the following review by countries of economic conditions and purchasing power, European markets, which take about three-fourths of our exports of agricultural products, are given in general in the order of their importance. China and Japan, which take about 10 per cent of our agricultural exports, are together more important as markets for our agricultural products than any other single market except Great Britain and Germany.

In Great Britain there is no evidence of a material improvement in purchasing power of the consumers of our agricultural products during 1929. Registered unemployment on December 31 totaled 1,521,000 against about 1,200,000 a year earlier. Activity in the basic industries of coal, iron, and steel has made no progress over a year ago, and the future of these industries remains quite uncertain. Activity in the manufacture of chemicals, automobiles, rubber, electrical equipment and other specialties, on the other hand, is increasing, and these industries may continue to expand. A factor making for sustained purchasing power in spite of unfavorable industrial conditions has been a more general distribution of national income.

In the cotton textile industry, the competitive position of the American section shows no apparent improvement. This industry continues to be concerned with reorganization plans to reduce production costs. Expansion of the textile industry in the Orient has probably resulted in a permanent curtailment in markets for British cotton goods in that region. It does not appear likely that Great Britain will ever again be as large a market for American cotton as before the war.

American cigarette tobacco continues to occupy a predominant position in the British market. A tendency toward a smaller percentage of American tobacco in the total British import is apparent. In 1928, tobacco from the United States represented only about 76 per cent of the total against 90 per cent in 1922, while takings of Empire tobacco increased from 7 per cent in 1922 to about 23 per cent for 1928. The larger part of the Empire tobacco, however, appears to be dark types used otherwise than in the manufacture of cigarettes, and competes with our dark flue-cured and air-cured tobacco. British imports of American flue-cured tobacco are not likely to decrease. Efforts to stimulate the use of Empire grown cigarette tobacco in Great Britain have not been very successful and some decrease in Empire production seems probable.

Pork products will probably be in a better competitive position than last year. The outlook for lard is at least as good as in 1928.

Reported short apple crops in New Zealand and Australia point to a good market for the American product in Great Britain during the last two or three months of the 1928-29 season and no reduction in demand is anticipated for the beginning of the 1929-30 season in September as against the opening of the current year. The British fruit market has a tendency to absorb increasing quantities of grapefruit and, this year, indications point to a total import larger than last year.

In Germany, the beginning of 1929 found industrial activity at a point considerably below that of the same time a year ago, but the opinion is widespread that a sound basis has been attained for future advanced activity. The decline has resulted in unemployment figures for December 31, 1928, standing at 1,830,000 against 1,400,000 a year ago. Fundamentally, however, the readjustment in industry is felt to be sound, and the textile industry is reported as anticipating a recovery in production, supported by a somewhat improved domesti demand.

The outlook for marketing pork products in Germany is somewhat better on account of the anticipated decline in the marketing of hogs in Germany and neighboring countries. The marketing of German hogs has been below 1927 since August, 1928, and will continue small into 1930. Hog prices have exceeded last year's level for several months, and the supply situation indicates a maintenance of the higher price level for another season.

German imports of American apples to date have been considerably larger than last year and at advanced prices, but competition from larger European apple crops in 1929 is likely to reduce takings of American apples next season. German demand for American dried fruit, notably prunes, continues to expand.

There has been great improvement in the industrial activity in France and the present high rate may continue through another season. Much of the improvement is attributed to the favorable effects of currency stabilization. The progress made in 1928 over the preceding year has resulted in a virtual elimination of unemployment, with some industries reporting a shortage of skilled labor. The textile mill activity is reported to be at full capacity. Domestic demand for cotton goods appears to be stronger than last year, and exports may be increased.

Industrial progress in Italy gives reason to expect a higher rate of activity in 1929 than in the preceding year, but the rate of advance has not been as rapid as in France. But better sales and increasing activity are noted for many leading industries, including cotton textiles, and there appears to be some improvement over last year in domestic buying power. In textiles, the higher rate of production reached in 1928 is expected to improve. Spinning activity was reported at 95 per cent capacity in January, with a heavy increase over last year in unfilled orders. The industry expects some increase in its export business.

Exports of American cotton to Russia so far this year are somewhat larger than a year ago, but production in that country for 1928-29 is estimated to be about 22 per cent above 1927-28. Russian textile mills contemplate consuming more cotton this year than last, depending to a larger extent upon domestic production. It is probable, therefore, that Russian demand for American cotton in 1929 will be below that of 1928. For the second successive year Russia appears to have no grains for export, which cannot fail to influence adversely the general importing plan, including cotton.

The improved industrial conditions existing in most of the remaining countries of western and northern Europe as against last year justify the expectation of a 1929 demand for American agricultural products somewhat greater than that of last year. The Polish situation is reported as unusually favorable for increased industrial activity, with the output of cotton textiles indicating larger raw cotton requirements. In most Belgian industries good conditions prevail. Occupation in the glass and textile works is not entirely satisfactory, but the situation in textiles is improving and it seems probable that the improvement can be maintained. In the Netherlands employment is high and industrial production in several important lines shows an increasing tendency. In all of the Scandinavian countries there are good indications of an improved demand for most of the American agricultural products that usually seek those markets. Denmark and Norway show signs of additional industrial improvement. Denmark's somewhat reduced pork exports are bringing better prices than last year. Sweden reports a fairly active industrial life, with good prospects for improvement.

Our exports of agricultural products to the Orient continue to expand. Exports of cotton, tobacco and wheat to China and Japan this season have been well above those of 1927-28. Cessation of civil war in China has laid the foundation for a continued growth in this trade. In both Japan and China the demand for American cotton is stronger than in 1928 with cotton mills considerably more active than a year ago. The improved Chinese demand for cotton goods affects the Japanese textile industry as well as that of China. In China a considerable quantity of native cotton is available, but there appears to be a greater demand for higher count yarn which requires American cotton.

Exports of American flue-cured tobacco to China in 1928 exceeded all previous years. This suggests the possibility that stocks are being replenished to an extent that will reduce Chinese takings in 1929, but over a longer period there are good prospects of an increasing demand from China for our flue-cured tobacco. Activity of cigarette factories at present is on a much higher level than a year ago. Factories are expected to receive more native tobacco in 1929 than usual, but the quantity involved is relatively small.

There is evidence of increasing consumption of wheat in Japan and in some parts of China where rice has always been the major item in the diet. This shift is resulting in an increasing Oriental demand for wheat and wheat flour. Our Pacific Coast wheat producers should be in a position to share in any increase in demand, but Canada will continue to offer strong competition for the Oriental wheat and flour markets. At present activity in wheat flour mills is high in both Japan and China and a strong demand for flour is reported.

AGRICULTURAL CREDIT

The credit outlook is less encouraging than twelve months ago. More strict scrutiny of farmers' applications for loans, increased rates, or both, may result from the high rates of interest prevailing in the central money markets, especially if the latter rates should continue well into the year. The generally less favorable credit situation will not affect farmers equally in all sections of the country. The effect of sectional differences in returns from farm operations exerts an important influence upon local supply of funds and upon liquidation of old loans, demand for new advances, and credit standing of borrowers.

Among the factors that have contributed to a rise of interest rates in the central markets may be mentioned a decrease in the nation's supply of monetary gold, an extraordinary activity in the securities market with an increased demand for loans by brokers and their customers, and a moderately increased demand for commercial loans.

The monetary supply of gold in the United States declined 5½ per cent in the past year. The discount rate of the twelve Federal Reserve Banks was 3½ per cent at the beginning of the year, and is now 5 per cent in eight of these banks and 4½ per cent in the other four, namely, Kansas City, Minneapolis, Dallas, and San Francisco. Rates on four to six months commercial paper advanced from about 4 to about 5½ per cent. The yield rate on Treasury 4½ per cent certificates (1947-52) advanced from 2.95 to 3.44 per cent. Call money on the New York market, quoted at about 3½ per cent in January, 1928, reached 12 per cent in recent months, the more recent quotations being about 7 to 9 per cent.

The relatively low rates quoted a year ago by the Federal Land Banks, namely, 5 per cent for ten of the banks and 5¼ per cent for the other two, have not been altered. But the bonds, by means of which these banks provide the funds for their loans to farmers, recently have carried an interest rate of 4¼ per cent instead of the 4 per cent in the previous year. It is by no means certain, therefore, that the current rate on land-bank loans could be long maintained if the present situation in the money market should be prolonged. Some of the Joint Stock Land Banks already have raised the rates slightly on their loans.

A year ago the twelve Federal Intermediate Credit Banks quoted a rate of 4½ per cent on rediscounts as well as on direct loans to farmers' cooperatives. On January 1, 1929, the Springfield bank alone maintained this rate, while in the other eleven banks rediscount rates ranged from 5½ to 5¾ per cent and rates on direct loans ranged from 5¼ to 5¾ per cent. The cost of credit from this source to individual farmers through the intermediary of banks or agricultural credit corporations is, as a rule, 2 to 2½ per cent higher than the discount rate.

The rates charged by commercial banks in principal cities on loans secured by warehouse receipts have risen during the year from 4½-6 to 5½-7 per cent, the range in each case varying to a large degree according to the commodity and to the credit rating of the warehouse receipts.

As usual, changes in interest rates on loans for agricultural purposes have lagged behind changes in rates for the various classes of loans in financial centers. Arrangements for agricultural production credit for 1928 were made in most cases before any material stiffening of interest rates had taken place. As a rule, farm mortgage rates have hitherto held close to the levels established in 1927.

Although the present credit outlook is less promising than a year ago, there are reasons to believe that the upward trend in cost of credit is temporary. The recent demand for credit on the securities market at the rates of interest that have prevailed in recent months is not likely to continue indefinitely. Moreover, the country as a whole is adding to its surplus, or loanable capital, at a relatively rapid rate; in the long run, this should effect a downward trend in interest rates.

It may also be expected that the improved economic position of farmers in a number of agricultural districts, resulting in a reduced need of credit for their 1929 production program, may in such districts more than offset the influence of the higher rates in the money markets. In districts less fortunate in 1928, the adverse change in the general credit situation will probably make itself felt in less liberal policies as to amount of credit extended rather than in the actual rate charged. The local bank-rates on short-time production loans, in areas which must borrow from outside, have seldom been lowered in response to easy money in the central markets, and are likely to show little if any response to temporarily tighter credit in these markets. In any case, as in former years, bank credit is certain to be reasonable in cost compared to the cost represented by the difference between cash prices and time prices on farmers' credit purchases.

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FARM LABOR, EQUIPMENT, AND FERTILIZER

Indications are that the available supply of labor for farm work will be somewhat smaller during the late spring and early summer and somewhat larger during the late fall of 1929 than it was during the corresponding periods of 1928. Farm wages will probably change little from those of 1928 during the first half of the year but may be somewhat lower during the last quarter.

In general, industrial labor is likely to be less fully employed during the fourth quarter of 1929 than during the same quarter of 1928. Because of the close relationship between the volume of industrial employment and the supply of farm labor, the available supply of farm labor probably will be larger during the last quarter of 1929 than it was during the last quarter of 1928.

Any increase in the farm labor supply will probably be near those industrial centers where there is a decline in industrial employment, and in the agricultural sections where the use of larger units of power and labor-saving machines is increasing or where there is a marked reduction in the production of any important crop.

Present indications are that, as during the last 3 years, there will be little change, if any, in the prices of farm machinery. Continuation of the heavy demand for the combined-harvester-thresher, for other motorized farm machinery, and for tractor-drawn implements is indicated.

Increased building activity during 1928 was reflected in a moderately rising level of prices of building materials. No material change in prices of building materials to farmers is indicated for most of 1929 but prices may turn downward during the latter part of 1929 or during the first part of 1930.

Wholesale prices of mixed fertilizers and fertilizer materials were somewhat higher in November, 1928 than in November, 1927. Decreased use of fertilizer in leading fertilizer-buying States is indicated for 1929, according to reported sales of fertilizer tags. During the period August to December, 1928, tag sales were approximately 87 per cent as large as those of the corresponding period in 1927, and December sales were about 72 per cent of the preceding December sales.

COTTON

Since a provision of the appropriation act for the U. S. Department of Agriculture prohibits the making of any statement regarding the future prices of cotton or the trend of same, no report on the outlook for cotton has been prepared. A brief review of the cotton situation prevailing during the past few years, with a summary of the present situation, may aid cotton growers in deciding upon their 1929 production program.

In 1926, growers planted 48,700,000 acres of cotton, the largest acreage on record, and obtained a yield of 182.6 pounds per acre -- the highest since 1914. Production that year was almost 17,900,000 bales. The carryover, according to the Commercial & Financial Chronicle, was nearly 5,600,000 bales, making a world supply of American cotton of about 23,500,000 bales. The price, averaging 14.4 cents per pound in the 10 designated markets, and the reduced income to cotton growers are well remembered. Low prices, and the favorable economic conditions which stimulated demand, resulted in a world consumption of nearly 15,800,000 bales of American cotton, according to the International Federation of Cotton Spinners.

In 1927, growers planted only 41,900,000 acres and the yield fell to 154.5 pounds per acre. This reduced production to 12,800,000 running bales or 13,000,000 bales of 500 pounds gross weight. The carryover, according to the Commercial & Financial Chronicle, amounted to 7,800,000 bales, making a supply of 20,600,000 bales of American cotton. Large stocks in foreign countries, together with increased prices, resulted in very low exports. Domestic consumption had reached a peak in the second half of the previous season, and although still high at the beginning of the season, declined steadily until July, 1928. Nevertheless, because of high rates of consumption in the early months, the total domestic consumption of American cotton for the year declined only 345,000 bales. Consumption in Germany and some of the other central European countries declined in the second half of the season, but this was offset by increased consumption in France and Italy. World consumption of American cotton for the 192[illegible]28 season, reported by the International Federation of cotton spinners, was 15,400,000 bales. The price of middling spot cotton at the 10 designated markets averaged 19.7 cents per pound.

By August 1, 1928, the world carryover of American cotton had been reduced to 5,100,000 running bales according to the Bureau of the Census. This was a reduction of 2,700,000 bales under the carryover of the previous year and was below the average carryover of 5,500,000 bales for the previous 8 years.

The area planted to cotton in 1928 amounted to 46,900,000 acres; the yield was 151.8 pounds per acre, resulting in a production of approximately 14,400,000 bales of 500 pounds gross weight. The decrease in carryover this season has more than offset the increase in production. The total composite supply of 19,500,000 bales is therefore 1,300,000 bales less than that for the previous season. Domestic consumption remained low during August and September, but during October, November, and December, was approximately the same as that for corresponding months last year. Total domestic consumption of American cotton for the season to date remains about 240,000 bales below that for the similar period last year.

With decreased stocks abroad, and somewhat lower cotton prices, exports have been far in advance of those a year ago. Exports to the United Kingdom for the season to date are more than double those for corresponding months in 1927. The cotton textile industries of Germany and other central European countries show a recovery from the decline which took place in the second half of last season. Their recovery appears to be based on sound agricultural and business conditions, and stocks of finished goods have apparently been reduced. In France and Italy the condition of the cotton textile industries improved materially during the past season; at present they are operating at a high rate, and current business conditions in both countries are reported as satisfactory. The situation in the Orient is characterized by the increasing political stability of China which is making it a better market for cotton goods, and a recent material improvement in the Japanese cotton textile industry.

From August 1 to December 31, 1928, the price of Middling spot cotton at the 10 designated markets averaged 18.5 cents per pound. There has been a firm demand for cotton of 15/16 inch to 1 1/32 inch staple, which has been reflected in higher prices received by growers in localities that regularly produce cotton of these lengths.

From the production standpoint, the labor situation appears to be about the same in the Cotton Belt as it was a year ago, but credit is more restricted, or available only at higher rates. In the past the quantities of fertilizers purchased have been significantly affected by the price of fertilizers and the previous year's income from cotton. Fertilizers were used liberally in 1928. At present fertilizer prices are somewhat higher than they were a year ago. The income per acre of cotton in 1928, on the basis of prices prevailing to date, has been lower, especially in some of the Southeastern cotton states where fertilizers are most necessary.

In 1928 there was considerable crop damage from boll weevil. Weevil emergence is influenced significantly by winter weather conditions and the extent of damage depends largely upon the weather during the spring and summer. During the past fall, boll weevils were as numerous as, and even more widely distributed than, in the fall of 1927. So far this winter the weather in the Cotton Belt has been relatively mild. During the past 6 years the yield of cotton has averaged 157.3 pounds per acre. In 1923, weevil damage was severe and the yield per acre was 130.6 pounds. In 1926, weevil damage was slight and weather conditions during the fall were exceptionally favorably for maturing the crop. The yield that year was 182.6 pounds per acre. The yield of 151.8 pounds per acre obtained in 1928 was about 3 per cent below the average of the 6 years.

WHEAT

It is probable that the world supply and demand for wheat in the 1929-30 season will be somewhat more favorable for marketing the wheat crop of the United States than they were in the 1928-29 season. Although there probably will be a considerable increase in the carryover in all surplus producing countries, this is likely to be offset by a continued increase in consumption and by some curtailment in the world wheat production in 1929 as a reaction from the low prices prevailing in the 1928-29 season and possibly also by lower average yields per acre.

In view of the probability of another good crop of hard red winter wheat, spring wheat farmers should hesitate to increase their acreage of hard red spring wheat, as the present acreage with average yields is sufficient to keep this class of wheat on an export basis. Prospects are favorable for somewhat higher relative returns from flax than from spring wheat, and farmers may find this crop a profitable substitute for a part of their spring wheat acreage this year in areas suitable for growing flax, if flax production is not unduly increased. Growers of soft red winter wheat are likely to continue in a more favorable position than producers of other classes of wheat. Unless the acreage of durum wheat is materially curtailed in the United States, or production in other countries is short, prices will probably continue relatively low during the 1929-30 season.

The world's demand for wheat appears to be increasing steadily. The growth of population naturally increases the demand for wheat. Further, there appears to be a definite tendency, both in Continental Europe and the Orient, to shift from the consumption of other breadstuffs to wheat. Growth in demand is evident from the fact that the world supply last year was as great as that of 1923, but the price of wheat, both in the United States and in foreign countries, averaged considerably higher in the 1927-28 season than in the 1923-24 season; and this year's supply which now appears to be 5 per cent greater than the 1923-24 supply is selling at average prices slightly above the prices prevailing through 1923-24. This is probably due to the increased purchasing power of foreign consumers, as well as growth in population and shifts from consumption of other breadstuffs. The present low prices will probably give an impetus to wheat consumption that will result in more than the normal average increase in demand for wheat.

The wheat production of 44 countries, which last year produced 96 per cent of the world's crop outside of Russia and China, is now estimated to be about 3,612,000,000 bushels, as compared with 3,428,000,000 bushels, officially estimated for 1927.

Some increase in the world carryover of wheat at the beginning of the 1929-30 season is to be expected, although the low prices of wheat for the present season are undoubtedly causing considerable increase in consumption, particularly for feed, in this country and in Europe. The present season also began with some increase in carryover. Taking this increase and the increased crop together, it appears that the world's supply of wheat for the 1928-29 season is about 5 per cent greater than for the 1927-28 season.

The world's crop is being absorbed at a good rate. Notwithstanding some increase in the European production, exports from surplus-producing countries have been large. It is estimated that world exports since July 1 have amounted to about 514,000,000 bushels, as compared with 433,000,000 bushels for the corresponding period last year.

Although current low prices may check temporarily world expansion of wheat acreage, American producers are faced with a long-time tendency to continue to expand wheat production in many countries. Low prices in 1923 reduced the wheat area of 44 countries from 220,000,000 acres in 1923 to 215,000,000 acres in 1924, followed by a gradual increase to 233,000,000 acres by 1928. Reductions in fall sown areas of wheat in the United States, Canada and Bulgaria are in line with what happened in 1924 in response to the low prices for the 1923 crop. The reduction in the fall sown wheat area of Canada from 1,033,000 acres to 951,000 acres is not very important except as being indicative of a tendency. Reports indicate that good progress was made in the fall plowings for spring grain in Canada, but it is probable that the low prices and low quality of much of this year's Canadian crop will at least check the expansion of the spring wheat area of Canada in 1929, but there are still extensive areas in western Canada which will eventually be planted to wheat. This is also true to a lesser degree in Argentina and Australia. Not much if any expansion of wheat area is to be expected this year in Europe outside of Russia. Reports received to date indicate slight increases in Czechoslovakia and Prussia, which are offset by a reported decrease in Bulgaria. The wheat area of most European countries has recovered from the effects of the war and any expansion beyond present area is likely to be small even under favorable conditions. Fall seedings were made in Europe under generally favorable weather conditions, but prices even in Europe have been low enough to discourage further expansions in area.

Russia continues to be an uncertain factor. It is reported that the Russian wheat harvest of 1928 was greater than that of 1927, but a shortage in the rye crop and other conditions have prevented any exports, and it is reported that Russia is likely to import before the end of the present marketing season and this will be a factor in determining the quantity of the carryover at the end of the year. Fall seedings in the Ukraine are reported to be only 92 per cent of what was planned. Russia will make an effort to make up for this in spring plantings. Whether or not the spring wheat area is expanded will of course depend to some extent upon weather conditions as well as upon the ability of the Government to carry through its program.

WINTER WHEAT: The area seeded to winter wheat in the United States in the fall of 1928 is estimated to be 43,228,000 acres. This represents a decrease in acreage of 8.6 per cent under seedings in the fall of 1927, but still over 3 per cent larger than the 5-year average acreage (1923-1927). The decrease was most pronounced in the Eastern Corn Belt States where it was 20 per cent and in the winter wheat sections of Minnesota, South Dakota, and Montana where it was 40 per cent. In other sections the decreases were much lower, ranging from 4 per cent in the hard winter and Pacific Coast

States to 6 per cent in the Appalachian States.

Because of unprecedented abandonment, particularly in the Ohio Valley, the production of soft red winter wheat in 1928 was the lowest in recent years. This low production is reflected in the market price premiums now prevailing for this class of wheat. With the rather marked decrease in fall seedings in 1928, prospects are good for a continuation of premiums on this class. Despite rather heavy abandonment, the production of hard red winter wheat in 1928 was close to 75,000,000 bushels larger than the previous year's production which was above the last five-year average production. This large production has kept this class on an export basis and selling at the lowest prices since 1924. The 1928 production of white wheat was slightly below the large production in 1927. The indicated decrease of 4 per cent in the acreage seeded in the Pacific Coast States probably is not significant, as reduced seedings in the fall have usually been followed by increased seedings the next spring. The present acreage with average yields is sufficient to keep this class of wheat on an export basis.

Notwithstanding the lower acreage seeded to winter wheat this year it is still large enough, with average yields and abandonment, to produce a crop of around 570,000,000 bushels in 1929. This would be only slightly smaller than the production in 1928, and still some 15,000,000 to 20,000,000 bushels above the average for the preceding 5 years.

HARD RED SPRING WHEAT: Another large crop of hard red spring wheat was harvested in 1928. This, added to a large production in 1927, has kept this class definitely on an export basis and selling at the lowest prices since the 1923-24 crop year. In view of the probability of another large crop of hard winter wheat in 1929, spring wheat farmers should hesitate to increase their present acreage of hard spring wheat. They may find it advantageous to decrease it somewhat, particularly if the hard winter wheat crop comes through the winter in good condition. Should excessive abandonment occur again in the hard winter wheat States this year the situation will become more favorable for the spring wheat grower, but probably not to the extent of warranting further expansion in acreage as the present acreage with average yields is sufficient to keep the price of this class of wheat at the world level. The low prices and low quality of much of the 1928 Canadian crop may tend to check, temporarily at least, an expansion of the spring wheat area in western Canada, which will be to the advantage of spring wheat growers in the United States.

DURUM WHEAT: Durum wheat prices will probably continue relatively low, unless the acreage in the United States is materially curtailed or production in other competing countries reduced. However, in areas where materially higher yields of durum are secured it may be as profitable a crop as hard spring wheat.

Little is known yet about the prospects for the 1929 crops in Italy and North Africa. Conditions have been favorable for seeding the crop in Tunis and Algeria. As long as the United States produces a surplus of durum wheat, in the face of increasing Canadian competition, durum wheat

producers can hardly expect any material improvement in prices over those of the past two seasons unless the crops of North Africa and Southern Italy are extremely short.

Durum wheat production has been rapidly expanding in Canada as well as in the United States. Production in the United States in 1928 was estimated at 93,000,000 bushels, compared with 79,000,000 bushels in 1927. Canadian inspections to December 31, 1928 were about 22,000,000 bushels of durum compared with 12,000,000 bushels inspected to that date last year.

The domestic consumption of durum is increasing. Formerly large quantities of macaroni products were imported from Italy. Now domestic mills supply 99 per cent of the domestic requirements and are competing with the Italian products in foreign markets. Mill grindings of durum wheat during the 1927-28 crop year totaled 14,600,000 bushels or the largest quantity of any year for which statistics are available. A somewhat larger quantity, roughly estimated by the trade at 20,000,000 bushels, is used annually in the manufacture of mixed feeds. The relatively low wheat prices this year, particularly for red durum, have stimulated increased consumption of this class of wheat as a substitute for other feedstuffs and for use in mixed feeds. In some instances the proportion of red durum in mixed feeds has been doubled. On the other hand, the scarcity of offerings of high quality milling durum has resulted in unusually high premiums for this type over ordinary grades. At the low prices now prevailing, about 50,000,000 bushels of durum will be used in the United States for seed, feed, and food.

RYE

Domestic production of rye continued to decline in 1928. It was 41,766,000 bushels compared with 58,164,000 in 1927, and an average of 63,831,000 for the previous five years. The area seeded for harvest in 1929 is estimated at 15.5 per cent less than that sown the previous year, or a total of 3,293,000 acres. North Dakota, the principal rye State, showed a reduction of 30 per cent. Even with fair to good yields, domestic production of rye in 1929 will not be large. As rye prices depend upon wheat prices, the reduced production of rye can not be expected to improve prices unless there is an improvement in wheat prices.

Although production in the United States is relatively small, some rye is exported, and domestic prices are largely determined by the supply of rye and of wheat in other countries. The world production of rye for 24 countries in 1928 was 920,614,000 bushels compared with 842,840,000 bushels in 1927. This total does not include the Russian crop, which was estimated at 783,433,000 bushels against 933,033,000 bushels in 1927, a decrease of 16 per cent.

World rye production is decreasing. The area harvested in 1928 was less than the pre-war (1909-13) average, and less than the area of 1925. The peak of world production, outside of Russia, was reached in 1925. The increase in production in 1928 over 1927 was due to higher yields on a reduced area, and the production is still considerably below that of 1925.

FLAX

Present indications are that flax will be a relatively more profitable crop in 1929 than other spring grains grown for market in the areas suitable for flax production. A 30 per cent increase in acreage would still probably leave our production well below domestic requirements, but the relatively high prices received for the 1928 short crop are not likely to be maintained if production is materially increased.

Nearly 45,000,000 bushels of flaxseed were used in the United States during the year ended September 30, 1928. This is about 14,000,000 bushels over the record production of 1924 when yields of slightly over 9 bushels were obtained on a record acreage of 5,649,000 acres.

Because of a shorter crop in the Northern Hemisphere and a somewhat smaller carryover of seed the world supply of flaxseed for the current year, 1928-29, probably will not be quite so large as last year. Most of the reduction in the world's crop occurred in the United States and Canada where the combined production was only about three-fourths of that of the previous year. There was a decrease of 6,500,000 bushels in the domestic crop alone which has resulted, with the aid of the tariff, in keeping Minneapolis prices of flaxseed at substantial premiums over prices at Winnipeg and at Buenos Aires. Just what the final outturn of the Argentine crop will be is not definitely known as no official estimate of the crop is as yet available. A record area of 7,297,000 acres was seeded and the prospects are favorable for another large crop, but it probably will not be large enough to offset the decrease in other parts of the world. Early estimates indicate an Indian crop of about the same size as last year, which was around 2,000,000 bushels smaller than the crop of 1927.

Record quantities of linseed oil passed into consumption in the United States in 1928 but there are still large stocks on hand which may restrict crushings somewhat during the 1928-29 crop year. Consumption of oil during 1928 was over 5 per cent higher than for the corresponding period in 1927 and present relatively low prices favor continued heavy consumption. Strong demand for linseed meal and cake will probably continue to be a strengthening factor in flaxseed prices. Prices of meal on January 1 were $10 per ton higher than a year ago, and these high prices have tended to offset the low prices of oil.

European demand will be a dominant factor in the world's flax markets again this spring. Present conditions are favorable for continued heavy importations of flaxseed into western European countries because of relatively low prices of flaxseed in the Argentine and a strong demand for linseed meal and cake both in the United Kingdom and on the Continent. Limited feed supplies in important consuming areas are reported again this year and the relatively high price of American cottonseed cake is likely to strengthen the demand for linseed meal. The short crops of flax in the United States and Canada will probably result in larger importations of Argentine flax into the United States, thus decreasing somewhat the total going to Europe.

The present relatively high prices of flaxseed in the United States compared with prices of other grains may influence farmers to expand their flax acreage in 1929 as they did in 1924, following the favorable prices of 1923. This probably will be to their advantage, particularly in the case of farmers who have land on which good yields of flax can be reasonably expected, as with average yields flax promises to be a more profitable crop than wheat or other spring grains.

RICE

The outlook for rice is better than it was last year. Prospects are that the carryover of rice both in the Southern States and in California will be lower at the beginning of the 1929-30 season than at the beginning of the 1928-29 season. An average yield on the same acreage as last season would produce smaller quantities, and with normal market conditions the price for the 1929 crop should be somewhat better than for the 1928 crop. The prospective improvement in the price of rice, however, is not sufficient to justify an expansion in acreage. Although the present low prices of rice in the world markets may discourage production next year in some foreign countries, it appears that over a longer period American rice producers can expect no material decline in foreign competition.

The total quantity of rice from Louisiana, Arkansas, and Texas available for distribution during 1928-29 was less than in the preceding season. A slight reduction in acreage and somewhat lower average yields per acre resulted in a decrease of about 6.5 per cent in the 1928 production as compared with 1927. Larger exports of southern rice during 1927-28, notably to Cuba and to other Latin American markets, contributed to a reduction in the carryover of rice into the present season. Exports during the first five months of this season have exceeded those of the same period last year with practically all of the leading markets taking more than last year. The low prices now prevailing put southern rice in a good competitive position in foreign markets, and the outlook is good for an increase over last year's relatively large exports. Some increase is indicated in the 1928-29 exportable surplus of Burma, Indo-China, and Siam, the principal Asiatic rice exporters. The Chinese rice crop is reported to be poor, however, which may tend to reduce, to some extent, shipments to Europe and to Latin America where American rice is sold. The 1928 production of rice in Spain and Italy was the smallest in three years, which fact should prove favorable to the disposition of American rice in Great Britain and certain Latin American markets. Shipments of rice to the protected market of Porto Rico have been on a considerably higher level than in 1927-28. These factors point to a still further reduction in the quantity of rice carried over into the 1929-30 season.

The prospects are for larger exports of California rice this season and a consequent reduction in the carryover into 1929-30. The supply of California rice available for distribution in 1928-29 was somewhat larger than in 1927-28. The 1928 production was almost 10 per cent smaller than in 1927 but the very small exports of California rice to Japan during 1927-28 season resulted in a considerable increase in the carryover. Rice production in Japan and its territories in 1928 was about 7 per cent smaller than the record crop of 1927. Further, the general economic situation in Japan appears to be better than last year. Decrease in production of rice in Spain lessens the threat of competition from that source in British Columbia. The fact that the quality of the California crop is good this year should facilitate the marketing in foreign countries. Shipments of rice to Hawaii, the principal market for California rice, have been on a considerably higher level than last year.

OATS

The low farm price of oats again this season emphasizes the limited market for this grain and the desirability of restricting production for sale to localities where conditions are particularly favorable for good yields. Last year's acreage with average yields should not be expected to yield more profitable returns to farmers in the principal producing States than were obtained from the 1928 crop, particularly if barley production in these areas is maintained near the high levels of the past two years and the supply of corn is materially increased.

As pointed out last year, the decline in the horse population has materially reduced the yearly requirements of oats. Use of oats for dairy cattle and in mixed feeds has shown some tendency to increase, but abundant supplies of barley during the past two years have competed actively with oats as a dairy feed, and for other feed purposes.

The 1928 acreage was slightly below that of 1927, but yields were above average, producing a crop of 1,450,000,000 bushels, or about 267,000,000 bushels more than the small 1927 harvest. As carryover was small, the supply for the current season was only about 238,000,000 bushels over that of the previous crop year. The 1928 crop was of better quality than that of the year before, and premiums which prevailed last season for the heavier weight grain were not obtained this season. Prices of oats at the principal markets January 1, 1929, averaged about 45¢ per bushel compared with 54¢, January 1, 1928.

Slow demand and low prices restricted marketing, and receipts at the principal markets from August 1 through December were only about 6,000,000 bushels larger than for the corresoonding period during 1927, when the surplus was much smaller. This increase in arrivals was more than accounted for in increased accumulations in market stocks and increased exports compared with a year ago so that takings by domestic buyers appear to be materially smaller this season. Farm stocks of oats, January 1, were about 25 per cent larger than a year ago and indications are that stocks at the close of this season will be larger than the carryover of either of the past two seasons, and will be a weakening factor in the market next year.

BARLEY

Little if any improvement in the market for cash barley may be expected for the 1929 crop, even should acreage be somewhat reduced and average yields secured. Exports to Europe as large as from the past two crops are not probable for the 1928 harvest, and there are no prospects of increased domestic requirements for feed grains. The 1928 crop was well above domestic needs because of a record acreage and yields 17 per cent above average, and prices declined to the lowest point since 1923, notwithstanding record shipments overseas. Relatively large stocks have accumulated in the markets, and indications are that larger quantities than usual will remain on farms and in commercial channels at the close of the season to compete with the 1929 crop.

Barley acreage in the United States in 1928 increased to 12,539,000, or nearly 2,800,000 acres above any previous year. With good yields, a crop estimated at nearly 357,000,000 bushels, or about 90,000,000 bushels more than the previous record crop of 1927, was produced. Stocks of corn and of other feed grains from the 1927 harvest was practically exhausted when the 1928 crop of barley became available, and large marketings passed rapidly into consuming channels. Shortage of feed supplies in Europe and relatively low prices of barley, brought an active export movement, and exports from August 1 through December amounted to more than the total exports for any previous year. Farm consumption of barley appears to have been larger than usual this season. The short supply of corn last fall and high prices of millfeeds and concentrates caused farmers, particularly in the North Central States, to use more barley and oats.

Notwithstanding the unusually heavy movement of barley into consumption and for export, farm prices at the first of December averaged only about 55 cents per bushel. This was 22 cents per bushel lower than the farm price December 1, 1927, and was the lowest since 1923.

California barley may meet slightly less competition in the world market in 1929 than was encountered by the 1928 crop. Record shipments to European markets from the record crop in the eastern United States and Canada tended to restrict the demand for California barley of other than choice malting quality, and Pacific Coast exports for the season to date have been but little larger than last season, although the crop was about 4,500,000 bushels larger. Stocks on farms and in trade channels in California at the first of December were materially greater than a year ago, and suggest a carryover at the beginning of the new crop year, June 1, above that on the same date a year ago.

In the three most important producing States, North Dakota, South Dakota, and Minnesota, the 1928 barley acreage was 2,100,000 acres greater, and oats acreage, 1,700,000 acres less, than in 1925. This tendency to substitute barley for oats may be largely ascribed to the unusually greater net return per acre from barley than from oats in that section.

With prices existing on December 1, 1928, and assuming average yields, the gross return is about $1.50 per acre in favor of barley. Production costs are probably nearly the same for these crops. Therefore, it seems likely that the preference for barley as compared with oats will continue.

CORN

With no material change in corn acreage in the different sections of the country anticipated, and with average yields, a 1929 crop slightly smaller than the 1928 crop may be expected. With lower feeding requirements and probably a lower European demand for American corn, prices may be lower than for the crops of 1927 and 1928. Corn price changes the next few months will be materially influenced by corn crop prospects in Argentina. Corn prices during the summer, although largely determined by new crop prospects, will probably not be supported this year by unusually short farm supplies.

Total supply of corn at the beginning of this season was about the same as in each of the two preceding years but slightly less than in 1925. The 1928 crop was nearly 3 per cent larger than in 1927, but the carry-over on farms and in the channels of trade was very small. The 1928 harvest was characterized by a shortage in the Southern States and a generally good crop elsewhere, while in 1927 there was a marked shortage in the East North Central States. With about 75 per cent of the crop in the North Central States, the distribution of the 1928 harvest resembled the 1925 crop when 77 per cent was in this region. The South also had a short crop in 1925. Changes in the location of this season's supplies are reflected in farm prices which were from 1 to 9 cents lower in Illinois, Wisconsin, Minnesota, Iowa, Missouri, and North Dakota, on December 15 than a year ago, but from 1 to 4 cents higher in Kansas, Nebraska, South Dakota, Indiana, and Ohio, and from 2 to 25 cents higher in Southern and Eastern States.

Supply of other feed grains at the beginning of the crop season was considerably larger than for any year since 1925. The 1928 production of feed grains along the Atlantic Seaboard, and in the Cotton Belt, was much smaller than a year ago. Total supply of oats this season is about 18 per cent larger than in 1927, but nearly 8 per cent lower than in 1925. Barley supplies are the largest on record, and the production of grain sorghums appears to be about 3.5 per cent greater than the 1927 harvest. The supply of by-product feeds will probably be larger than last year.

Supplies of corn on farms January 1 were slightly less than a year ago for the country as a whole. Supplies were slightly smaller in the West North Central States, fully 30 per cent larger in the East North Central States, but nearly 20 per cent smaller in the South.

Last winter corn prices made a marked seasonal advance from December to May, and were maintained at about the high May level until August, 1928. Market prices made some declines from August to October and dropped abruptly to a new crop basis of about 80 cents per bushel during the latter part of October.

In spite of larger total supplies of feed grains in 1928, central market prices of corn to date for the 1928 crop have been about the same as last season. Small stocks at the beginning of the season, combined with delayed marketing of the 1927 fall pig crop, and increased numbers of cattle on feed, resulted in earlier and heavier feeding of new corn than usual. Smaller feed grain supplies in the South and East, and stronger export demand have also supported corn prices.

Demand for feeding this spring and summer is likely to be less than last year as there are apparently fewer hogs to feed and there is a continued downward trend in the number of horses and mules.

European demand for American corn will undoubtedly slacken as Argentine supplies become available; but this may be offset as the season advances by demand from Southern States where the crop is unusually short. The earlier marketing of the winter run of hogs this year will deprive the corn market of considerable support that it had during the late winter months last year. If corn crop prospects in Argentina improve, it is possible that the usual seasonal advance in prices from February to May will be delayed. Corn prices during the late spring and summer will be determined largely by new crop prospects, but they will probably not be supported by unusually short supplies of old corn as in 1928.

No important shifts in corn acreage in the United States for 1929 can be foreseen now. Only in years of unfavorable weather during the spring and summer is the acreage likely to be much less than last year in the East North Central States. In the West North Central States neither the change in planted winter wheat acreage, or the average value per acre of corn was sufficient last fall to indicate any material change in corn acreage in 1929. Corn acreage remained the same in the South following the short 1925 crop, and there are no acreage shifts in prospect in these States that would suggest any material change in acreage for 1929. The relatively small acreages in the North Atlantic and Far Western States will probably remain about the same as in 1928. With average yields in these areas, a crop little smaller than the 1928 crop would be produced in 1929, and the South would have a larger crop than this season. Farm carry-over will probably be larger in the fall of 1929 than the extremely small carry-over last fall.

There will probably be fewer livestock to be fed from the 1929 crop than are being fed from the 1928 crop. If corn crops in Europe and Argentina are average, the foreign situation will not be as strong as at present. It is probable that both domestic and foreign demand will be lower next winter than at present. If average corn yields are secured on acreages not materially different from 1928, it is not likely that prices will equal those of the present season.

BEEF CATTLE

The outlook for the cattle industry continues favorable with prices about at the peak of the cycle. In the past, price situations like that now prevailing have been followed by increased production and reduced prices. This, therefore, does not appear to be a favorable time for new producers to enter the industry. Those already in may profit by moderate expansion during the next two or three years even though prices go somewhat lower.

Market supplies in 1928 were less than in 1927 and further reduction in 1929 is indicated. The decrease, however, probably will not be as great as in 1928. Supplies of grain-finished cattle during the first half of 1929 will probably equal or exceed those in the first half of 1928. Any increase in such cattle, however, is likely to be offset by decreased supplies of other kinds of slaughter cattle. Demand for beef, consequently for slaughter cattle, is not expected to differ greatly from that of 1928. Although top prices of slaughter cattle may be higher than last year, average prices are not expected to be greatly different. Feeder cattle prices probably will not average as high as during 1928.

The number of all cattle on farms January 1, 1929 was about the same as on January 1, 1928. The Department estimates the number of all cattle on January 1, 1929 at 55,751,000 head, which is 70,000 head, or 0.1% more than on January 1, 1928. This small change during 1928 indicates that births and imports during the year were about equivalent to total slaughter and death losses. The composition of the total cattle herd on January 1, 1929, differed slightly from that of 1928. There was some increase this year in the proportion of yearling heifers and heifer calves and steers, but a decrease in the proportion of cows.

Total inspected cattle and calf slaughter in 1928 decreased about 1,250,000 head from that of 1927, and 2,185,000 head from the record slaughter of 1926. Apparently the present breeding herd of the country can produce enough calves to maintain cattle numbers at about the present level, and permit an inspected slaughter of domestic cattle and calves of about 13,000,000 head - the slaughter in 1928. If cattle numbers are to increase, a further reduction in slaughter will be necessary for several years to permit the building up of breeding herds. Such reduction may come in the slaughter of either cows or heifer calves, or both.

According to Department estimates there was an increase of about 3 per cent in the number of cattle on feed in the Corn Belt on January 1, compared with January 1, 1928, partly offset by a decrease in the Western States. This increase in feeding will be reflected in increased supplies of grain-finished cattle during the first half of 1929. It seems highly probable, however, that this increase will be at least offset by decreased supplies of other kinds of slaughter cattle, and that total slaughter will be no larger than during the first half of 1928. The average grade of cattle slaughtered will be higher because of an increased proportion of grain-finished kinds.

Supplies of grain-finished cattle during the last half of 1929 are likely to be smaller than for the corresponding period of 1928, unless there is an unexpected advance in prices for fat cattle during the next few months. Supplies of grass cattle and stockers and feeders may show some decrease compared with 1928 if, during the next six months, the level of cattle prices shows no more than the usual seasonal decline, and cattle growers become more confident that the present level is fairly established for some years.

So long as there are no changes in present regulations governing importations of meat animals and meat products into the United States, there seems to be no reason to anticipate serious competition from foreign sources in our domestic market. Although imports of cattle, calves, beef, and veal showed a considerable percentage increase during 1928 over the preceding year, they were equivalent to only about 5.6 per cent of our total supply of beef and veal.

Imports of cattle and calves during the eleven months ended November 1928 totaled 492,657 compared with 385,670 during the corresponding period in 1927. Practically all of these came from Mexico and from Canada.

Imports of beef and veal during the same period amounted to 56,755,000 pounds compared with 31,908,000 pounds in 1927. In previous years, practically all of New Zealand's surplus beef went to Great Britain, but in 1928 prices in the United States were sufficiently favorable to attract 30,167,000 pounds of beef and veal from that distant country during the first eleven months of the year. However, the total number of cattle in New Zealand has ranged from 3.6 million headin 1924 to about 3 million in 1928.

Although imports of beef and veal from Argentina are still confined to canned products, there is an indirect competition from Argentine beef because low prices of this beef in Great Britain exclude the Canadian surplus from that market and practically force it on the American market.

Demand for slaughter cattle in 1929 is likely to about equal that of 1928. Demand for beef probably will show little or no change. Any decrease which might result from less favorable business conditions may be offset by smaller supplies and higher prices of other meats.

Feeder cattle are expected to be in good demand throughout the year, but speculative activity similar to that which characterized the market during the summer and early fall of 1928 is not expected.

In general the seasonal movement of prices of all kinds of cattle in 1929 will be more nearly normal than was the case in either 1927 or 1928 when seasonal price movements were greatly confused and at times obliterated by a progressive reduction in market supplies.

The general level of cattle prices in 1929 probably will not continue the rise which has been under way since 1924.

In 1927 a decrease of 8.4 per cent in beef derived from inspected slaughter was accompanied by a rise of 17.9 per cent in average cost of cattle to packers. In 1928 supplies dropped off 10.7 per cent compared with 1927 and the average cost of cattle advanced 22.8 per cent. In both years a decrease of one per cent in supply was accompanied by an increase of 2.1 per cent in average cost. This is considerably above the usual increase in price for such a decrease in supply. In view of the present relatively high level of beef and cattle prices it is not to be expected that a further reduction in supplies will be accompanied by commensurate advance in prices.

Slaughter-cattle prices in the first half of the year are expected to show seasonal movements similar to those which occurred in 1928. The decline on the better grades, now in progress, began about the middle of last September which was nearly four months earlier than the tardy decline of the year previous. The low point in prices of such cattle this spring is expected to be slightly below that reached in May 1928. The relative scarcity of lower grade cattle probably will result in higher average prices for such kinds than prevailed during the first half of 1928. The general average of all slaughter cattle prices, however, will not be much different than during the first half of last year.

During the second half of the year, slaughter-cattle prices may reach a peak higher than in 1928, but average prices will probably be little if any higher. During the greater part of the year lightweight cattle will be in better demand and will command some premium over comparable grades of medium and heavyweights, but during the last few months choice heavyweight cattle may sell at a premium.

Feeder-cattle prices in 1929 probably will not average as high as in 1928 since it is not likely that the exceptionally strong demand which prevailed during the first 9 months of 1928 will be in evidence in 1929.

When prices are at the peak of a cycle, however, it is usually not a good time for newcomers to enter any business. The present level of cattle prices can be expected to encourage increased cattle production, if producers generally become convinced that it will be maintained for some years. The rapid advance in prices during the past two years, however, tended to increase the risks of increased production, especially on the part of new operators, and thus acted as a brake on the tendency toward expansion. In view of the probable steady increase in milk stock, which gives only a low beef outturn, some increase in beef cattle numbers, on the part of men now in the business, seems desirable to keep pace with increased population and to provide a per capita supply of beef at least as large as in 1928. Maintenance of the present production policy of quick turnovers by marketing at younger ages with a gradual building up of breeding herds, which makes possible more rapid readjustment to price changes, seems preferable to the more speculative one of keeping steers to an older age and heavier weight - which means holding out of the normal supply of one year, stock to be added to that of the following.

Hogs

The hog outlook for 1929 is favorable. Slaughter is expected to be considerably smaller than in 1928, with some improvement in foreign demand and no material change in domestic demand. The seasonal levels of hog prices in 1929 and 1930 are expected to average higher than in 1928. If higher hog prices this year stimulate increased hog breeding in late 1929, increased marketings in the winter of 1930-31 will again start the hog-price cycle downward. Stabilization of hog production at a level represented by the pig crop of 1928 appears to be the most suitable program for securing a profitable balance between corn and hog production in the Corn Belt.

The combined spring and fall pig crop of 1928, as indicated by the pig surveys, was about 5 per cent smaller for the Corn Belt and 6.5 per cent smaller for the United States than the crop of 1927. Distribution of the 1928 crop over the Corn Belt States was in better relation to corn supplies than that of the 1927 crop, since a larger-than-usual proportion of the latter crop was produced in the Corn Belt States east of the Mississippi River where corn production was much below normal in 1927.

Estimated number of hogs on farms on January 1, 1929 was 54,956,000 head compared with the revised estimate of 60,420,000 on January 1, 1928.

Information as to hog supplies for the marketing-year, November 1928 to October 1929, indicates an unexpected slaughter of 44,000,000 to 46,000,000 head, which compares with a slaughter of 48,100,000 for the crop-year 1927-28, 43,100,000 for 1926-27 and 40,800,000 for 1925-26. The decrease for this crop-year from that of 1927-28 is thus indicated as from 2,000,000 to 4,000,000 head. Slaughter in November and December of the present crop-year was about 1,680,000 head larger than for these two months a year ago. The supply of hogs for the remaining ten months of this crop-year, January to October, inclusive is thus indicated as from 3,500,000 to 5,500,000 head smaller than for the same months in 1928. The greater part of this decrease is expected to occur during the period February to June. The indicated decrease in prospective slaughter supplies is partially offset by an increase in storage supplies of pork and lard on January 1 over a year ago of 176,000,000 pounds which is equivalent to about 1,100,000 hogs.

These estimates of slaughter supplies are based upon (1) the 1928 pig surveys, which indicated a decrease in the total pig crop of the Corn Belt in 1928 at about 3,200,000 head and of the United States at about 5,400,000 head as compared with 1927; (2) the relationship of the slaughter in November-December 1928, to total winter slaughter; (3) the probable proportion of winter slaughter to slaughter for the crop year, and (4) the estimated number of hogs on farms January 1, 1929 compared with the numbers on January 1, 1928 and 1927.

The indicated reduction in the 1928 fall pig crop in the Corn Belt as compared with the fall crop of 1927, together with an indicated reduction in the number of sows to farrow next spring, points to slaughter supplies next summer and fall slightly smaller than in the corresponding seasons of 1928. Distribution of marketings during this period is expected to be more even than in 1928. Last summer the scarcity and high price of corn apparently

caused many producers to carry on grass, hogs which ordinarily would have been marketed earlier. When new crop corn became available these hogs were finished out as quickly as possible, resulting in a larger-than-usual proportion of old crop hogs in late September, October and early November marketings.

December reports on the number of sows bred, or to be bred, for spring farrow in 1929, point to a decrease in the spring pig crop, assuming a relationship between breeding intentions and actual farrowings similar to that of other years. For the Corn Belt this reduction is indicated as from 4 to 9 per cent. If such a reduction takes place the supply of hogs for the winter of 1929-30 will be less than for this winter.

Present supplies of corn in the Corn Belt are normally distributed and no unusual movement of corn from surplus to deficit areas, such as occurred last year, is to be expected. The corn-hog ratio of 12.0 in Iowa on December 15 was somewhat more favorable to hog feeding than a year ago, when it was 10.5. Since no material change in corn acreage in 1929 can be foreseen at present, an average yield per acre would insure a supply of corn for feeding next fall and winter larger in proportion to feeding requirements than this winter, if hog production is curtailed to the extent now indicated.

Domestic demand for pork products this winter, as measured by the relationship between wholesale prices and the volume of products moving into consumptive channels, appears to be somewhat stronger than the relatively low demand which prevailed in late 1927 and the first half of 1928. No material change in the present level of demand seems likely during the next six months. If some slackening in demand in the winter of 1929-30 should occur as the result of decreased business activity, this will be more than offset by the probable reduction in hog supplies.

Factors affecting the foreign demand for American pork products have a more favorable aspect for the 1928-29 season than a year ago. The outstanding points are: (1) fewer hogs in Europe, as indicated by reduced numbers of breeding sows and smaller current marketings; (2) a feed supply in Europe no larger than the relatively small supply of last year, and higher prices for some imported feeds, all of which tends to discourage increased breeding; (3) a European price level for hogs and hog products other than lard, substantially above last year; these increases over last year to date being relatively larger than the increases in the United States, and (4) somewhat improved buying power on the Continent, and no decrease probable in Great Britain. The European feed situation can not show any material improvement before the harvest of the 1929 crop. The outturn at that time will be a factor in determining breeding operations next fall, but if increased hog numbers are the result, they could not become a depressing factor before the fall of 1930.

These favorable factors may be expected to result in an increase in export demand for American pork and lard during 1928-29 as against 1927-28. In Great Britain, the leading foreign market for American pork products, the indicated reduced supplies of cured pork from the Continent should place

the American products in a better competitive position. The British demand for lard during recent years has fluctuated within relatively narrow limits, and the total quantities of lard taken in 1929 should be no smaller than the imports in 1928 unless American lard prices advance markedly above last year.

In Germany, the outlook is for a season of higher pork prices as compared with last year. With conditions in neighboring countries substantially the same as those prevailing in Germany, that country should offer a better outlet this year than last for American hog products, especially for lard. Since livestock production plans in Europe, especially on the Continent, are designed to meet domestic requirements so far as possible, production plans in America should take into consideration that the European outlet for American hog products can not be expected to equal average exports since the war.

Hog prices apparently reached the low point of the winter season the week ending December 15, when the average at Chicago was $8.50. Prices subsequently moved gradually upward until the fourth week in January when a sharp advance carried the average to approximately $9.50 or about $1.35 higher than a year ago.

On the basis of indicated supply and demand conditions hog prices are expected to continue the seasonal advance now in progress until the peak of the spring rise is reached sometime in March or early in April. This probably will be followed by a normal seasonal decline which usually comes in May and June, when the bulk of the fall pig crop of the previous year is marketed.

Supplies of hog products in storage on July 1, 1929 are expected to be considerably less than those on July 1, 1928, and hog supplies next summer are expected to be less than last summer; demand for pork both at home and abroad is likely to show a slight improvement over the demand in the summer of 1928; and hog prices will probably average higher than last summer. The level of hog prices during the winter of 1929-30 is expected to average higher than that prevailing this winter.

Inspected slaughter of hogs in the crop year 1927-28 totalled 48,100,000 head and was the third largest on record, being 8 million head or 18 per cent larger than that of 1925-26 and 5 million larger than that of 1926-27. Market value of the 1927-28 inspected slaughter was 15 per cent less than the $1,195,000,000 paid for hogs slaughtered in 1925-26. Slaughter in 1925-26 was the smallest in 7 years and total market value was the largest. Average price per 100 pounds was $9.20 in 1927-28 and $12.37 in 1925-26.

Market supplies of hogs equal to those of the past year can only be expected to result in a comparatively low level of hog prices. If Corn Belt production policy is to be a continuation of the present high corn and feed crop acreage, with varying yearly production from that acreage the determining factor in hog production, then wide fluctuations in both hog supplies and hog prices are to be expected. Hog supplies for 1929, as indicated, seem to be near the maximum for which a fairly high level of prices can be secured and near the minimum to be expected from present corn production. Stabilization of supplies at about that level seems to offer the best present prospects for joint corn-hog returns in the Corn Belt.

DAIRY OUTLOOK

The gradually increasing demand for milk and milk products will probably maintain about the present spread between the prices of feed and the prices of dairy products until there is such a material change in the beef situation that farmers will increase milk production by milking a larger number of beef-type cows. As combined domestic production of all dairy products during recent years has averaged about 99 per cent of domestic consumption and as prospective foreign supplies limit the level to which domestic prices can rise, the situation does not justify more than a gradual expansion of dairy herds, possibly not more than one per cent per year.

Farmers now have an opportunity to dispose of old cows for beef purposes at good prices. This opportunity will probably be open for two or three years. The spread between price of dairy cows and value of the cows for beef purposes cannot long remain as great as at present if farmers continue to raise increasing numbers of dairy heifers.

The number of milk cows on farms is about the same as at this time last year. In nearly all States the number of yearling heifers and heifer calves being kept for milk cows is larger than the number on hand a year ago; in the Northeast the increases are substantial but, for the country as a whole, the present number is less than one per cent above the number ordinarily required to maintain the present number of milk cows. Changes in number of cows milked during the next two years will depend largely on the relation between price of beef and price of dairy products, for this affects both the age at which milk cows are sold for slaughter and the number of beef-type cows milked. Indications are that for the next few years the price of beef will be an important factor in restricting the expansion of dairying in the Corn Belt and in much of the South and West, and the number of cows milked in the country as a whole is expected to show little increase for several years. Returns from dairying will continue to vary rather sharply from season to season according to pastures, feed conditions, and urban demand. Profits in individual years will depend on the promptness with which changes in production costs are reflected in changes in production and in changes in the prices of dairy products. With the number of milk cows increasing only slowly, if at all, the gradual increase in the per capita requirements of the increasing population seems likely to result in prices averaging sufficiently above feed costs to permit a gradual further increase in the production of milk per cow.

The number of milk cows on farms in the United States has changed but little during recent years. The number increased from 21,408,000 in 1921 to 22,523,000 in 1925 and then decreased to 21,824,000 last year and to 21,820,000 on January 1, 1929. Compared with eight years ago, present numbers are lower in the North Atlantic States and higher chiefly in the West North Central and Western States. Present numbers are slightly above those on hand a year ago in most of the western States and in the southern Appalachian region, but these increases are about offset by slight decreases in important North Central dairy States and by what appears to be the beginning of a shift from dairy cattle back toward beef cattle in the western half of the Corn Belt. Increases in yearling heifers being saved for milk cows averaged 104.2 per cent. The figures show, however, continued increase in heifers in the North Atlantic States where farmers have been maintaining their herds by buying cows from farther west. In this area, farmers have increased the number of heifer calves saved from 5 to 10 per cent a year for three years in succession.

Present numbers are close to those required for normal replacement of aged cows. Obviously, if the number of heifers raised is increased above the number locally needed for replacement and for increasing herds it will materially affect dairy cow prices in that area. Since present numbers of young stock in this area are the highest since 1920 there seems no justification for further increases there this spring in the number of heifer calves saved.

Loss of dairy cows from tuberculosis eradication is decreasing and now amounts to only about one per cent of the total milk cow population.

With little change in milk cow numbers for several years anticipated, and little or no shift from beef type to dairy type cows expected, changes in milk production will depend largely on the intensity of feeding. During recent years the relationship of prices of dairy products to both beef prices and feed prices has been relatively favorable for dairying, and production per cow has increased, because of more intensive feeding and shift toward dairy-type cows. Between 1924 and 1927 production per cow appears to have increased about 10 per cent, the increase being shared by all sections of the country, but the production per cow in 1928 was apparently about the same as in 1927.

Pastures in 1928 averaged poorer than usual until mid-summer and then were correspondingly better than usual. Combining the seasonal averages in the various States in proportion to the State's importance in milk production, the condition of dairy pastures averaged 81 in 1928 to 86 in 1927, and 76 in both 1926 and 1925.

Hay supplies are lower than the record supplies of last year, and feed prices are somewhat higher. The most marked changes are in the lower supplies of legume hays and in the higher prices of high protein concentrates. It does not seem likely, however, that feed prices will advance as much as they did last spring.

Production of manufactured dairy products the past two years has not kept pace with the upward trend of previous years on account of increased consumption of fluid milk and cream, and no increases in numbers of dairy cows. Butter production has made no material change since 1926, and except for favorable conditions during the past fall, it is probable that 1928 production would have shown a noticeable decrease under 1927. Cheese production seems to have been slightly heavier in 1928 than the previous year, but was actually less than in 1926. Condensed and evaporated milk production in 1928 was slightly less than in 1927. On a total milk equivalent basis, 1928 production of manufactured dairy products was about equal to that of 1927.

Stocks of dairy products at the close of the year indicated no burdensome surpluses, except cheese, which accumulated throughout the summer and fall months, and which partially explains the low cheese prices now prevailing.

Consumption of dairy products was maintained throughout 1928 despite the slightly higher prices which prevailed. Demand seems likely to remain high through the first half of 1929 with a possible downturn in demand toward the end of the year or in 1930.

The quantities of foreign dairy produce absorbed by our markets were somewhat lessened in 1928, while our sales of concentrated milk abroad increased. The net importation of dairy products into the United States on the basis of total milk equivalent was about one per cent of domestic production. It cannot

be expected that this year will bring less pressure from foreign competition. Practically throughout all the year foreign dairy production was retarded by unfavorable pasture conditions and European markets were strengthened by unusual demand. Together, Great Britain and Germany took some 10 per cent more butter in 1928 than in 1927, with higher average prices prevailing in their markets. The season of flush production in New Zealand, and Australia, begins in August and during the first three months of the current season, New Zealand butter production is officially estimated to have been 15 per cent greater than for the same period for the previous season, and Australian butter production during the first four months is estimated to have been a third heavier. Most of the influence of increased supplies from the Southern Hemisphere during the current season which began in August is still to be felt in our markets.

While the North Eastern States may be helped somewhat by the shift from dairy production to beef production in the western Corn Belt, they face the probability of a steady increase in the shipments of fluid cream into their territory from the mid-west, and they are likely to suffer if they expand production faster than is necessary to supply their growing local demand for fluid milk. In fact, holding herds at present levels for several years, while shifting freshening dates enough to prevent fall deficits, would decrease milk sold as surplus and possibly improve the dairy farmers returns. Either a general increase in cow numbers in this section, or failure to provide for the fall shortage which would force dealers to draw upon new territory, would continue a surplus production and depress dairy returns to farmers in this section.

During the past five years the eastern section of the Middle West has shown continued moderate expansion in butter and cheese, but quite material decreases in condensed and evaporated milk. The northwestern section comprising Minnesota, Wisconsin, Iowa, and the Dakotas, has shown steady but moderate increases in all important products with the first three States continuing to lead the nation in the quantities of dairy products manufactured. Production of manufactured products also is being rapidly expanded in the southwestern part of the Middle West section which includes Nebraska, Kansas, Missouri, and Oklahoma. The present strong position of the beef cattle industry has reduced the incentive for owners of beef or dual purpose herds to milk their cows or to shift into definite dairy activity, and high value of dairy cows for beef has encouraged farmers to sell a larger number of old cows. Not for at least two or three years is the beef price situation likely to change sufficiently to increase competition with dairying. All midwestern sections show increasing extension of fluid milk areas which will continue with the growth of cities. Continued progress in long distance shipping of milk and cream, particularly the latter, has been made and further expansion may be expected.

In the Southern States condensed and evaporated milk production has increased from about 0.8 of 1 per cent of the total domestic production in 1924 to 3.6 per cent of the total in 1927. Butter production was about 4 per cent of the United States total in 1924 and 5.6 per cent in 1927. Cheese production has also shown considerable gain. Expansion of dairying in this section seems likely to continue.

Production in the Pacific States has not been keeping pace with the increase in consumption and, therefore, the Mountain States, (Montana, Wyoming, Colorado, New Mexico, Idaho, and Utah), which have shown marked increases in production during recent years will probably continue that trend.

Supplies of lambs for marketing in the first half of 1929 are slightly larger than a year earlier, and indications are that a larger proportion of western fed lambs will be marketed after March 1 than last year. Sheep numbers continued to increase during 1928 and the lamb crop this year may show some increase above last year.

Wool production in the United States and in the important foreign producing countries during the 1928-29 season will apparently be about 6 per cent larger than for the 1927-28 season and stocks in the primary markets have been increased. Last season's slightly reduced supplies and active foreign demand this season have strengthened prices for lower grade wools. This season's larger world wool supplies and the declining tendency in foreign prices have not been reflected by a decline in prices of wool in this country.

Active business conditions will continue to help support the lamb and wool market well through 1929, with possible slackening in late 1929 or in 1930. Although increased numbers of sheep in this country have not as yet affected the markets, caution should be used in production plans since present lamb prices can not be maintained if expansion is continued too rapidly.

Lambs

The number of sheep and lambs in this country continued to increase during 1928 and on January 1, 1929 the estimated number was 47,171,000 head, an increase of 2,627,000 head, or 5.9 per cent over the number on January 1, 1928. The number on January 1, 1929 was 10,985,000 head, or 30 per cent larger than on January 1, 1922 and was only 1,416,000 head below the number on January 1, 1909, 48,587,000 which was the maximum number in over 30 years.

The lamb crop of 1928 was about 1,800,000 head larger than that of 1927 according to estimates of the Department of Agriculture. About 600,000 head of this increase was reflected in increased inspected slaughter from May to December which was the largest slaughter for this period since 1914. The number of sheep and lambs on feed January 1, 1929 was estimated at 4,463,000 head, which was 5½ per cent more than on January 1, 1928. With the increased number of lambs on feed the total slaughter from the 1928 lamb crop is expected to be about 900,000 head larger than the slaughter from the 1927 crop.

The increased number of lambs on feed this year is due to increased numbers in the Corn Belt States, including western Nebraska. The estimated increase in this area was 389,000 head. The number on feed in Colorado and the other western States, was about 140,000 head less than on January 1, 1928. The weight of lambs when put on feed, the location of the supplies, and reports on feeder plans for marketing indicate that the proportion of western fed lambs to be marketed after March 1 will be larger than last year.

Conditions to the end of January for the early California lamb crop have been less favorable than they were a year ago, but any decrease in the percentage of early lambs saved this year compared with last year is likely to be more than offset by the increase of breeding ewes. Weather and feed conditions during February and March will determine the number of early slaughter lambs from California, but there is no present reason to expect the supply to be less than last year or to move later. Feed conditions in Texas are favorable for an increased movement of grass fat yearlings and wethers in April and May over that of last year.

The supply of lambs during the last 7 months of 1929 and the early part of 1930 will depend largely on the size of the lamb crop of this year. In general, weather conditions during the breeding season, condition of breeding flocks, and feed supplies in most of the western States, were less favorable than last year. It hardly seems likely therefore that the number of lambs per 100 ewes will equal that of 1928 in the western States, even with weather as favorable as last year during lambing. However, the increase in breeding ewes will probably result in a lamb crop as large as last year, unless weather conditions during lambing are very unfavorable. Feed and weather conditions in the early lambing area of the southeast, including Kentucky, Tennessee and Virginia, have been more favorable than last year and an increased supply from this section is indicated.

Demand for lamb improved steadily throughout 1928 and for the year as a whole averaged somewhat better than for 1927. During the last half of 1928 a 5 per cent increase in the per capita supply of lamb was accompanied by a 2 per cent increase in prices of dressed lamb, thus indicating a considerably stronger demand than in the last half of 1927. The recent improvement may be attributed largely to increased industrial income and to higher prices of poultry, veal, and other competing meats.

A strong factor in the lamb situation especially in the last few years has been the marked upward trend in the demand for lamb, which has resulted in an increasing per capita and total consumption of lamb at comparatively steady to higher prices.

Active business and other conditions indicate a continued strong demand for lamb during the first half of 1929. A relatively high level of prices for competing meats and population growth will help maintain the present high level of demand but it is possible that the demand in the first half of 1930 may be reduced somewhat from the present high level.

Average prices of good and choice, handyweight slaughter lambs at Chicago advanced from $13.00 at the beginning of 1928 to more than $17.00 in the spring then gradually declined, reaching the $13.00 level again in October. In December they made a sharp recovery and in early January 1929 reached more than $16.00. Prices generally maintained about the same seasonal movement as in 1927, at a level approximately $1.00 higher, except during October and November when increased supplies, accompanied by a reduced demand for feeding lambs, forced prices below the corresponding period in 1927. The relatively high level of prices of lambs early in the year, as compared with carcass values, may be attributed largely to the increased wool and pelt values.

Wool

Wool prices in this country had a general upward tendency from the middle of 1927 to the middle of 1928, followed by a decline with some recovery toward the end of the year. At the close of 1928, prices of most grades of domestic wools were well above those of the year previous. Prices of 64's - 70's (fine) strictly combing wools, however, were slightly lower.

Consumption of combing and clothing wool, as reported by the Bureau of Census for the first 11 months of 1928, was 361,000,000 pounds (grease equivalent) as compared with 384,000,000 pounds for the same period in 1927 and a five year average of 413,000,000 pounds for January-November 1923-27. Consumption of 64's and above (fine) domestic wools from January to November increased considerably over the same period in 1927, the increase being largely in the clothing and French combing types rather than in the longer staple, while consumption of 64's-70's (fine) foreign wools showed a decrease. Foreign wools other than the 58's-70's (fine and half blood) also showed a considerably decrease in consumption, but the decrease was not accompanied by an increase in the comparable grades of domestic wools, the consumption of which remained about the same.

Reduced consumption of foreign wools was reflected by the small imports of combing and clothing wool for the first 11 months of 1928. These imports totaled 84,000,000 pounds as compared with 113,000,000 pounds for the same period in 1927 and 162,000,000 pounds for the five year average January-November, 1923-27.

Wool production exclusive of pulled wool in the United States has steadily increased during the last 6 years, being 296,000,000 pounds in 1928, as compared with 278,000,000 pounds in 1927 and 222,000,000 pounds in 1922.

The general price situation abroad while still firm on some grades is somewhat weaker than a year ago. Demand continued strong throughout 1928. At the beginning of 1928, prices abroad were maintained by the light supplies, by the economic improvement on the Continent, and by the strong demand from Japan. At the end of the year, however, prices of nearly all grades above 56's at London were several cents below those a year ago. Prices of a few low grades however were slightly higher.

Wool production in 10 countries which produce a little over two-thirds of the world's wool is estimated at 2,520,000,000 pounds for 1928-29, an increase of 6 per cent over 1927-28 and 5 per cent over 1926-27. All of the important wool producing countries of the Southern Hemishpere showed increases over 1927. Apparently sheep numbers at the beginning of 1929 will show an increase in this latter group of countries since recent lambing conditions were much better than they were in the preceding year when most of these countries were suffering from prolonged drouth.

The outlook for the sheep industry in this country during the next few years indicates the need for due caution in regard to continued expansion. The last low point in sheep numbers was reached in 1922. There has since been considerable expansion in flock numbers and this expansion is continuing. During recent years the effect of increased slaughter has been largely offset by the upward trend in the consumer demand for lamb, with the result that lamb prices have been on a comparatively high level for several years.

Holding back lambs in order to expand flock numbers has restricted slaughter during the past few years. When this tendency ceases it is to be expected that the yearly increase in flock numbers during recent years will go to increase supplies of sheep and lambs for slaughter. If this should come at a time when demand conditions are less favorable, it is hardly likely that the market can absorb the additional supply without a considerable reduction in price.

MOHAIR

The outlook for mohair producers is fairly good but not quite so good as it was at this time last year. Domestic production appears to be increasing more rapidly than consumption; foreign consumption in 1928 was less than in 1927. The situation, however, is still much better than at the beginning of 1927 and mohair prices may be maintained near the level realized for the 1928 fall clip. As stated last year, producers should be careful not to expand production more rapidly than domestic demand requires. One million more goats producing 4.4 pounds of mohair per head in 1928 probably would have supplied the domestic market and reduced prices.

During the past two years prices have been encouraging to producers. The price of good combing domestic mohair at Boston averaged 69 cents in 1926, 72 in 1927, and 86 in 1928. As indicated in the last Outlook Report, the situation at the beginning of the year was very favorable. High prices were paid for the spring clip. Good combing domestic mohair reached 91 cents per pound in May and remained at this level until September, when the price level dropped to 82 cents, about the same as at the beginning of the season. Supply and demand prospects for 1929 suggest that prices may be maintained near the present level through the season.

Absence of large accumulation of stocks is a favorable factor in the present mohair situation. Domestic stocks of mohair on the market appear to be light. Imports have been larger while quantities released for consumption have been smaller than last year. On November 30 stocks of foreign mohair in bonded customs warehouses amounted to only 4,106,000 pounds, as compared with 4,378,000 pounds on the corresponding date of 1927. It is possible that stocks of foreign mohair have increased somewhat since November 30. Stocks in bond at the end of the year in Boston amounted to 1,820,000 pounds as compared with 618,000 pounds at the end of 1927. It is reported that stocks have been fairly well cleared from South African markets, and Turkish stocks are not large.

Foreign production of mohair will probably be no larger, and may be slightly smaller, than last year. The 1929 clip in Turkey may be a little larger than the 1928 clip but not equal to that of 1927. The number of goats in the Union of South Africa has been reduced by drought and floods about 12 per cent during the past year. This will affect the 1929 clip. Conditions are now reported to be favorable for building up the flocks and there may be some recovery in production in 1930.

Trend of mohair production has been downward in the Union of South Africa, and upward in Turkey. In the five years, 1923-1927, the production in South Africa declined from nearly 16,000,000 to 11,000,000 pounds, while the production of Turkey increased from about 6,000,000 to nearly 11,000,000 pounds. It seems possible that the Union of South Africa has reached a turning point in the decline, and Turkey, a turning point in the expansion of production.

Foreign consumption of mohair in 1928 appears to have been less than in 1927. Mohair retained for consumption in Great Britain in the first eleven months of 1928 was 5,000,000 pounds less than for the corresponding period in 1927. This slackening in consumption in Great Britain has been reflected in some increase in the imports of the United States.

Production in the United States has been expanding at a rapid rate. During the five years, 1923-1927, production increased from 9,000,000 to 13,500,000 pounds. The prices realized for mohair during 1928 will probably stimulate expansion, but in planning any expansion producers should carefully consider the danger of producing so much mohair that prices will fall to an export basis.

There has been a great expansion in the domestic consumption of mohair since the war, but the rate of expansion in the past few years may not be continued. In the three years 1920-1922 consumption averaged close to 14,000,000 pounds. In the past three years it has averaged about 18,000,000 pounds. It appears that consumption in 1928 was slightly less than in 1927, and considerably less than in 1926. It is significant, however, that prices in 1928 were materially higher than in 1927 and that these higher prices were accompanied by only a slightly lower consumption, indicating that demand for mohair was well maintained. At the same prices or at lower prices, consumption in 1929 may be larger than in 1928. Since mohair is used extensively in the manufacture of linings for automobiles, the consumption of mohair will depend to some extent upon automobile production and the extent to which other fibers are used in the manufacture of automobile linings. In view of the uncertainty as to a continuation of a rapid rate of increase in demand, producers should reduce the rate of increase in production somewhat below this ten per cent rate maintained during the past three years.

HORSES AND MULES

The horse and mule price cycle has apparently turned upward. At the present rate of breeding, and of decline in number of work animals, the present horse and mule population of about 19,000,000, compared with 25,000,000 in 1920, will be reduced to about 11,000,000 in 10 years. Breeding of work animals as a sideline seems advisable in areas where relatively cheap feed and pasture are available.

Strengthening of the prices of horses and mules in late 1927 and substantial increases during 1928, indicate that the long price decline has been checked, and that the upswing of the price cycle is now underway. This upturn in farm prices of work stock was first shown by mule prices in the fall of 1927, undoubtedly precipitated by favorable cotton prices. Horse prices followed several months later. The upturn has been more pronounced and of longer duration in the deficit horse-producing areas of the East and has not yet made much headway in surplus producing areas west of the Mississippi River.

Horse prices during 1929 may continue upward, especially in Eastern States. Mule prices during 1929 are expected to remain higher than during 1927, and may even exceed those of 1928. Any marked expansion of cotton acreage in the eastern Cottom Belt would tend to stimulate mule prices, but it is doubtful if a contraction of acreage would result in prices as low as prevailed during 1927. The fall movement of horses and mules into the South was not as large last fall as a year ago. Receipts of mules at Southern markets for the three months from October to December were about half those for the same period in 1927, but nearly twice as large as in 1926.

The total number of horses and mules has decreased nearly one-fourth since January, 1920 when about 25,000,000 were on farms. Unless the number of colts is increased above the number produced during the past few years, the number of horses and mules will be reduced to about 11,000,000 within the next 10 years (based on the assumption that the average horse lives about 15 years and the average mule about 18 years.)

Reduction in the number of horses and mules of working age would be even greater as the proportion of young colts would be much larger than at present. Whether this number will be sufficient to meet the needs of agriculture ten years hence will depend on the extent to which mechanical power can be economically substituted for animal power.

The number of work animals required on farms and in cities continues to decrease with the increase of automobiles, trucks, tractors, and combines. The tendency in cities seems to be to replace worn-out work animals with motor trucks rather than with young horses. Development of tractors that are better adapted for a greater diversity of farm work, and the motor cultivator, are making possible further substitution than was considered practicable a few years ago. The Census reported 506,745 tractors on farms January 1, 1925; since then domestic sales of tractors for all purposes increased from 119,000 in 1925 to 156,000 in 1927. Increased mileage of improved roads is causing an increased use of motor trucks in marketing farm products. The combined harvester-thresher has been encouraging the displacement of work animals in harvesting wheat and grain sorghums.

The use of mechanical power has delayed the upturn in horse and mule prices and may be expected to retard the rate of the upswing of the cycle.

With increasing mechanical power for road and heavy farm work, future demand is likely to be for medium-weight (1400-1600) active horses to perform the lighter tasks and routine farm work. Demand for good cotton mules will probably be maintained and may increase within a few years.

Farmers can not expect to replace their work stock a few years from now at present low horse and mule prices. Farmers who expect to continue to use horses on their farms should consider the advisability of replacing the older work animals with young mares at present prices. This would enable them to raise colts when horse and mule prices have reached higher levels. Increased breeding of work animals on farms as a side line seems advisable in many areas, especially where relatively cheap feed and pasture are available.

POULTRY AND EGGS

The prospective supply and demand situation indicates higher prices for poultry during the first half of the current year than prevailed a year ago and prices for eggs during the first six months lower than those in 1928 but higher than those in 1927. Demand for poultry and poultry products during the later months of the year will be less if industrial activity slackens.

The situation is favorable to producers of poultry because of the relatively smaller stocks of chickens on farms, smaller cold storage holdings and larger supplies of feed. Egg prices will be affected favorably by the smaller number of layers on farms and adversely by the unprofitableness of the past season's storage operations and by the unusually large stocks of both shell and frozen eggs in storage January 1.

Numbers of hens and pullets of laying age on farms January 1, 1929, were somewhat less than a year earlier but apparently very close to the numbers at the beginning of 1927 according to reports for 20,000 farm flocks of less than 400 layers. While sufficient data are not available to indicate definitely the change in numbers for flocks of over 400 birds it is believed that the hen population for this increasingly important group was not increased in 1928. The number of chickens raised in 1928 was reported to be about 10 per cent less than in 1927.

Eggs

A feature of the egg production of farm flocks in 1928 was the change in the seasonal distribution of the lay from the previous year. Layings per hen and per pullet up to May, 1928, were 5 to 10 per cent less than in 1927; from June to August they were slightly more, and from September to December, 5 to 10 per cent heavier than in the previous year. The layings per bird during the latter part of the year were offset by a reduction in the numbers of hens and pullets on farms so that the total production of eggs during the fall was about the same as during the fall of 1927. The heavier fall layings are largely attributed to the favorable weather for production and to generous feeding. Total receipts of eggs at the four principal markets in 1928 were slightly less than in 1927, but about two per cent above the five year average. Receipts during the first half of 1928 were below those for the corresponding period in 1927 but in the second half they were heavier.

Exports of eggs in shell were considerably lower in 1928 than in 1927; for the first eleven months they were 27,000,000 dozen in 1927, and 19,000,000 dozen in 1928. The reduced exports for 1928 were due in part to a domestic price level during the usual export season about five cents per dozen higher than in 1927. Imports of eggs and egg products were heavier in 1928 than in 1927 because of increases in dried whole eggs, frozen whole eggs and dried yolks.

The principal demand for eggs in the spring is for storage and for immediate consumption. Demand for eggs for storage was keen in 1928 and the price of eggs packed for storage reached a high level. Demand for immediate consumption was apparently sluggish throughout 1928 and was a factor in checking the usual fall advance in the price of eggs. An unprofitable season for storage operations followed; consequently demand for eggs for storage may be considerably less during the coming season particularly for the lower grades.

Demand for immediate consumption apparently will be greater as the result of increasing employment during the past few months and the prospective continuation of this condition during the first half of this year at least.

Farm prices for eggs during most of 1928 were higher than during 1927. The favorable margin in 1928 gradually increased from about one cent per dozen in January to six cents in June; and then gradually decreased until, in October, prices were slightly lower than in 1927, then remained lower through the rest of the year. The fact that the farm price of eggs during the months of flush production in 1928 compared with previous years, was higher and relatively higher than for the other months of the year, was significant. It enabled ordinary farm-flock producers to obtain relatively better returns for their year's production than those specialized poultrymen whose profits depend largely upon high fall egg prices, and upon high production during that season.

High egg prices in the fall and early winter months have in the past been due to the persistent demand for fresh eggs or eggs of comparable quality. Larger supplies in recent years of fresh receipts and high quality cold storage eggs during this season have resulted in a downward tendency in the prices of all grades of fresh eggs and, obviously, as such supplies become more plentiful during the months of normally low production, prices will tend to show a smaller seasonal variation.

Quality continues to be a factor of growing importance in the egg situation. Producers who make no special effort to market high quality eggs in the fall and winter are likely to find that egg production at that season is becoming less profitable, compared with previous years. With new regulations for the sale of eggs on a quality basis, especially in retail channels, and more discrimination on the part of consumers, many dealers have begun to show a preference for the best packs of storage eggs whenever the current receipts of so called fresh eggs have shown much irregularity in quality.

The present small reduction in the numbers of hens may affect egg production but this could be easily overcome by a favorable price situation for eggs which would encourage better care and feeding. With feed prices this spring likely to be no higher than a year ago it is probable that full feeding practices will be maintained. Information from the specialized egg producing sections in the west indicate increased hatchings this spring.

The storage egg situation at the beginning of 1929 was unfavorable. Storage stocks of shell eggs were about 1,400,000 cases, approximately 60 per cent more than on January 1, 1928, but only 6 per cent more than the five year average. Stocks of frozen eggs were 56,000,000 pounds, or equivalent to approximately 1,700,000 cases of shell eggs, an increase of 19 per cent over last year and 67 per cent over the five year average.

Prospective supply and demand point to a price level for eggs during the season of flush production this year somewhat lower than that which prevailed during the into-storage period in 1928, but higher than during the corresponding period of 1927.

Poultry

Dressed poultry receipts at the four markets were 3½ per cent greater in 1928 than in 1927, running heavier in the early part of the year and lighter at the close. The 1929 receipts to January 22, were 5 per cent below those of the same period last year.

Live poultry receipts at New York, the principal live poultry market, were about 7 per cent, or 800 cars lighter in 1928 than in 1927, and this year, up to January 22, 1929, have run lighter than a year ago.

The trend in the price of poultry in 1928 as compared with 1927 was the opposite of the trend in the price of eggs. Farm prices of poultry during the first five months of 1928 were slightly lower than in the corresponding months of 1927, but during the remaining months of 1928 they were considerably more favorable than during the previous year, being about three cents per pound higher in September and remaining more than two cents higher the rest of the year.

Favorable prices for both live and dressed poultry are indicated during the first six months of the current year at least, because of the smaller stocks of poultry on farms, and the relatively low storage stocks. The supply of poultry available for market during the next six months is comparatively fixed and must come mainly from the stocks now on farms or in cold storage, since the influence of weather and of feeding is far less important with poultry than with eggs. Higher prices, however, might reduce consumption and stimulate broiler production and the sale of a larger proportion than usual of the laying stocks on farms. Moreover, if heavy production of chicks should occur this spring, and should demand decrease because of a possible slackening of business activity when this new supply becomes available for the market in the fall, poultry prices may become less favorable during the latter part of the year.

Poultry prices for the past several years have held up much better than have egg prices. If this relationship continues, some shifting toward more emphasis on the meat-producing side of poultry farming may be expected.

FEED-CROPS AND LIVESTOCK

The apparent tendency of livestock producers to produce a greater proportion of the feed crops which they use on their own farms is an adjustment to secure greater net returns from their farm operation and will probably continue. A shift in farm practice, on the part of growers of feed crops for sale, to feeding an increased proportion of these crops on their own farms offers the only logical means of increasing their returns and of improving market conditions for feed grains and hay.

Production of feed grains in 1928 continued at the relatively high level of recent years in relation to livestock numbers. Production was about 4 per cent above what would have been produced on the same acreage with 10-year average yields. The average production of feed grains per animal unit (1 horse, 1 mule, 8 sheep and lambs, 5 hogs, 1.2 cattle and calves) during the 4 years, 1925-1928, was about 13 per cent above the average of the 4 years, 1921-1924. Hay production in 1928 was also slightly above what would have been produced on the same acreage with 10-year average yields. In relation to the number of hay-consuming animals, hay production has shown an upward trend for several years, although in 1928, it was 14 per cent below the record crop of 1927. The average acreage of feed grains for the last 4 years was the same as the average for the preceding 4 years, while the number of animals (expressed in animal units) on farms on January 1, 1926 to 1929 was about 11 per cent below the average number on farms from 1922-1925. The average acreage of tame hay during the last four seasons was about 2 per cent below the average of the preceding four years, while on January 1, 1926 to 1929 the number of hay-consuming animals on farms shows a reduction of about 11 per cent from the average number on farms from 1922-1925.

As a consequence of the greater production of feed-grains per animal unit, the present level of prices of feed-grains is about 76 per cent of the level for livestock, when both are considered in relation to pre-war years. The present level of prices of hay is even lower. The continuation of this disparity suggests the probability that feeders of livestock are producing an increasing proportion of the feed which they use, while growers of feed crops for sale have failed to adjust their output to the reduced market demand. In the light of recent livestock-feed-crop ratios, there appears little basis for expecting a re-adjustment to former practices on the part of livestock producers. Rather it seems that adjustment must be made by the growers of feed crops for sale. If acreages equal to those of 1928 are maintained and average yields are secured in 1929, the outlook is for a continuation of the disparity in the price level of feed crops considered in relation to the price level of livestock.

The problem of adjustments to be made in those sections where the bulk of the feed crops is produced remains. . . . Greater net returns to livestock producers should follow from stabilizing of livestock numbers at no material increase above present levels, accompanied by slight reductions in feed-crop production rather than from increasing livestock numbers to balance feed-crop production. For the farmers whose income has been largely from sales of feed crops, and who do not have specialized markets, a further shift toward feeding on the farm appears to be the most logical means of increasing farm returns and of improving markets for feed crops.

HAY

Hay prices for the 1929 crop may not average as high as for the 1928 crop but will probably be higher than those for 1927, if yields and quality in 1929 are average and if production is well distributed in the principal surplus producing hay areas. Present high prices were caused principally by a shortage in the important shipping States rather than by a reduction in the crop as a whole. Present relatively high prices for good quality hay may be expected to continue until the new crop becomes available. Alfalfa and clover hays of the best grades are now selling at the highest market price during the past five years and further price advances this spring are probable. The low quality of the crop east of the Rocky Mountains has increased the premiums paid for high quality hay.

Production of all kinds of hay in 1928 was about 106,000,000 tons, or 13 per cent less than in 1927, but only 1 per cent less than the five-year average. There was, however, a large carry-over of nearly 18,000,000 tons from the record hay crop of 1927. In the important shipping States for timothy and clover hay - New York, Michigan, Ohio, Indiana, Illinois, and Missouri - the 1928 production was 25 per cent less than in 1927, and 15 per cent less than the five-year average. The 1928 production of wild hay in the important shipping States of Minnesota, South Dakota, Nebraska, Kansas, Oklahoma, and Texas, was 31 per cent less than in 1927, and 13 per cent less than the five-year average.

Severe winter-killing of clover during 1927-28 resulted in a greatly reduced acreage, and the production of clover hay in the Central Corn Belt States was 30 per cent below the five-year average. Production of alfalfa in all the important shipping States was about 9 per cent less than in 1927 but about 1 per cent above the five-year average, although in Colorado, Kansas, Nebraska, and Michigan, it was 16 per cent less than last year, and 5 per cent below the five-year average.

The large carry-over of hay from the 1927 crop resulted in low hay prices early in the fall of 1928. The rise in hay prices during the fall and early winter of 1928 to the present relatively high level has been caused primarily by the marked decrease in production of all kinds of hay in the important hay shipping States, rather than by any general country-wide shortage of hay. The low quality of the crop east of the Rocky Mountains has increased the premiums paid for high-quality hay. Current high prices for millfeeds and concentrates tend to support the market for legume hays. Producers who have high-grade alfalfa and clover in storage, or producers in the Southwestern States who harvest alfalfa early, may expect a continuation of relatively high market prices until the 1929 crop becomes generally available.

Timothy hay, both as a market and as a farm crop, continues to decline in relative importance in the national hay crop. Receipts of timothy at 13 important markets for the 1927-28 season were 14 per cent lower than for the 1926-27 season and 29 per cent lower than the average for the five-year period 1923-27. An analysis of the long time outlook for timothy and other grass hays was made in the 1928 Outlook Report.

The 1928 production of all kinds of hay in the Southeastern States was only 2 per cent less than that of 1927, but 15 per cent greater than the five-year average. The production of annual legumes for hay, especially soybeans, is steadily increasing in these States, amounting in 1928 to 2,066,000 tons, which was 15 per cent greater than the average production 1923-27. The increasing production of annual legume hay in the Southeastern States will meet, in part, the legume hay requirements of the dairy business, although a good market for limited quantities of northern and southwestern high-grade alfalfa will continue. Demand for northern hay is decreasing with the increasing production of forage in the Southeastern States, and with greater competition from the Southwestern States resulting from lowered freight rates from that area eastward.

Alfalfa acreage in Kansas, Oklahoma, and Nebraska, has gradually decreased from 2,819,000 acres in 1920 to 2,174,000 acres in 1928, or a decrease of 23 per cent. No immediate recovery of productive acreage in this area is likely to occur, and a further decrease is possible, because of the probable spread of bacterial wilt and because of other factors affecting the crop's growth. This decrease in acreage has curtailed the surpluses of alfalfa hay available in these States for marketing in the Southern States, and has thereby shifted a demand of considerable importance to the area of New Mexico, Arizona, and West Texas. The marketing of surplus alfalfa from Southwestern areas in the Southern markets has, in turn, diverted supplies which heretofore moved to the Southern California markets, and thereby contributed to increased prices for California growers.

Specialization in dairy herd management and alfalfa hay production is apparent in the Pacific Coast States. The present human population in these States is slightly over 7,000,000, which is an increase of 26 per cent since 1920 and 68 per cent since 1910. This increase in population, chiefly in, or near the cities, has created an extensive and expanding demand for fluid milk, and as a result, the number of dairy cows and 2 year old heifers in these States increased 18 per cent since 1919. Concurrently the alfalfa acreage has expanded 29 per cent since 1919 and 114 per cent since 1909. Most of this increase in acreage occurred in the

interior areas of these States. Many specialized dairies have been established along the Seaboard and close to the centers of population. As a result of these conditions an extensive commerce in alfalfa hay has been created between the interior hay producing areas and the Seaboard. Smaller quantities of millfeeds and concentrates, and greater quantities of alfalfa hay and meal, are used in the rations for dairy cows and poultry in these States than in the Eastern States. The demand of the feeders, therefore, is for high-grade alfalfa hay because of its relatively high protein content. The alfalfa hay supply of these States, however, includes much low-grade hay from certain areas which is not well adapted to dairy and poultry feed, and which brings low returns to many growers. Agricultural programs in these States might well give consideration to a general improvement in the quality of, and marketing practices for, the alfalfa crop.

The price of alfalfa hay in the stack in the Intermountain States is now higher than for two years, and is likely to continue at a higher level than in recent years, during the coming season, unless the 1929 production is above average in quantity and quality. The consumption of alfalfa hay for the maintenance of beef cattle and sheep has been increased, the past season, by poor range conditions and severe weather, and by high prices for these kinds of livestock. Increased consumption is likely to continue during 1929 because greater utilization of alfalfa hay normally takes place during periods when livestock prices are high.

An increase of approximately 13½ per cent on practically all hay freight rates from the East North Central and North Atlantic States to the Southeastern States, and between points within the Southeastern States, was authorized by the Interstate Commerce Commission in September, 1928. The Western Trunk Line Association and the Southwestern Freight Bureau have asked for substantial increases in a number of important alfalfa areas. Should such increases be made effective on the lines serving the alfalfa areas west of the Mississippi River they will materially curtail the shipment of alfalfa hay to the East North Central and Southeastern States, as well as within the States west of the Mississippi River.

The cost of a well balanced ration is usually lowered by the use of good quality legume hays. The average cost of digestible protein in various important feeds in the dairy regions of Wisconsin, Minnesota, and Iowa, based on digestible protein content only, and on farm prices for hay and retail prices at representative interior markets for millfeeds as of September 1, 1928, was as follows: 100 pounds protein in alfalfa hay $6.78; in clover hay $7.47; in timothy hay $18.05; in bran $12.90; and in linseed meal $9.12. Although these figures emphasize the low cost and high feed value of legume

hays, the farmers of the North Central and North Atlantic States, where 66 per cent of all the dairy cows in the country are kept, harvest 2 tons of non-legume hays to 1 ton of legume hay.

Average yields and farm prices for corn, wheat, and alfalfa hay definitely indicate that the income of many farms in the North Central and Eastern States could be materially enlarged by an increased acreage of alfalfa wherever soil conditions permit. Premiums of $5 to $10 per ton above the prices for common-run hay are paid for high-grade alfalfa hay, so that, as a general rule, marketings of high-grade alfalfa hay yield a materially greater net income per acre than is possible from corn or wheat. In all alfalfa and clover areas there is a further opportunity to increase farm income by the adoption of practices that will improve the quality of these crops, either for local feeding or for market.

BROOMCORN

Prospective commercial requirements for broomcorn during 1929 appear to justify a small increase in broomcorn acreage over that harvested in 1928. Since 1924 the trend of consumption in the United States and Canada has been consistently downward, and only about 45,500 tons were required for domestic commercial purposes and for export during the 1927-28 crop year, compared with about 61,200 tons taken for these purposes in 1924-25.

The 1928 acreage was about 15 per cent below the average of the past five years but yields were unusually good, averaging 361 pounds per acre, and the crop totaled about 45,500 tons. With average yields an acreage about 10 per cent larger than in 1928 would produce enough brush for prospective commercial requirements next season.

There are no indications that domestic and Canadian requirements during the coming season will be larger than in 1928 and a material increase in production over that of last year would probably bring lower prices for most types than were received for the 1928 crop.

Nearly 26,000 tons, including stocks on farms and in dealers' hands and manufacturers' stocks of raw and finished products, were carried over into the crop year beginning July 1, 1928. This, together with the 1928 production made a total supply of over 71,000 tons. If commercial requirements during the current season are no larger than last year, about the same quantity as last spring will be carried over into the next crop year.

Farmers outside of the established broomcorn districts, unless they have a local market, are at a material disadvantage in marketing their crop, since buyers usually visit only established broomcorn districts. In addition, broomcorn production requires special equipment. Unless a grower has had experience in growing and handling the crop, he is likely to produce broomcorn brush of low quality, which will not command a good price.

FEEDSTUFFS

Combined supply of feed grains, feedstuffs, and hay is slightly larger than last year, and well above the average of the past five years. Prices of these commodities may be expected to hold generally steady until spring pasturage is available, since more cattle are on feed and prices of livestock and dairy products are generally favorable to a maintenance of relatively heavy consumption of concentrates, legume hays and feed grains. Price of millfeeds and concentrates are not likely to reach as high levels as in the spring of 1928, but legume hays, particularly alfalfa, will probably average materially higher.

Total tonnage of the principal feed grains for the 1928-29 season, including corn, oats, barley and grain sorghums, was about 5.5 per cent larger than last year. Hay supplies were nearly 3 per cent more than the average of the past five years. A larger supply of by-product feeds than was produced last year is likely to become available during the season. The supply of corn on January 1 was slightly less than a year ago but the crop is of better quality than last year and is more uniformly distributed over the Corn Belt. About 25 per cent more oats were available on January 1 than a year ago, while the supply of barley at the beginning of the season was about 36 per cent greater, and grain sorghums nearly 4 per cent above last year's supply.

The hay crop was slightly below average, but, with the large carryover, the total supply available this season is about 3 per cent above the average of the past five years, but about 10,000,000 tons, or 7.5 per cent, below the record supply last year. The low quality of this crop, together with a marked decrease in the outturn in the important hay-shipping States, indicates a relatively small carryover. Prices have tended upward since early in August and are likely to continue well above last year during the remainder of the 1928 season.

The total supply of by-product feeds and screenings for the 1928-29 season appears to be larger than a year ago. Production of wheat millfeeds does not vary greatly from year to year, and the offal outturn, though slightly larger to date than a year ago, is about equal to the average production. Prices of wheat feeds began their usual seasonal advance about the middle of August and now are about equal to prices a year ago. Prices for the remaining months, to the usual time when spring pasturage is available, will probably not advance to as high a point as in the spring of 1928, when they were unusually high, and indications are for a level not much lower than the present prices.

The supply of domestic linseed meal this season will be smaller than a year ago. The 1928 domestic flax crop is about 25 per cent smaller than the 1927 harvest. Crushings will probably be correspondingly smaller. Demand for linseed cake and meal during the first three months of this season has been urgent, and prices on January 1 were about $10 per ton higher than a year ago. The seasonal advance has been similar to that of the past three years, but at a higher level. Prices for the coming six months will probably continue well above those of last year and above the average of the past three years.

The 1928 cotton crop indicated that about 625,000 more tons of cottonseed are potentially available than last season. This additional seed supply will yield about 230,000 tons of cottonseed cake and meal, but with the unusually small stocks at the beginning of the season, total supply may be only about 175,000 to 200,000 tons more than last year. Production of cottonseed cake and meal to date has been about equal to that for the corres-

ponding period last year, so that relatively large amounts of seed remain to be crushed

Consumption of cottonseed cake and meal as feed will probably be slightly larger than a year ago, because of a shortage of legume hay and linseed meal and the small crop of feed grains in the Southern States. The price for the coming six months will probably not average as high as for the corresponding period a year ago, when there was an unusual advance in prices as result of depleted stocks caused by heavy exports early in the season.

A smaller total outturn of alfalfa meal seems probable this season with the supply of alfalfa hay suitable for meal materially lower than a year ago. Production of meal during July, August, September and October, was much above the output for the corresponding period last year. In November, however, production decreased materially and indications are that grindings for the remainder of the season may be smaller than last year. Prices have averaged higher than last season, reflecting the advancing hay prices and firm market for other feedstuffs. With alfalfa hay selling at the highest price in five years, continued firm quotations may be expected on alfalfa meal during the remainder of the season.

Utilization of corn in the process of the manufacture of starches, of which gluten feed and meal is a by-product, has been increasing in recent years. About 7.6 per cent more corn was consumed for that purpose in the past season than in similar period of the previous year. Production this season has been scarcely equal to trade requirements and the principal manufacturers have sold their output well ahead during most of this period. Resellers have had limited quantities to offer for immediate delivery and these have commanded unusually large premiums. From present indications, production will continue of good volume during the next few months, but prices are likely to remain relatively high.

Hominy feed is cheaper than a year ago as a result of a larger output and smaller exports this season. With the supply of corn practically the same as last year it seems probable that production of hominy feed during the remainder of the season may not be much different from last year, and prices are likely to hold steady.

POTATOES

Potato growers in nearly all parts of the United States suffered such terrific losses from overproduction in 1928 that there is little probability that an excessive acreage will be planted this season. Preliminary reports on the acreage which growers intend to plant indicate that if the crop is given average care, production in 1929 may be expected to vary from 400,000,000 bushels about in the proportion that growing conditions are more favorable or less favorable than usual. Considering the low cost of seed potatoes this season, this prospect need not discourage efficient producers of late potatoes, but it does not encourage speculative plantings. Heavy stocks now on hand will tend to hold down the price of new potatoes until the end of June, so prospects for southern growers are none too bright, even though their acreage is reduced around 25 per cent, as now seems probable.

The acreage planted to potatoes is so little dependent on weather conditions at planting time that the acreage planted has not usually differed far from what farmers report as intended. Two years ago the January reports indicated an intended increase in plantings of 13 per cent. Abandonment from flood, hail, and blight was rather heavy, and the increase in the estimated harvested acreage was 11.3 per cent. In January, 1928 an intended increase of 7 per cent in plantings was reported and the acreage available for harvest was increased about 10 per cent. Reports this year seem to indicate that growers are now planning to plant an acreage 11 per cent smaller than they planted last year, indicating the probability of a harvested acreage slightly below that of 1927. As this indicates about average prospects, there is no reason to expect farmers to make material changes in their plans between now and planting time.

In estimating the acreage of potatoes needed next season, allowance must be made for the upward trend in yields that is resulting from more intensive methods of production. If average weather conditions are experienced this season, and yield follows the trend of recent years, a yield of about 117 bushels per acre must be expected. If this yield is secured on an acreage 11 per cent below that available for harvest in 1928, production will be around 400,000,000 bushels, and supplies after July 1 will be about equal to the average during the last ten years. In considering prospects for next year, it should, however, be borne in mind that yields have often been relatively low when seed has been cheap and potato growers discouraged. This year, farmers are planning to use a little more seed per acre, but the crop may not receive the usual attention.

While the indications of intended acreage are, of course, only approximations, they are sufficiently uniform to indicate that the principal reductions in acreage are to be expected in the early States, in the commercial sections of the second early States, that is Virginia, Maryland, Oklahoma and Kansas, and in the important potato area extending from Michigan to North Dakota. Substantial reductions are also to be expected in Idaho and Colorado. Maine reports a decrease of about 8 per cent and New York a

decrease of 4 per cent, but there are as yet no indications of any reduction in the acreage in Indiana, Ohio, Pennsylvania, and West Virginia. Nebraska and South Dakota and a few other scattering States are planning slight increases. On the whole, the acreages reported as intended in the late potato states seem well balanced. The Eastern States indicate only slight reductions in the intended acreage of late potatoes, for yields there have been increasing, and, because of the local markets, commercial growers seem to have succeeded in securing fair returns even in some years of rather low prices. This large acreage close to the markets justifies the decreases reported as intended in the commercial late potato areas farther west, where the depression this season is most severe.

The early potato States that market before July have a real problem this year. On January 1 merchantable stocks in hands of growers and local dealers were close to the record January holdings of six years ago, being estimated at 131,000,000 bushels compared with about 100,000,000 bushels last year. To permit early potatoes to sell to advantage in competition with these storage potatoes, production must be reduced sufficiently to keep early potatoes in a luxury class. This was accomplished in the springs of 1923 and 1925, but, in each case, a radical reduction in acreage was necessary. This year, growers in these early States apparently intend to decrease their acreage about 25 per cent. Such a reduction would relieve the situation somewhat, but would still leave prospects somewhat less favorable than usual.

SWEET POTATOES

The principal sweet potato areas are facing the probability of increased production this year. The important commercial sweet potato area which extends along the Atlantic Coast from Virginia to New Jersey secured an exceptionally heavy yield last season from a fairly large acreage, yet the sharp reduction in the southern crop helped them secure a relatively good price, considering quality. White potatoes grown in the same area were decidedly unprofitable and in reducing their white potato acreage growers in the Eastern Shore area are likely to shift too heavily to sweet potatoes this season. Some increase in the commercial sweet potato acreage of Tennessee is also probable.

The bulk of the sweet potato crop is grown for farm consumption and local markets in the Cotton Belt. Last year partially as a result of weather conditions the acreage was sharply decreased, the yield was rather low, and the price improved somewhat. This year with average weather conditions, a moderate increase in acreage and some increase in yield are to be expected, but nothing in the situation indicates the probability of such serious over-planting of sweet potatoes in southern sections as occurred in 1927.

DRY BEANS

With domestic consumption of beans apparently increasing at the rate of over a half million bushels annually, it appears that our present needs are in excess of 18,000,000 bushels and that the 1928 domestic crop of about 16,600,000 bushels is below such needs. An average yield in 1929 on an acreage 10 per cent greater than that harvested in 1928 would produce about the supply needed, provided such increased acreage is properly apportioned among the different classes, according to demand. Present price levels for beans will tempt to an excessive increase in acreage this year. An acreage increase materially above 10 per cent, especially if yield should be much above average, would incur the danger of a surplus that might put the market on an export basis with resulting drastic price reductions.

The 1927 crop of about 16,200,000 bushels was not sufficient for domestic needs, and net imports for the year ending June 30, 1928, were 1,784,000 bushels, the largest since the World War. Development of a shortage in the domestic supply, was followed by sharp advances in the prices of most of the commercial classes of beans early in 1928, which have been well maintained, with further advances in many varieties through the 1928-crop marketing season to date. A shortage abroad has contributed materially to the high price level.

Although the harvested acreage of dry beans in the United States as a whole was practically the same in 1928 as in 1927, there was considerable shifting of the total between states. In California, for example, the harvested acreage in 1928 was about 15 per cent, or 46,000 acres less than in 1927; in Michigan and New York, the principal bean producing States, there was a net reduction in combined acreage of about 4 per cent or 23,000 acres; in Idaho, Montana and Wyoming, producing mostly the great northern, total harvested acreage was increased 21 per cent or 26,000 acres; in the pinto producing States of Colorado and New Mexico the increase was 10 per cent, or 47,000 acres. These shifts were affected by varying percentages of abandonment of acreage.

Production of pea beans, mostly in Michigan and New York, was 5,447,000 bushels in 1928, compared with 4,558,000 bushels in 1927 and 6,320,000 bushels, the average for the five years 1923-1927. Following the heavy production in 1925 the average price to producers in Michigan declined to 3.7 cents per pound in the spring of 1926. With the commercial supply reduced by heavy losses from damage in 1926, and with the short crop of 1927, the Michigan price to producers advanced to $8\frac{1}{2}$ cents per pound in the spring of 1928. Although the production of this class was increased about 20 per cent in 1928, the Michigan December price to producers was still around 8 cents per pound. With such a price level producers will be strongly tempted to increase unduly the acreage of this variety. Thirteen per cent increase in acreage in 1929 with average yields would produce a total crop about equal to the five-year average. Although a fairly substantial increase in production appears justifiable, a recurrence of the situation following the 1925 crop should be carefully avoided.

Great northerns, direct competitors of pea beans in the wholesale grocery trade, are also in a fairly strong position. Prices have advanced along with those of pea beans, although production in 1927 and 1928 was higher than in any preceding year. The average farm price for great northerns on December 1, 1928 was about two cents per pound higher than that on December 1, 1927 but still about one cent per pound lower than that for pea beans. Yield per acre in the three principal producing States named were 16.7 bushels in 1928, compared with a five-year average of 18.1 bushels. Any increase in the acreage in 1929 over the large acreage of last year would entail risk unless the growers consider the production of this crop justified at prices much below present levels.

The estimated production of limas in California in 1928 is 2,210,000 bushels, a decrease of 4 per cent. The estimated carryover of limas into 1927 was about 400,000 bushels while that into 1928 was less than 40,000. About 2,600,000 bushels of limas and baby limas disappeared into the channels of trade during the 1927-28 season. With average yields, acreage would have to be increased about 20 per cent over last year to produce that quantity. The much higher prices being received for limas will tend to stimulate larger plantings and a considerable expansion in acreage on non-irrigated land may occur if moisture conditions are favorable. The present prices result from a shortage in limas coupled with a general bean shortage, a situation not likely to exist when this year's crop is marketed. Nevertheless, a moderate increase in the acreage, assuming average yields, is not likely to cause prices to drop to unprofitable levels, though some decline must be expected if production is increased. The chief danger lies in an extreme expansion of acreage such as occurred in 1926.

The pinto acreage harvested was 10 per cent larger in 1928 than in 1927 but yields were about 25 per cent below average. The present price levels for pintos result partly from the high general price levels for beans. Further acreage increases might easily result in price recessions such as occurred in 1925-26.

The California red is in excessive supply due to an extreme expansion of acreage in Idaho. The supply of red kidneys and most other colored beans seems to be adjusted to the consumptive requirements of the respective classes in this group; apparently changes in the acreage of these for 1929 should be made only if such change is considered desirable in the readjustment of the acreage of competing crops on individual farms.

FRUITS

The production of leading fruits and melons in 1928, which was a year of generally favorable weather conditions, amounted to more than 14 million tons. While below the record production of 1926, the crop was about 13 per cent greater than the average production during the preceding five years and 28 per cent greater than the light crop of 1927. As a result of the excessive production in 1928, large quantities of peaches and grapes were not harvested. The marketing of the combined large crops of apples, pears, citrus fruits, strawberries and melons has presented difficult problems. Indications are that fruit production in the United States during the next few years will show a gradual increase from the average of recent years. The outlook is for continued keen competition among the various fruits, and for low prices in seasons when growing conditions are unusually favorable. Imported fruits particularly bananas are important in our market supplies. Banana imports have shown an upward trend during the last five years and in terms of carloads have exceeded the carload shipments of apples for the same period.

Although occasional over-production has always been one of the problems of the fruit grower, the present situation is partially the result of the over-planting of certain fruits during periods of high prices. In some areas planting has also been artificially stimulated by those who had land for sale or were otherwise financially interested. Heavy losses are experienced when an excessive acreage is set to fruit trees and future market prospects should always be considered by those who contemplate fruit plantings.

Consumers are more discriminating than formerly in their fruit purchases. High-quality fruit of desired varieties sells at substantial premiums over fruit of inferior quality.

CABBAGE

The immediate market outlook for old cabbage and for the early cabbage crop is favored by the light holdings in northern storage, but, if intentions of heavy plantings of southern cabbage are carried out, prices will be reduced.

Last season the early and second-early area, from Florida and Texas north to Virginia, had a medium yield per acre and prices generally higher than the year before. The usual tendency after such conditions, and following a light northern crop, has been to expand the southern cabbage plantings. Florida seems to be growing the largest acreage in five years, and Texas the second largest in that period. It is expected that old cabbage will be cleared out promptly. If the main southern season starts early, if the yield proves moderate, and if the new crop moves to market gradually, affairs may go smoothly, even with the larger acreage in the earliest shipping States, but prospective gains appear likely to reduce returns in the sections shipping a little later.

In the second-early area, seven leading States--Alabama, Georgia, Louisiana, Mississippi, North Carolina, South Carolina and Virginia--have planned a total acreage exceeding that of any recent year, and doubling the area planted five years ago. Increases of 25 per cent or more as compared with last season in Alabama, South Carolina, and Virginia seem likely to result in reduced returns in late spring and early summer. A reduction of at least one acre in ten as compared with intentions in the second-early region would bring the planting within safer limits.

The intermediate area, from New Jersey and Maryland westward to the central-Mississippi Valley, passed through a rather unsatisfactory season in 1928, with light to medium yield from a larger acreage and with average prices one-third lower than for the year preceding. The tendency to increase the plantings south of this area, with possibility of severe general market competition, suggests a return here to the 4 or 5 per cent lighter acreage of 1927.

Northern main-crop cabbage should be held close to last season's moderate plantings. The reduction of about 10 per cent in 1928 brought the acreage down to 57,000 acres, a little under the 5-year average. This average (about 60,000 acres) under usual growing conditions has provided as ample supplies as can be disposed of at profitable prices. The cabbage market is easily upset by sharp changes in volume of production.

No further increase of acreage for kraut seems called for this season, after four years of steady expansion. The 8 per cent gain of last season was more than offset by the light yields in New York, Michigan, Ohio, and a few other centers of the kraut industry. With average weather conditions, an average yield from the nearly 15,000 acres harvested in 1928 would have produced only about 10 per cent less than the excessive crop of 1927, which resulted in comparatively low prices and a heavy carryover of the manufactured product.

LETTUCE

After several years of extremely rapid expansion of lettuce acreage, the point has been reached at which a substantial immediate increase seems undesirable, particularly in western States, until the market develops greater capacity.

Lettuce has shown more rapid gain in production during recent years than any other vegetable crop. Plantings have doubled in five years, and are now more than seven times the acreage of 10 years ago. Danger of overproduction seems greatest in California and Arizona, where the industry has been expanded most rapidly. These States, with Colorado, raise about five-sixths of the lettuce crop. Shipments are now approximately 50,000 carloads a year and are exceeded only by the potato movement.

In seasons of high production or ordinary quality the returns to the growers are less favorable, as was the case in the Imperial Valley of California in 1926-27. Two years ago large quantities of lettuce produced in Imperial County, California, were not shipped because of unfavorable market conditions. On the other hand, last season's cut of fully one-third in the lettuce acreage of Imperial Valley was attended by a gain of over $1,000,000 in farm value of the crop in that section, and a 20 per cent lighter acreage in the other main shipping areas resulted in prices fully 10 per cent higher than the year before.

This season, the tendency has been toward larger acreage. Plantings in four early shipping States (Imperial Valley of California, Arizona, Texas, and Florida) show an increase of 25 per cent over last season, with a corresponding gain in the expected production.

In the late-crop area, including Colorado, Idaho, Wyoming, New Mexico, Oregon, and Washington in the West, and New York, New Jersey, and Pennsylvania, in the East, growers should resist any general tendency to exceed last season's more moderate plantings. In that area acreage averaged one-fifth less and production one-fourth lighter last year than in 1927. Prices were correspondingly higher as a rule, except where crop injury occurred. Most of the reduction last season in the eastern lettuce area was in New York, where nearly one-third lighter production brought nearly double the average price per crate, as compared with 1927. Probably the chief danger in the late lettuce area is the possibility that the Rocky Mountain States and New York, which showed most of the acreage reduction last season, may return to the over-liberal 1927 planting.

ONIONS

Any increase in acreage in the late-main or northern onion area, above the close to normal acreage of last year, would probably result in lower prices in 1929. Onion shortage of the past season was the result of a yield per acre nearly one-fourth lighter in this main-crop region rather than the 10 per cent cut in acreage. The area planted there was still as large as in most other seasons and near the 5-year average. Danger of overplanting the northern crop in 1929 seems greatest in such producing sections as central California, Colorado, Idaho, Minnesota, and Iowa, which had generally light acreage but fair-to-good yield, attended with rising prices. Northeastern growers, after their small, rather poor crop and unsatisfactory returns for several years, with low returns per acre, seem unlikely to increase acreage, notwithstanding the high market prices for good quality onions in 1928.

In the midseason shipping area, including Virginia, New Jersey, Kentucky, and northeastern Texas, any increase would be still more dangerous; a reduction of at least one acre in five, in northeastern Texas, would help the market prospect for early summer. Growers in these sections planted liberally last year and sold at prices approximately the lowest in recent years. They will again face severe competition at both ends of their marketing season, with possibly heavy production North and South, offset to some extent by the restrictive tendency of the increased tariff on imports.

The early southern plantings of Bermuda-type onions approach 25,000 acres and exceed the extremely large area planted in 1928. The onion acreage is large enough in southern California, Louisiana, and especially in Texas, to suggest prolonged marketing season and a need for very careful handling of shipment and distribution. Early marketings will be favored by the unusually light supply in northern storage and by the 50 per cent higher tariff rate which may tend to limit the usual heavy spring imports from Egypt.

CITRUS FRUITS

The 1929 outlook indicates, as did those of the three previous years, a considerable increase in the bearing acreages of grapefruit and oranges. Many trees now in bearing have not reached the age of maximum yield and a large increase over production in recent years may be expected in years when favorable growing weather prevails. Under these conditions price levels below those of recent years may be anticipated. The bearing acreage of lemons has not shown any pronounced change since 1921; a slightly downward trend is now indicated, but production is on a high level and the industry has been confronted with difficult marketing problems.

The forecast of bearing acreage of oranges in California indicates only a small increase during the next three years. The 1928 bearing acreage in California is estimated at 187,000 acres, whereas the 1931 bearing acreage is forecast at 192,000. Practically all of the increase in bearing acreage in that State will be Valencias, which are shipped from May to October. Although only 11 per cent of the total orange acreage of about 210,000 acres in California is not of bearing age, both Florida and Texas have large acreages in non-bearing trees. Assuming an average of 70 trees per acre, total acreage in Florida is estimated at 195,000 acres, compared with 13,600 in the Lower Rio Grande Valley of Texas. In Florida about 20 per cent is non-bearing whereas in Texas about 80 per cent is of non-bearing age.

Exports to Great Britain in 1928 (150,000 boxes) were less than in 1927, largely as a result of the favorable market situation in the United States. As usual, most of the shipments were made during the summer months when there is less competition from other sources. In this connection, the large increase in the British takings of Brazilian oranges is significant. Imports into Great Britain from Brazil, which compete with American oranges during the summer and fall months, amounted to about 130,000 boxes in 1928 compared with only 28,000 in 1927.

Florida, with a total grapefruit acreage estimated at 80,000 acres, has approximately 93 per cent of bearing age. The Lower Rio Grande Valley of Texas, with about 43 per cent of the acreage of Florida, is estimated to have about 20 per cent of bearing age. The California bearing acreage is given as 7,800 with a forecast of 10,200 bearing acres for 1931. Of the 3,200 acres in Arizona, only 1,200 are in bearing. In Porto Rico, where the acreage is estimated at 3,760, the hurricane last fall destroyed almost the entire crop of 1928-29 and may adversely affect production for 1929-30.

The popularity of grapefruit is still on the increase in Great Britain. Total United States exports of grapefruit, which include the Porto Rican fruit, were somewhat less in 1928 than the relatively high figure reached in 1927, but this was because of a decline in shipments of Porto Rican grapefruit as a result of the hurricane. Supplies of grapefruit on the British market have been liberal during recent weeks and prices have been low, resulting in the introduction of the fruit into many homes where it had not been used before and may stimulate future consumption.

In view of the possibilities of increased orange and grapefruit production, growers should regard the lower price levels in prospect for the 1928-29 winter season as more typical of prices to be realized under favorable production conditions during the next few years than were the higher prices which prevailed for the smaller crop of 1927-28.

In California, where practically the entire lemon industry of the United States is located, recent production has been so great that difficult marketing conditions have resulted. The bearing acreage has not changed greatly since 1921 although the slightly downward trend which began in 1926 is expected to continue for the next few years. Indications are that production is now at about the peak. Imports, chiefly from Sicily, have averaged nearly 1,000,000 boxes during the last five seasons, which is about one-fifth as large as the annual domestic shipments. During pre-war years a much larger quantity was imported annually. The average for the five seasons ending in 1914, more than 2,000,000 boxes, was about one-third greater than the average domestic shipments for the same seasons. No pronounced trend in lemon production in Sicily is evident. If prices of fresh lemons and by-products in Sicily continue on the same level, or on a higher level than in recent years, it is only a question of time before there will be an increase in production.

APPLES

Commercial production for the country as a whole will continue at a high level and probably will increase over a period of 5 or 10 years. The rate of increase is likely to be lower than during the last 10 years, but with the large number of trees now in commercial and small farm orchards the possibility of heavy production and low prices will continue. Over a period of years, however, commercial growers who are favorably located and who produce fruit of high quality at low cost may view the future with some optimism, if plantings in general are confined to those needed for replacement purposes. The future appears to be no brighter than the past for growers whose returns have been low because of poor varieties, or because of poor location with respect either to market or to growing conditions. Commercial plantings appear to be justified only where unusually favorable conditions exist for the economical production of good quality fruit.

Recent plantings show a decided shift toward the higher quality varieties in response to consumers' demand. The large numbers of young trees of some of the popular varieties such as the Delicious, McIntosh, Jonathan, Stayman Winesap, Winesap, and Yellow Transparent, foreshadow increasing production of these varieties for several years. Production from these six varieties constituted 43 per cent of the market supplies in the 1926 season, according to a survey in 41 cities. Recent plantings of some of the older well-known varieties, and of many of the minor varieties, have been light.

A recent tree survey made in 22 of the important apple States, which produce about 80 per cent of our apples, indicates that between 25 and 30 per cent of the trees in commercial orchards were planted during the last 8 years, and that 65 to 70 per cent were planted during the last 18 years. A relatively large number of the trees in commercial orchards are in the more favored sections, and there have been noticeable recent tendencies toward improved methods of production. These movements will probably tend to increase the bearing life of orchards during the next several years. Based on this assumption it seems likely that the present number of young trees is sufficiently large to bring about a material increase in commercial production during the next 5 to 10 years, unless apple prices are so low as to cause neglect of the trees in some areas where costs are high or quality is low.

A large part of the increase in commercial production of the last 10 or 15 years was the result of heavy plantings in the boxed-apple States. In this region, production increased from about 19,000,000 bushels per year during the period, 1909 - 1913, to about 54,000,000 bushels annually during the years, 1924 - 1928. Present indications are that apple production in the Northwest is near its peak. Production was only slightly higher during the last five years than during the previous five years; in 1925 there were only one-fifth as many trees not of bearing age as there were 15 years previously; recent plantings probably have not been sufficient to maintain the number of trees in this region.

In the barreled-apple States, as a whole, recent plantings have been fairly heavy. About two-thirds of the commercial trees were planted during the last 18 years, and nearly one-third were planted during the last 8 years. If the trees are given reasonable care, the bearing capacity of the commercial orchards will probably continue to increase over a period of years. This increase may be partially offset by the abandonment and pulling out of the older farm orchards and less popular varieties.

Outstanding examples of recent heavy plantings of specific varieties are found in the case of the McIntosh, the Delicious, the Stayman Winesap, and the Yellow Transparent. Trees of these four varieties probably constitute one-fifth of the commercial apple trees in the important apple-producing States. About half of these trees were planted during the last 8 years, and from 90 to 95 per cent were planted during the last 18 years. Winesap, Jonathan, and Rome Beauty have been extensively planted. Trees of these varieties probably constitute another fifth of the trees in commercial orchards. About one quarter of these trees are under 9 years of age, and 75 to 80 per cent were planted during the last 18 years. With reasonable care, it is likely that production of most of these varieties will increase decidedly during the next several years. The high price paid for apples of some of these varieties, particularly for the Delicious and the McIntosh, indicates that as production increases some of the present market varieties may be replaced to some extent by these more popular varieties.

From recent tree plantings it appears that outstanding increases in production of these varieties will be as follows: McIntosh, in New York and some of the New England States; Delicious, in a number of the important apple States scattered from coast to coast; Stayman Winesap, in the Central States, the Cumberland-Shenandoah section, and in New Jersey and Delaware; Yellow Transparent, in Illinois, Tennessee, Kentucky, New Jersey, Delaware, and Maryland; Winesap, in the Central States east of the Mississippi River, and in Delaware, and in New Jersey; Jonathan, in the Central States, in the Cumberland-Shenandoah section, in Michigan and in New York; Rome Beauty, in Delaware, and in New Jersey.

Among the older fall and winter varieties, the Ben Davis is declining, only 7 per cent of the trees of this variety throughout the important apple states having been planted during the last 8 years. Only light plantings of the York Imperial have been made during this time. The Baldwin, the Northern Spy, and Rhode Island Greening have been planted only moderately during recent years. Many other less important varieties are giving way to the more popular varieties.

Exports of the last five crop years have averaged about 13 per cent of the United States commercial crop. Continental European markets for American apples have become increasingly important in recent years and with the more stabilized economic conditions now prevailing, should provide increasing outlets. On the other hand little expansion in the British market is to be expected in the near future in view of the depressed industrial conditions and the large number of unemployed in some of the major industries.

For the remainder of the 1928 crop season the outlook is for continued strong competition on domestic markets. The 1928 commercial apple crop was 36 per cent greater than that of 1927 and 9 per cent above the average of the previous five seasons. Cold storage holdings on January 1 were 30 per cent greater than on January 1, 1928, and 8 per cent above the five-year average for that date. This larger supply will meet greater competition on the markets than last season from larger crops of oranges, grapefruit, and pears.

The export outlook for the spring months of 1929 in European markets is favorable. Exports for this season through November totalled about 9,000,000 bushels and were about 64 per cent greater than for the same period last year, because of the larger American crop and short supplies of European apples. Indications are that the apple crop in Australia and New Zealand will be lighter than last year, which will mean less competition for American apples in European markets during the spring.

PEACHES

The outlook is for continued heavy production of peaches for the next few seasons, whenever weather conditions are favorable. In the South production for the present cycle is probably near the peak. Extremely heavy production is likely to continue for several years in California, and, until production reaches a considerably lower level in both these areas, continued difficult marketing conditions may be expected. In California the prospective increase in production during the next few years will be in the clingstone (canning) varieties whereas the production of freestone varieties is expected to decline. In other commercial fresh peach areas, on the whole, recent new plantings have been moderate, and no large increases in production under normal weather conditions are anticipated in the near future.

Peach production in the South has increased greatly in recent years. The extent is indicated by the carload shipments from seven important southern States, which averaged 68 per cent more for the last four years than for the previous four year period. The peach tree survey of 1925 indicated that two-thirds of the commercial trees in these seven States were not over five years of age. The majority of this group is now not far from the maximum bearing age.

In some southern districts, particularly in Georgia, many of the poorer orchards have been pulled out or abandoned. Plantings in recent years have not been sufficient to replace trees eliminated. Disease, neglect, and age have reduced the productive power of many trees. Much of the tree mortality in Georgia has occurred in the southern part of the belt, from which the earliest shipments are made, whereas in the north central part of the State there may be some further increase in production.

Indications are that some reduction in bearing acreage in the southern States will continue, and that as the large number of trees now in their prime decline in productivity, a considerable decrease from present bearing capacity will result. Looking forward four or five years, southern growers who are situated advantageously with respect to production and marketing facilities may expect more satisfactory returns than those of recent large crop years.

In other fresh peach producing areas such as the Middle Atlantic, Middle Western, and Mountain States limited plantings sufficient to maintain the present bearing acreage seem advisable. In some districts in these areas certain factors, such as roadside markets and motor truck transportation, have changed methods of marketing the crop. Some shifts in producing districts and in varieties in these areas might be desirable because of local marketing conditions or local production hazards.

The 1928 California crop was about one-fourth larger than the heavy crop of 1927. As in 1927, a large quantity (estimated at about 11 per cent of the 1928 crop) was not harvested, or not utilized, in 1928 because of marketing conditions. Continued heavy production is in prospect for the next few years. Although California peaches are used principally for canning and drying, they have been shipped as fresh fruit to eastern and midwestern cities in considerable volume when prices in these markets were high enough to encourage such shipments.

During the next few years when the profit from peach growing in many districts is likely to be uncertain, growers and shippers will do well to make every effort to produce and market high quality peaches. When market supplies are heavy, peaches of poor quality and condition, and of small size, often fail to pay transportation charges and may depress the price of the better fruit. Proper cultural and grading practices are especially important at this time.

GRAPES

Conditions in the grape industry continued unsatisfactory during the past year. Heavy production in the West is in prospect for the next several years. It appears that any probable immediate increase in consumption will be too limited to aid in marketing the crop unless abetted by an immediate reduction in acreage, particularly in California. The high point of consumption established in 1927 was maintained in 1928, but at much lower prices.

The California situation overshadows that in all other sections because approximately 90 per cent of the grapes are produced in that State. Although the production in California in 1928 was 3.2 per cent less than in 1927, increased production in Eastern and Middlewestern States more than equalled the decrease in California. In the other grape States production in 1928 was 53 per cent greater than in 1927. Carload shipments from California were about 4,600 less than in 1927, when the movement reached nearly 76,000 cars, but tonnage shipped was approximately the same because of an increase in the minimum carload weight. Only unfavorable weather conditions in California prevented the crop in that State from exceeding the 1927 production. Low prices in 1928 caused 153,000 tons, or over 10,000 carloads, to remain unharvested. The tonnage of grapes used for raisin production was 12 per cent less than in 1927, but about the same tonnage of raisin varieties was shipped fresh in 1928 as in 1927.

The limited plantings in California during 1928 will probably be offset by abandonment and destruction of vineyards, but it is doubtful if any decrease in bearing acreage will be sufficient to curtail total production during the next few years. Considerable reduction in acreage would be needed to offset the 153,000 tons which were not harvested in 1928. The heavy set on the vines in 1928, coupled with heavy crops and lack of care for the last few years, may reduce the yield in 1929.

In the Eastern and Middlewestern States the fairly heavy crops in 1928 were marketed at low prices. New York, Pennsylvania, Ohio, Michigan, Missouri, and Arkansas had 62 per cent more grapes than in 1927, a year of low production. As records show that most years of heavy production in these States have been followed by years of relatively light production, it is probable that the 1929 crop in these sections may be lighter than the crop of 1928, but for some years Eastern and Middlewestern sections will continue to feel the competition of the heavy California supply.

The relatively high consumption will probably be maintained and because of special efforts to improve distribution and develop new uses, consumption may be increased slightly. However, such relief as may be secured is not likely to overcome the difficulties of marketing the entire crop at satisfactory prices. An immediate reduction of bearing acreage seems to be the surest method.

STRAWBERRIES

Acreage of strawberries in the early and the late shipping States, where there is only limited competition, does not appear to be excessive, and market prospects in those areas are fairly good. The principal trouble with the strawberry situation seems to remain in the second-early and the intermediate States, where acreage and production are still in excess of the market requirements. A general reduction of about 20 per cent in commercial acreage in these mid-season sections appears advisable, if returns to growers are to be more favorable than in recent seasons. Further immediate expansion will be particularly dangerous in the Ozark region and in eastern States from Virginia to New Jersey.

Although the 1928 acreage was slightly greater than that of 1927 in the early and the late strawberry States, average farm prices in those sections were maintained at the 1927 level. An increase of 14 per cent in acreage of the second-early States was accompanied by a decline of 14 per cent (or 2 cents per quart) in average farm price for that territory. Likewise, a 4 per cent increase of acreage in the intermediate group was accompanied by a decline of 29 per cent (or 4 cents per quart) in the average farm price there.

The 1928 strawberry crop of 325,000,000 quarts was the largest ever produced, exceeding that of 1927 by 4,500,000 quarts. The extremely low prices of 1928 were caused by a concentration of about 70 per cent of the shipments within four weeks' time. Fully half the movement of the berry crop usually occurs within four weeks at the peak of the season, when the second-early and intermediate States are most active, but the excessive market congestion which occurred last year may not be repeated in 1929.

Among the early shipping States in 1928, Louisiana had an exceptionally profitable season, although a heavy yield resulted in a crop twice as great as the light crop of 1927. This success was partly due to the lighter production in Florida, to the good quality of Louisiana berries, and to the great delay in movement from succeeding States. Alabama had more acres in strawberries and a much heavier yield than in 1927, but had a slightly higher average price. Preliminary reports indicate a 10 per cent increase over the 1928 acreage in the early States as a group, with Louisiana showing a 4 per cent increase.

The second-early group (southern California, Arkansas, Tennessee, Georgia, South Carolina, North Carolina, and Virginia) had a huge crop of 96,000,000 quarts last season from a very liberal acreage. Unfavorable weather in some States affected quality, and the overlapping of the Louisiana season upon heavy movement from the second-early group resulted in generally lower prices. The proposed acreage reduction of 9 per cent, as reported by growers in this territory, should improve the 1929 market, but, with normal yields, will scarcely be a sufficient reduction to restore farm prices to a favorable basis.

The 1928 acreage in intermediate States (Maryland, Delaware, New Jersey, Kentucky, Illinois, Indiana, Iowa, Missouri, Kansas and parts of California) was also greater than that of 1927, but lower yields per acre resulted in a lighter total crop (105,000,000 quarts). In some States the quality was below normal. Missouri had a bumper crop of 28,000,000 quarts. Farm prices in this group were below those elsewhere, and ranged from an average of 7 cents in Maryland to 15 cents in Iowa and California, the average for the group being only 10 cents. Preliminary reports indicate a probable reduction of 11 per cent in acreage of the intermediate group this season, but further curtailment seems essential, if prices are to be restored to the more favorable levels which prevailed prior to 19

The late strawberry States (New York, Pennsylvania, Ohio, Michigan, Wisconsin, Utah, Oregon, and Washington) meet little competition. Lighter yields per acre reduced the 1928 crop in this territory to 69,000,000 quarts, about 9,000,000 less than in 1927. Prices generally were good, but there seems to be little reason for expanding the acreage in these States.

CANTALOUPES

In general about the same cantaloupe acreage for the United States as a whole as in 1928, with a few sharp local adjustments, will give satisfactory results this season, assuming average growing and marketing conditions.

The earliest cantaloupe shipping sections (those in California and Texas, together with Florida and Georgia) marketed their crops at higher average prices than in 1927. The acreage of these sections seems fairly well adjusted to market requirements, for average conditions, and probably could be maintained.

The intermediate shipping area suffered from a serious depression of prices last summer, the result of heavy production, liberal supplies of fruit, and overlapping of shipping seasons. A reduction of acreage in central California of not over 15 per cent would probably give most favorable results. In 1928, with an acreage approximately 30 per cent larger than in 1927, and with heavy yields per acre, prices were unprofitably low throughout the entire season. The acreage in the other mid-season sections of Arizona, Nevada, Texas, Oklahoma, Arkansas, Illinois, Indiana, South Carolina, North Carolina, Maryland, and Delaware probably should be maintained. Much of the trouble in these sections last year came from the exceptionally heavy production in central California.

The late shipping area (New Mexico, Colorado, Nevada, Washington, Kansas, Iowa, Michigan, Tennessee, and New Jersey) seems justified in holding to last year's acreage, which was 17 per cent less than in 1927. With the possibility of reduction in cantaloupe acreage in other sections and with probably less competition from other fruits, the market outlook should be favorable in 1929, if the acreage in this area is not increased.

Increasing attention is being given in western States to Honey Dew and other miscellaneous melons, which have been bringing fairly high returns, partly because of their longer shipping season and better keeping qualities. Movement of this class of melons last year increased about 50 per cent to 9,225 cars, or nearly one-third as many as the shipments of cantaloupes. Growers who contemplate any expansion in acreage of cantaloupes will do well to remember the increasing competition of these other varieties of muskmelons.

WATERMELONS

Unless watermelon acreage is reduced from 10 to 20 per cent below that of 1928, an average yield in 1929 is likely to result in unsatisfactory prices. An average cut of about 15 per cent would limit the producing area close to the more moderate acreage of 1927 and still yield an average crop in an average season.

Last year, fortunately, the largest plantings in many seasons were offset by lightest yields in several years. Otherwise, some shipping sections of the Southeast would have fared worse than they did, with the handicaps of a cool summer, a late overlapping market season, and a liberal supply of early fruits.

The earliest shipping sections (Florida, Texas, and Imperial Valley of California) had a fairly prosperous season, with a light yield, but with prices considerably higher than the year before. As the season moved northward, yields continued light to medium in Georgia, Alabama, Mississippi, and the Carolinas, but the total supply was liberal, demand unsatisfactory because of cold weather, and prices were comparatively low. The farm price for South Carolina melons dropped to $94 per carload, compared with $168 in 1927, while decreases in the 1928 farm price of $20 and $13 respectively occurred in Georgia and North Carolina. A reduction of about 10 per cent in the southeastern watermelon acreage seems advisable.

Among the late shipping States (including parts of California outside the Imperial Valley, and the shipping sections in Washington, Colorado, Oklahoma, Arkansas, Missouri, Iowa, Illinois, Indiana, Virginia, Maryland, Delaware and New Jersey) a production heavier than in 1927 was obtained in all except Oklahoma and Maryland. Missouri showed the largest acreage increase and a 60 per cent increase in production, compared with that of 1927. The result of the generally heavy late shipments was a decline of 20 per cent in the average farm price. A reduction of acreage, averaging nearly 20 per cent, seems desirable in this region, bringing the plantings back near the 1927 figure.

PEANUTS

A 50 per cent increase in the tariff rate on shelled peanuts, and nearly that much on unshelled, was authorized on January 19, 1929, raising the duty from 3 to 4¼ cents per pound on unshelled, and from 4 to 6 cents per pound on shelled peanuts. Even with this advance in effect, probably not more than 25 per cent increase in the production of large-podded, Virginia-type nuts can be absorbed without lowering the present average price of this type to the farmer. A maintenance this year of the 1928 acreage of Spanish and Runner types of peanuts in the Southeast and Southwest can be expected to result in prices reasonably satisfactory to the grower, but any material increase in the acreage of these types for market is likely to mean relatively low prices, because of the competition resulting from the increased production of No. 1 and No. 2 shelled Virginias incident to the probable larger plantings of Virginia type nuts.

Imports of Virginia-type peanuts during the crop year beginning November, 1927, were the equivalent of about one-third of the domestic production of Virginia-type nuts. Most of the imports correspond to the Extra Large grade, while domestic peanuts of the 1927 crop were unusually small in size, and even if all grades of farmers' stock had been shelled hardly 15 per cent Extra Large would have been produced. In effect, then, the 1927-28 imports were about equivalent to our 1927 domestic production of Extra Large nuts.

At the beginning of the 1928 season probably 15,000,000 pounds of domestic Virginia-type peanuts, or about 5 per cent of the crop, were held over. Further, according to trade estimates, there were in storage in Chicago shelled Chinese peanuts of the same type equivalent to 15,000,000 or 20,000,000 pounds of farmers' stock. The 1928 production in China is reported as about average, but American importers hesitated to purchase, expecting an early decision on the tariff rate. It is probable that imports for the rest of this year will be heavily curtailed, with a correspondingly increased demand for large-size domestic peanuts of the Virginia type. Stocks of large-podded peanuts will probably be very light before the close of the 1928-29 season. With the tariff increase now in effect Virginia-North Carolina farmers can probably raise 25 per cent more peanuts than in 1928 without oversupplying the market.

In the Southeastern States, where Spanish and Runner type peanuts are grown, carryover from the bumper 1927 crop is estimated as about 25,000,000 pounds of farmers' stock, or over 5 per cent, part of which was shelled and in storage in Chicago and affected the market at the beginning of the 1928 season. Demand for Southeastern peanuts this season has also been lessened by the fact that this season's crop is below average in quality because of excessive rains during the growing and harvesting period. Shipments to the middle of January out of the Southeast were only 50 per cent as large as those for last season to the same date, although heavier than shipments of the 1926 season for the corresponding period. With even a fair demand during the rest of the season, however, Southeastern shellers believe that the present crop will be practically out of the way before new peanuts come on in the fall of 1929.

The Southwestern States entered the 1928 season with a carryover of perhaps 5,000,000 pounds, or nearly 5 per cent. Production this year was about one-third greater than that of 1927, but the quality was superior to that in the Southeast and the crop has rapidly moved out of the hands of the growers.

The increased tariff will be of doubtful benefit to the grower of Spanish and Runner type peanuts, of which practically none are imported. They are to some extent interchangeable with Virginia-type peanuts, especially in certain candy bars, but the increased demand for shelled Virginias resulting from lessened imports will be primarily for the Extra Large size used by salters. Further, if the output of No. 1 and No. 2 Virginias is greatly increased there may be a price reaction which will affect shelled Spanish and Runners. Prices of Runners and Spanish are slightly higher than they were a year ago but any material increase in the acreage of these varieties would probably result in prices unsatisfactory to the grower.

CLOVER AND ALFALFA SEED

A general increase in the acreage of red and alsike clover for seed and an increase of alfalfa for seed in central and northern producing districts are recommended. Stocks of alsike clover and alfalfa seed are expected to be practically exhausted and the carryover of domestic red clover seed will be small, after spring and early summer planting requirements have been met. Prices for these seeds have been relatively high, and are expected to continue at levels profitable to growers. The staining of imported red clover and alfalfa seed, under provisions of the Federal Seed Act, which became effective in 1926, probably will continue to stimulate the demand for these seeds grown in this country.

Notwithstanding the fact that stocks of sweet clover seed at the close of this spring will probably be the smallest in several years, curtailment of the acreage seems desirable. Production this year on an acreage equal to that available for seed last year, with average yields per acre, would be more than ample to meet requirements in the spring of 1930. Had it not been for unusually bad weather at and after harvest last fall in several of the most important producing districts, there would now be available enough seed to take care of this year's, and a considerable portion of next year's, requirements.

Red clover seed production, although one-third smaller than the relatively large 1927 crop, was larger than the below-normal crops in the previous four years. Total production of red and alsike clover seed was about 66,400,000 pounds in 1928, compared with 103,600,000 pounds in 1927 and an average production of 67,700,000 pounds for the five years, 1922-1926. Imports of red clover seed for the fiscal year ended June 30, 1928, were less than half those of the year before, and much below the average. They amounted to 4,640,800 pounds, compared with average annual imports of approximately 11,000,000 pounds. Imports since July 1, 1928, have been much larger than a year ago for the same period, but are below the average. They are expected to continue larger than a year ago during the next few months, as the 1928 European crop, plus carryover, exceeded the 1927 crop, plus carryover, two years ago. Prevailing wholesale prices for domestic red clover seed are about 75¢ per 100 pounds higher than the average price during the past five years and about $1 higher than last year at a corresponding time. An increase in the demand during the spring over that of last year should be noticeable particularly in the Central States, where winterkilling of red clover last spring was the greatest since 1917.

Alsike clover seed production in 1928 was the smallest in seven or more years, due to a marked reduction in acreage brought about by winterkilling, and also to smaller yields. The crop was only slightly more than one-half the size of the 1927 crop. Imports for the fiscal year ended June 30, 1928, totalling 7,608,600 pounds, were more than 80 per cent larger than the year before, and 50 per cent larger than the average annual imports for the past 18 years. Since July 1, 1928, however, imports have been much below normal, totalling for the period July 1, 1928 - Jan. 15, 1929, 1,728,900 pounds, compared with 3,092,100 pounds the year before and 4,607,000 pounds, the average for the same period during the previous five years. Prevailing prices are about 20 per cent above those of last year and 30 per cent above the average for the past five years at a corresponding time. The higher

prices may curtail demand to some extent but because of small stocks in this country and Canada, which countries produce the bulk of the world supply, the carryover is expected to be unusually small.

Growers of sweet clover are cautioned not to increase their acreage for seed production notwithstanding that the 1928 production fell below that of recent years. For several years a surplus has been piling up because consumption has not been keeping pace with production. Most of this surplus, and the 1928 crop, will probably be consumed this year at prevailing low prices, so that next year the surplus will not be so depressing a factor as during the recent past. It should be remembered that imports since July 1, 1928, from Canada, where the crop was unusually small last year, have been only about one-half the average for the past five years. Undoubtedly low prices paid to growers for two consecutive crops of sweet clover will tend to discourage many from harvesting a seed crop this year. In some sections, however, other crops can not be substituted easily, and production might well be confined to these areas.

Alfalfa seed production in 1928 was about 40 per cent smaller than in 1927. The decrease was mainly because of a marked reduction in yields, particularly in two of the largest producing States, Utah and Idaho, and shorter crops in several other States. Imports during the year ended June 30, 1928, totalling 182,300 pounds, were only about one-tenth the average for the past 5 years; since July 1 imports have continued in nearly the same proportion, reflecting another short crop in Canada. More seed, however, is expected to be imported from Turkestan during the next 8 or 10 weeks than during the same period in any year since 1920. Present supplies of domestic alfalfa are smaller than those for a number of years, but are expected to meet spring seeding requirements, which may, however, be affected somewhat by prevailing prices, the highest since 1920 and nearly 25 per cent above the average for the past five years.

TOBACCO

The outlook for cigar types of tobacco in 1929 appears favorable. The present outlook for flue cured tobacco indicates the need for a reduction in acreage in 1929 compared with 1928. A moderate increase in burley acreage might safely be made, but there is grave danger that the burley growers will respond to present prices by overplanting in 1929. The outlook for fire cured and dark air cured tobacco does not justify an increase in acreage in 1929.

The tobacco-consuming habits of the world, which have a determining effect upon the trends of tobacco production, manufacture, and international trade, continue to develop along lines that have been apparent in recent years. Cigarette consumption is steadily expanding and has reached a point where cigarette types constitute nearly three-fourths of the total American tobacco production. Cigar consumption, on the contrary, is slightly diminishing in total quantity and is changing in character, because of the steady increase in the consumption of low priced cigars accompanied by decreasing consumption of the medium and higher priced grades. The chewing habit is decreasing, although even here conflicting trends are to be noted; for whereas the quantities consumed of plug, twist and fine cut are steadily decreasing, snuff consumption is slowly increasing. All of these changes register their effects in different sections and exert a profound influence upon the character and economics of American production.

Foreign Competition and Demand

Exports of flue cured tobacco in 1928 increased markedly over those of 1927, largely because of the record takings by China, about 150,000,000 pounds. A leading factor contributing to the increased Chinese imports was the cessation of civil war which opened up transportation and made possible the building up of depleted stocks of leaf in interior points. The expectation of higher taxes also stimulated increased imports. The customs tariff effective February 1, 1929, is merely a consolidation of former duties and does not appear to offer any particular encouragement to tobacco-growing in China. The internal excise tax on cigarettes was increased. It seems probable that the replenishment of stocks in China in 1928 will result in lower takings of our flue cured tobacco in 1929, but over a longer period the Chinese demand seems likely to expand.

Although shipments of flue cured tobacco to Great Britain declined, this type occupies a dominant position in that market. The continued tendency away from pipes to cigarettes in Great Britain supports the demand for our flue cured tobacco. Difficulties are being experienced in disposing of cigarette leaf grown in Empire countries, notably Rhodesia, and stocks of these tobaccos have accumulated.

Exports of fire cured and air cured tobaccos were smaller in 1928 than in 1927, continuing the decline of recent years. Competition in our foreign markets for the dark types continues to increase although there may be some decrease in 1929 because of smaller European crops. Exports

of dark fired Kentucky and Tennessee tobacco to Italy, formerly a leading market for this type, have fallen rapidly since 1923, largely because of the expansion in Italian production. Growing conditions in Italy were unfavorable in 1928, and some decrease in production as compared with 1928 appears probable, in spite of increased acreage. Competition of British Empire tobaccos on the British market appears to have affected principally our dark types used in pipe tobacco. Smoking tobaccos manufactured from Empire leaf have been introduced much more successfully than have Empire cigarettes.

Flue-Cured, U. S. Types Nos. 11 to 14.

The present outlook for flue-cured tobacco indicates the need for a reduction in acreage in 1929 compared with 1928. The acreage harvested last year amounted to 1,147,200 acres, and production reached the record total of 723,436,000 pounds. Stocks on July 1, 1928, were 564,989,000 pounds, giving a total supply of 1,288,425,000 pounds. Total consumption during the year ending July 1, 1928, amounted to 617,431,000 pounds. In recent months, exports of flue-cured tobacco have been at their highest level, primarily because of the great increase in Chinese imports. From the standpoint of exports, therefore, consumption figures for the year ending July 1, 1929, may show an increase. On the other hand, the increase in exports indicates the possibility that foreign stocks will be replenished to a point that may curtail foreign requirements by the time the 1929 crop is ready for market. A further need for caution in the planting of flue-cured tobacco arises from the Burley situation. Production of this type reached a low ebb in 1927, and is still below consumption requirements, notwithstanding a considerable increase in 1928. High present prices are likely to force production beyond probable requirements in 1929.

The interests of growers will be best served by keeping 1929 production somewhat below that of last year. Normal yields on last year's acreage would result in a much larger crop because the average yield per acre in 1928 was relatively low. A reduction in acreage more than sufficient to allow for this factor appears desirable.

Burley, U. S. Type No. 31

Notwithstanding the considerable increase in the amount of Burley last year compared with 1927, production remains lower than normal disappearance. Stocks on October 1, last, were 103 million pounds less than on October 1, 1927, whereas production increased approximately 89,000,000 pounds, resulting in a total supply on October 1, 1928, of 14,000,000 pounds smaller than on October 1, 1927. If consumption continues as in the past, the stocks of Burley tobacco in the hands of dealers and manufacturers on October 1, 1929, will be several million pounds less than they were just prior to the opening of the present marketing season. The outlook is favorable for a moderate increase in acreage this year. However, it is emphasized that favorable prices now being paid to Burley growers result in part from the unusually high percentage of the crop suitable for the manufacture of cigarettes and smoking tobacco, and in part from the

rather low yield per acre in 1928. Plans for 1929 should recognize the possibility of heavier yields, which very likely would be accompanied by some reduction in manufacturing quality. The danger lies in the fact that present prices are likely to stimulate growers to disastrous overproduction. An increase in acreage not to exceed 6 to 8 per cent, however, would seem to be justified. Expansion into areas not suitable for the production of good quality of Burley will almost certainly prove disappointing to growers.

Maryland, U. S. Type No. 32

The outlook is favorable for an increase in production of Maryland tobacco in 1929, but an average yield on the acreage planted in 1928 would probably result in sufficient increase. As a result of storm damage, the 1928 crop was one of the smallest and poorest in recent years. The indications are that when the 1929 crop is ready for market there will be a shortage of high grade Maryland leaf and a surplus of lower grades. Evidently there will be more than the usual spread in price between good and common leaf and an unusual effort should be made to produce high grade tobacco.

One-Sucker, U. S. Type No. 35

The outlook for one-sucker tobacco is favorable for a crop of about the same size as that of 1928, which is estimated at 22,086,000 pounds. Total consumption during the year ended October 1, 1928, was 27,842,000 pounds. As exports are decreasing and there is a tendency toward lower domestic consumption, it seems probable that requirements for the ensuing year will be less than they were to October 1, 1928. Since stocks of old leaf are ample to meet any unexpected need, no increase in acreage appears advisable.

Green River, U. S. Type No. 36

Production of Green River tobacco has decreased in the past two years. As the crop of 1928 was slightly smaller than the consumption during the year ended October 1, 1928, and there was material reduction in old stocks, better prices have resulted. Consumption has been decreasing rapidly, however, and the lower rate of exportation in recent months indicates a continued downward trend of consumption. An increase in acreage, therefore, does not appear to be justified.

Virginia Sun-Cured, U. S. Type No. 37

The outlook for Virginia sun-cured type is practically unchanged. Production and consumption are about even. The prices being paid for the 1928 crop are lower than usual, probably because of the poor quality of the crop. No change in acreage appears advisable.

Virginia Fire-Cured, U. S. Type No. 21

The outlook for Virginia fire-cured tobacco is somewhat more favorable than a year ago, because of decreased production in the past two years and consequent reduction of old stocks, but exports during the first eleven

months of 1928 reached only 18,157,000 pounds, compared with 22,372,000 pounds during the corresponding period of 1927. No increase in acreage seems advisable until stocks have been further reduced.

Kentucky and Tennessee Dark Fire-Cured, U. S. Types Nos. 22 and 23.

The situation in fire-cured tobacco of Clarksville-Hopkinsville and Mayfield-Paducah types does not indicate need for increased production. Exports for the first 11 months of 1928 amounted to 82,167,000 pounds, compared with 106,949,000 pounds in the corresponding period of 1927. Production in 1928 amounted to 113,000,000 pounds and will probably equal, if not exceed, the requirements from October 1, 1928, to October 1, 1929.

With the declining exports of fire-cured tobacco and the decreasing consumption of chewing tobacco in this country, the upward tendency in snuff consumption becomes a factor of increasing importance in the determination of average price to growers. Increased production of tobacco of snuff and wrapper quality appears desirable. The outlook does not justify an increase in acreage.

Henderson Stemming, U. S. Type No. 24

The production of Henderson stemming tobacco in 1928 amounted to 5,500,000 pounds. Consumption during the year ended October 1 was slightly less than seven million pounds, but consumption is steadily decreasing, and the present outlook does not justify any increase in acreage.

Cigar Types

The situation with reference to supply and disappearance of cigar leaf of manufacturing quality can not be determined from stocks on hand. These figures represent the total stocks, not only those of so-called "packing grades", suitable for manufacture into cigars, but of stemming grades, or low grade tobacco not usable for cigars. Total stocks are relatively low, and because of unfavorable weather conditions in various cigar leaf districts during the last two or three years there is a shortage of good cigar tobacco of practically all classes.

Pennsylvania Filler, U. S. Type No. 41

Production of Pennsylvania filler type has increased, but the consumption of low priced cigars is increasing steadily, and no oversupply seems likely in the near future. This view is strengthened by the decreased quantity of Porto Rican filler tobacco available for blending. There appears to be justification for moderately increased production.

Miami Valley, U. S. Types Nos. 42, 43 and 44

Production of cigar leaf in the Miami Valley in 1928 was about 28 per cent less than the amount consumed during the year ended October 1, 1928. The effect will be a material reduction in stocks by October 1, 1929, and a

favorable market for a larger crop in 1929 than was produced in 1928. Even allowing for the probability of higher yields in 1929 than in 1928, there appears to be ample justification for a moderate increase in acreage.

Wisconsin Binder Types, U. S. Types Nos. 54 and 55

Production of tobacco in Wisconsin appears to be on a sufficiently high basis. Production in 1928 exceeded disappearance for the year ended October 1, 1928, by more than 5,000,000 pounds. Stocks on October 1, 1928, amounted to 72,548,000 pounds, a decrease of about 10,507,000 pounds from the preceding October 1. If the present rate of consumption is maintained, an increase in stocks by next October 1 may be expected. The situation indicates a favorable market in 1929 for a crop of about the same size as that of last year, and particularly for the good packing grades.

New England, New York and Pennsylvania Binder Types, U.S.Types Nos.51,52 & 53

The outlook is excellent for open field types of cigar tobacco grown in New England and in the Havana seed district of New York and Pennsylvania. Consumption for several years has exceeded production of broadleaf and Havana seed, and stocks have been materially reduced. Indications are that existing stocks contain a lower-than-usual percentage of tobacco suitable for cigar manufacture and a larger-than-usual percentage of stemming grades, since unseasonable weather conditions of the past two or more years have lowered the quality. Unfavorable prices received by growers have been due to this situation rather than to weakness in the market position of the crop. Farmers who produce good quality tobacco in 1929 may anticipate a ready market at favorable prices.

New England Shade Tobacco, U. S. Type No. 61

A considerable increase in production of shade-grown tobacco took place in 1928 in response to a need for more wrapper type tobacco, but the rainy season damaged the crop and the lower price to growers was apparently due to poor quality. In this type, as in the sun-grown types, there appears to be a deficiency of tobacco of manufacturing quality. The outlook for shade-grown cigar leaf will depend to some extent upon what changes, if any, are made in the tariff on wrapper tobacco.

Georgia-Florida cigar leaf, U. S. Types Nos. 45 and 62

A general expansion has taken place in the production and consumption of sun-grown and shade-grown cigar types in Georgia and Florida. Both types appear to be finding favor among manufacturers and there is no reason to anticipate any slackening of demand.

SUGAR

Prospects point to a continuation of large world sugar production, with sugar prices at a low level through another year. Prices may not go lower than in 1928 in which they have averaged the lowest in any year since the war. In recent months wholesale prices at New York have been the lowest since January, 1922. Any further decline might result in some curtailment in the grindings of sugar cane and ultimately in higher prices.

Reports to date indicate that world sugar production for the present season will be 4 per cent in excess of last season. Sugar consumption is increasing, but probably not rapidly enough to absorb the additional supply without leaving some increase in stocks at the beginning of the 1929-30 season, as compared with the stocks at the beginning of this season. There is no evidence that the world-wide tendency to expand production in both cane and beet producing areas has been checked, consequently producers in the United States may expect as great, if not greater, competition from foreign producers next season than they are experiencing in the present season. Under these conditions, domestic sugar producers can hardly expect improvement in the demand for their product next season.

The visible supply of sugar in the most important sugar-producing countries at the beginning of the current sugar-producing seasons was more than 100,000 short tons greater than the visible supply at the corresponding dates in 1927-28. Estimates to date, for the 1928-29 season, indicate that the world production will be about 29,452,000 short tons of raw sugar, an increase of 1,216,000 short tons, or 4 per cent, over the 1927-28 season. Adding the increase in visible supply to the increase in the crop provides a total available supply of about 1,300,000 short tons of sugar in excess of the supply available last year.

The prevailing low prices of sugar encourage some increase in consumption, but prices have been low through the past four years, and the annual consumption of raw sugar in the United States at present appears to be only about 1,122,000 short tons, or 16 per cent more than it was four years ago. Although consumption in Europe has been increasing, world consumption can hardly be expected to increase in one year enough to use an increase of 1,300,000 short tons in supplies.

Production of both cane and beet sugar in foreign countries continues to expand. The crop of Java has been increasing continuously since 1919; the present crop is estimated to be one-half million short tons in excess of last year. Cuba is also harvesting a record crop. No official estimate has been made, but the trade estimates the crop at 5,320,000 short tons, an increase of nearly 800,000 short tons over the 1927-28 crop. The removal of restrictions on production will release the entire crop for market unless low prices discourage the grinding of the entire crop. The sugar beet acreage of Europe has more than recovered from the effects of the war. The 1928 area totaled 6,655,000 acres as compared with a pre-war (1909-1913) average of 5,315,000 acres. Low prices may check the rate of expansion, but there is no indication of curtailment in the sugar-producing area of any important country.

HONEY

Following a rather light crop in 1928, supplies of honey are not as heavy as usual at this time of the year, and little carryover into the 1929 season is anticipated. On the whole, colony strength is satisfactory but fall stores were light in many sections and considerable spring dwindling is probable. The present outlook, based on the condition of honey plants, is for a honey flow in 1929 better than the average of recent years.

Although no estimates of the production of honey last year or of the probable carryover into the 1929 season can be given, it is generally believed by those in the honey industry that the 1928 crop was smaller than that of 1927. It is much more closely cleaned up than was the case a year ago, and no section is expected to have a large carryover. Probably the Southeastern States have a larger proportion of extracted honey remaining on hand than do other major producing areas. Section comb honey, which is being produced in much smaller volume than before the war, is in especially light supply. Production of bulk comb honey seems to be increasing, especially in the Southeast and in the Mountain States.

It is early to make any statement as to the probable production in 1929, because future weather conditions will determine the nectar flow. Abundant snow throughout the Intermountain Section is encouraging for this year's crop of sweet clover and alfalfa. During January considerable snow fell in the white clover and sweet clover area from New York west to the Plains, giving needed protection to the honey plants. Crop prospects are hopeful in the Southern States, based upon the present condition of honey plants. More rain is needed in California to insure a good crop of sage honey; but the orange flow is expected to be good.

In the Mountain States and the Pacific Northwest, colonies are generally strong in bees and well provided with stores. Throughout the white clover belt and in many other sections, fall stores were generally light, and even where colony strength was good heavy winter loss may be expected unless bees are fed in the spring. This warning seems to be especially needed in Southern California.

In the Southern States west to Texas, prices of extracted honey are one or two cents per pound lower than in 1927; and in the Plains area the market has been somewhat firmer than in 1927. Elsewhere there were no important price changes.

Export demand during the past two fiscal years has taken an average of over 10,000,000 pounds of honey, as compared with an average of 3,000,000 pounds for the preceding 6 years. The demand from Germany, which is largely responsible for this increase, has received a severe set-back by the recent German law which classes as adulterated, honey in which the diastase has been destroyed or impaired by heating. Several shipments have been refused by German importers on the ground that diastase content has been too low. Beekeepers whose honey may ultimately go to Europe should not heat even heavy honey more than just enough to strain out the particles of wax thrown off by the extractor. Honey from uncapping melters should not be added to honey taken from the extractor.