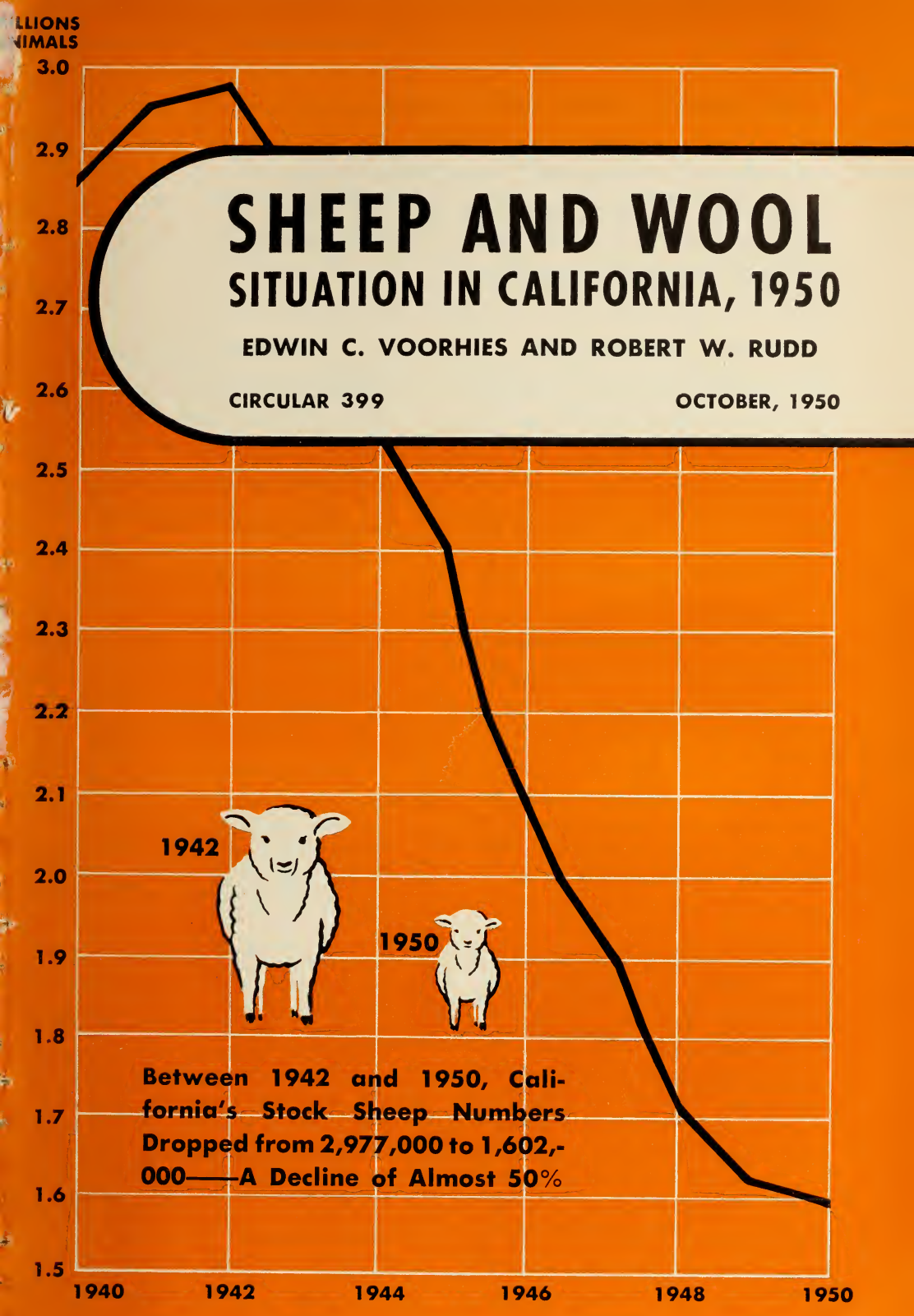


SHEEP AND WOOL SITUATION IN CALIFORNIA, 1950

EDWIN C. VOORHIES AND ROBERT W. RUDD

CIRCULAR 399 OCTOBER, 1950

CALIFORNIA AGRICULTURAL EXPERIMENT STATION · THE COLLEGE OF AGRICULTURE · UNIVERSITY OF CALIFORNIA · BERKELEY

THE SHEEP INDUSTRY **in California, the nation, and the world has been marked by changes. Those that have taken place in the past 10 years are stressed in this circular because they have had a vital effect on the California sheepman.**

WHAT HAS HAPPENED	WHAT IT MEANS
The following changes have affected the sheep industry over the past 10 years: 1. Land has been used for crops rather than for grazing. 2. During and immediately following the war, cattle and farming were more profitable than sheep. 3. Skilled sheep labor has been scarce and high priced. 4. Wool prices were relatively low, and the wool outlook was uncertain. 5. Grazing allotments in the national forests had been reduced. 6. Uncontrolled dogs and predatory animals were problems in some sections.	In California and the country as a whole, stock sheep numbers have dropped almost 50 per cent between 1942 and 1950. They are now at their lowest point in 83 years. There has been a heavy liquidation of foundation flocks.
Since 1940, California's population has increased by approximately 50 per cent, largely in industrial areas of deficit livestock supplies.	This increased market puts the state's livestock producers in a more advantageous position, but California must also ship in additional supplies of livestock including sheep and lambs.
Livestock supplies rose during the war and then dropped. Good crops and favorable prices in 1948 caused a rise in hog and cattle numbers, but sheep continued to go down. This decline apparently reached its lowest point by January 1, 1950.	Producer prices for lambs during the war rose more slowly than did those for cattle and hogs. Lamb prices have been fairly steady at relatively high levels since the war.
Per-capita meat consumption in the United States was higher in 1940–1947 than for any similar period in the past 50 years. This was the result of high employment, high wages, and high average disposable income.	There was more disposable income than there were goods and services. In view of unsettled world conditions, it appears that this relationship would continue.

WHAT HAS HAPPENED	WHAT IT MEANS
Sheep and cattle compete for range and pasture in most areas of the state. When sheep and beef cattle numbers are added, the total has not changed very much for 30 or 40 years.	Increases in the state's sheep numbers may not be rapid. A major problem is replacements for flocks that have been depleted. While sizes of flocks may increase, the holding back of ewe lambs will keep down production for some time to come.
Shorn wool production in the United States in 1949 was at its lowest point since 1879. California's present wool production is the smallest in recent years.	For a few years at least, the United States will be forced to use stored supplies of wool, if available, or to increase its wool imports.
If the government's goal of 360 million pounds of shorn wool per year is to be reached, there may have to be considerable government encouragement for the sheep industry.	To reach such a goal, there would have to be a national increase of 20 million sheep, one million of which would be in California. This goal is certainly not in sight at present.
The future of the wool textile industry in Europe and elsewhere and a rearmament program at home and abroad will have a powerful influence on the sheep industry.	Even if there is government support for the sheep industry, the United States will have to import wool to meet its needs. A strong foreign demand for wool will mean even greater encouragement for domestic prices.

WHAT OF THE FUTURE?

Forecasting is hazardous even when all pertinent data are available. Apparently, from 1950 on, factors favoring expansion in the sheep industry will outweigh those working against it. Supplies of lamb for the next few years will be relatively light.

There has been a fairly strong demand for wool since the war. Production and marketing quotas for alternative or competing enterprises will probably favor sheep raising. So long as wool production is low and no suitable substitute appears, it seems likely that wool will receive government support. Without doubt, world production of wool is rising and, barring drought and other uncertainties, it will soon top prewar production marks.

There are offsetting factors which cannot be ignored. There has been a persistent shortage of skilled sheep labor in some areas. The growth of noxious brush on rangeland in California as well as in other areas has been rapid, but some progress is being made in solving this problem. There is a growing dog problem in heavily populated areas, and predatory animals are a problem in other sections.

THE AUTHORS: Mr. Voorhies is Professor of Agricultural Economics and Economist in the Experiment Station and on the Giannini Foundation, Berkeley.

Robert W. Rudd was Research Assistant on the Giannini Foundation. (Resigned June 30, 1948.)

SHEEP AND WOOL
SITUATION IN CALIFORNIA, 1950

Edwin C. Voorhies and Robert W. Rudd

WORLD-WIDE HAPPENINGS affect California's sheep industry. The state produces only a fraction of the nation's supply of lambs and wool and consumes but a small part of its total lamb and mutton. But a large part of the state's wool is sold in a market over 3,000 miles away. While the nation's demand for lamb and mutton has usually been met by domestic production, part of the wool for the nation's mills has had to be imported.

The economic problems of the sheepman are difficult to analyze and understand because his is a joint-product industry—meat and wool. Lamb, the main product of the California sheepman, competes for the consumer's food dollar not only in California but also in areas outside of the state. Lamb and mutton are only a small part of the total meat consumed by the American people. Therefore, what happens to the supply and demand for other meats and for poultry and fish vitally affects lamb and mutton.

Wool, the secondary product, has been of less value. Not only is there competition between domestic and foreign wools, but also between wool and other fibers—vegetable (cotton), regenerated (rayon), and synthetic (nylon).

Even in a brief economic outlook, there are a number of factors influencing lamb, mutton, and wool supplies which will assist the California grower in placing himself in the supply picture. Most of these factors are beyond his control, as are those which affect the demand for his products.

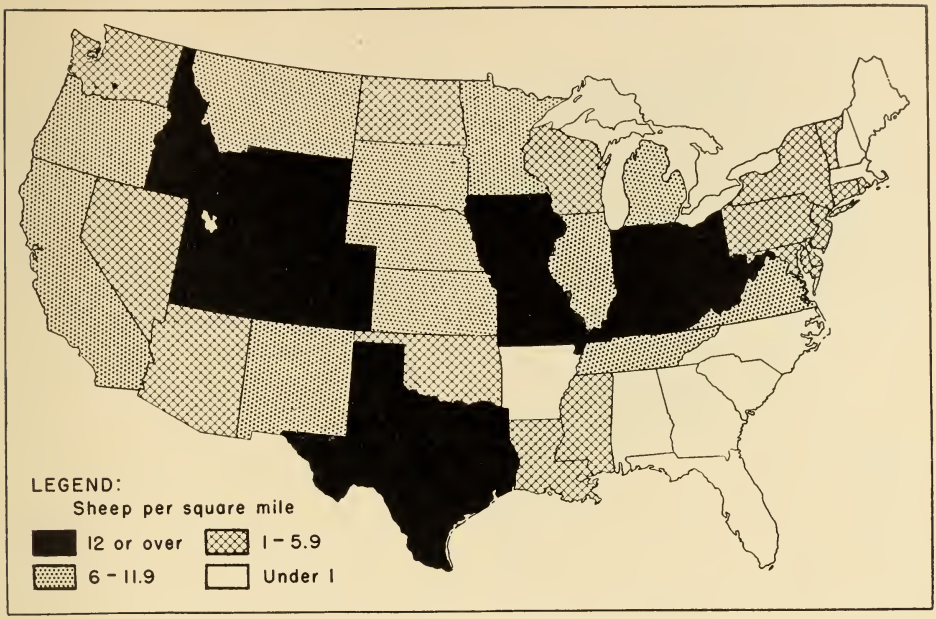
SHEEP NUMBERS

Since 1942, sheep numbers in the United States have dropped to their lowest point in history. California sheep production has reflected this drastic change.

Distribution.—Estimates are made of sheep and lamb numbers in the nation and in the separate states on January 1 of each year. These estimates are based on a census that is taken once every five years. However, unless the census is always taken on the same date, the figures are not directly comparable. Of special interest to the California grower is the concentration in the "West." On January 1, 1950, estimates placed 83 per cent of the nation's sheep west of the Mississippi River. Texas and the nine mountain states accounted for 55 per cent of the nation's total; when the three Pacific Coast states are added to that, the percentage is 64. Sheep raising is the most "western" of the nation's animal industries. One of the chief functions of sheep—together with cattle—is to utilize the forage produced on 60 to 75 per cent of the land area of the West.

Mere numbers divided among the political subdivisions offer a somewhat distorted view of distribution. In relation to land area, numbers vary from less than one sheep per square mile, in the southeastern states, to 25 in Texas and 30 in Ohio. Numbers per square mile are largest in the Rocky Mountain states and the

FIGURE 1—SHEEP AND LAMBS PER SQUARE MILE, 1950



Corn Belt including its northern and eastern approaches (fig. 1). California is slightly above average.

In relation to the human population, the Rocky Mountain states, followed by Texas and the Great Plains states, stand out (fig. 2). The states east of the Mississippi have a small sheep population in relation to the number of humans. California has a per-capita sheep population which is under the average of the entire country. A similar situation prevails for the Pacific Coast states considered as a whole.

Changes in Numbers and Distribution.—Sheep numbers have see-sawed so that it is difficult to detect any exact regularity in these movements, especially since 1923. Between 1923 and 1934, sheep in the United States grew from 37 to 54 million head. Between 1934 and 1937, there was a drop of about 3 million. Then an upward turn brought the figure to approximately 56.2 million by January 1, 1942—a record in recent decades (fig. 3). In the last eight years, the decline in numbers has been one of the most prolonged and drastic in history. A drop of 45 per cent (some 25 million head) brought the total to the lowest point recorded (since 1867)—approximately 30.8 million on January 1, 1950 (table 1).

In 1930 the West (mountain and Pacific Coast states) counted about 54 per cent of all the country's sheep and lambs. The west North Central states reported 14 per cent, and Texas slightly over 12. The remaining sheep were scattered except for a considerable concentration in Ohio.

A change occurred in the relative position of these areas during the 1930's and through the first years of World War II. By 1945, the West's percentage was slightly over 41, that of the west North Central states, 21, and of Texas, 21.

In spite of the eight-year decline, the western states still held their relative position. On January 1, 1950, they had an estimated 42 per cent of the country's sheep. Texas maintained its relative importance with 22 per cent. The west North Central states dropped to 18 per cent, reflecting, in part, the economic competition with crops especially.

FIGURE 2—SHEEP AND LAMBS PER PERSON, 1950

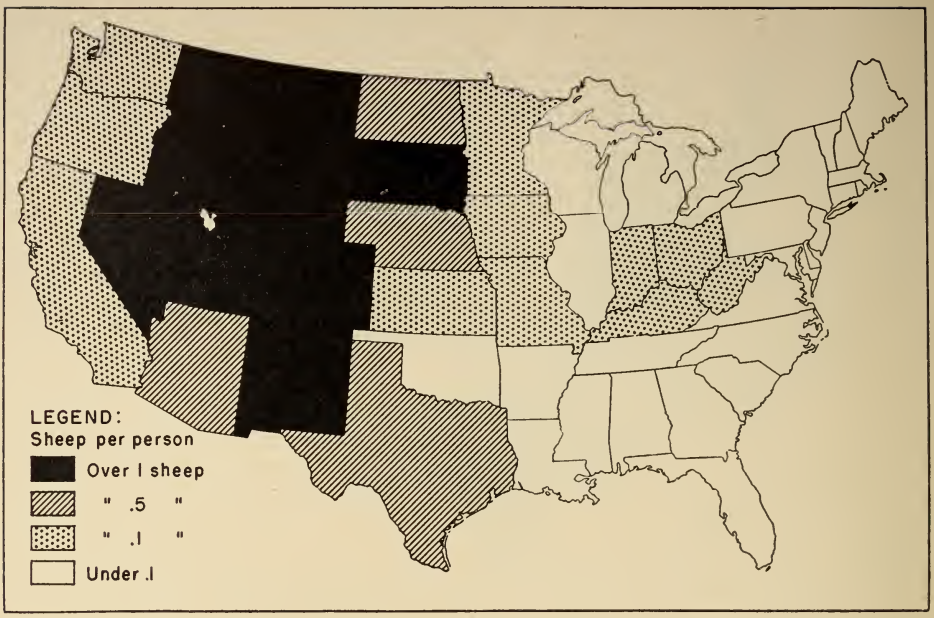


Table 1—All Sheep and Stock Sheep in California and the United States on January 1

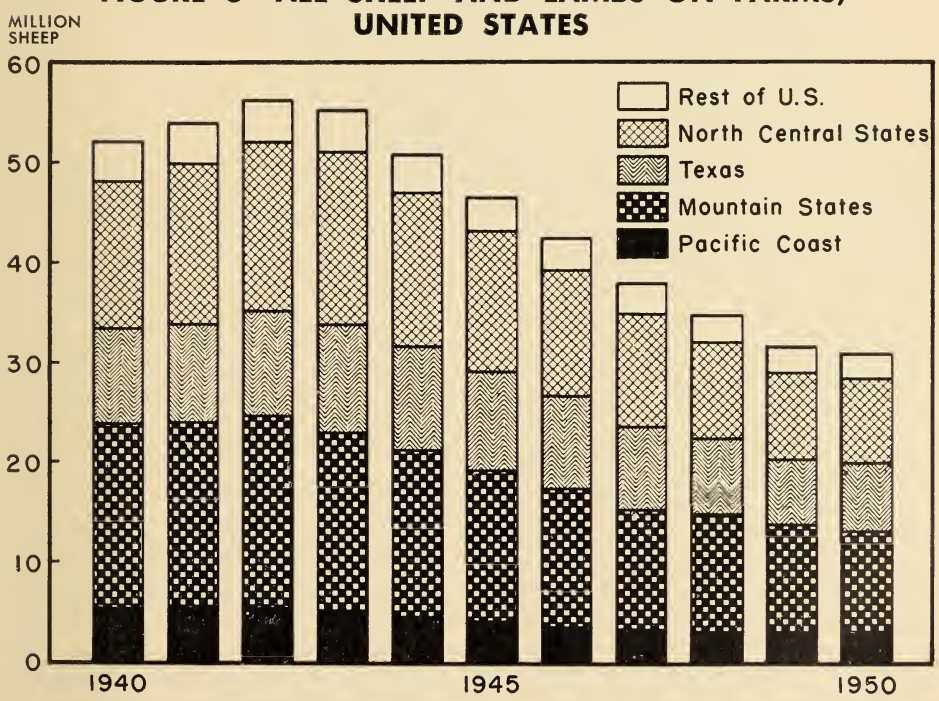
Period	All sheep and lambs		Stock sheep		Relative changes			
					All sheep		Stock sheep	
	California	United States	California	United States	California	United States	California	United States
	Thousands				1935–1939 = 100			
Averages:								
1925–1929	2,952	42,992	2,854	38,485	94	84	94	85
1930–1934	3,097	53,051	3,019	47,305	98	104	100	104
1935–1939	3,150	51,241	3,021	45,452	100	100	100	100
1940–1944	2,977	53,634	2,854	47,104	95	105	94	104
1945–1949	2,168	38,651	1,962	32,992	69	75	65	73
Annual:								
1945	2,587	46,520	2,445	39,609	82	91	81	87
1946	2,298	42,436	2,078	35,599	73	83	69	78
1947	2,117	37,818	1,912	32,125	67	74	63	71
1948	1,977	34,827	1,721	29,976	63	68	57	66
1949	1,850	31,654	1,652	27,651	59	62	55	61
1950	1,769	30,797	1,602	27,064	56	60	53	60

In discussing numbers of any class of livestock or poultry, competing livestock or poultry must be considered if the economic position of the industry is to be understood clearly. During the recent period of decline in sheep, total meat animals reached the highest average (1942–1947) of any period in the country's history. At the same time, the number of all classes of livestock on the farms and ranges was no higher than it had been in the 1916–1921 period. The explanation of this apparent contradiction is that horses and mules have been replaced by tractors. The decrease of between 18 and 19 million animal units "in horses and mules" from 1920–1950 released feed land for use in the production of other livestock and crops.

Livestock and poultry numbers declined for five years from an all-time peak reached on January 1, 1944. In 1949, numbers turned upward so that the January, 1950, totals of meat animals were 17 per cent above the prewar figures, and those of poultry, 18 per cent above.

Trends in California Sheep Numbers.—Along with cattle, sheep formed the basis of California's first commercial agricultural industry. Sheep raising was well established before the state's intensive agricultural development. By 1876, sheep and lamb numbers totaled 7,700,000. With the increase in farms, in variety of crops, and in intensity of agricultural production, sheep numbers dropped to approximately 2 million in 1915. During World War I, there was an increase of almost a half million, followed by a decrease that brought the tally back to the 2-million mark. Almost a million head were added between 1922–1931. This 3-million level had not been reached since before the turn of the century. With minor yearly changes, numbers hovered about the 3-million mark for 11 years. During

FIGURE 3—ALL SHEEP AND LAMBS ON FARMS, UNITED STATES



the national decline of 1942–1950, California slid to below the 2-million mark—1,769,000 being the January 1, 1950, estimate.

With the ebb and flow of numbers have come changes in the relative distribution of the nation's sheep, and these changes alter California's position in the nation's sheep setup. Among the states, California ranked after Texas and Wyoming. Texas, on January 1, 1950, accounted for close to 22 per cent of all sheep and 25 per cent of the stock sheep. California claimed almost 6 per cent of both.

The Central Valley and the North Coast counties had 86 per cent of the state's sheep and lambs in 1945. The state's distribution pattern had changed only slightly during the previous 20 years (fig. 4). The North Coast area gained relatively—chiefly in Humboldt and Mendocino counties. There was a slight relative decline in the Sacramento Valley.

In California, the combined numbers (in animal units) of cattle and sheep raised have remained rather stationary for 30 or 40 years, with no pronounced trend. While there is competition among all classes of livestock as well as between crops and livestock, there is a fairly distinct relationship between beef cattle and sheep. They have competed for certain of the forage and feed areas and there is a tendency for stock sheep to decline as beef cattle increase.

In California's Central Valley, relatively high wartime prices for grains (barley, rice, wheat), cotton, potatoes, flax, and cantaloupe forced sheep out. Relatively lower prices for these crops probably would lead to an increase in the land available for sheep.

There are some areas where cattle definitely should be raised instead of sheep on account of forage type. In parts of Sonoma and Mendocino counties, however, the reverse is true and in both counties it is difficult to substitute one class of stock for the other. Such areas constitute but a small fraction of the total range land, and on improved and irrigated pastures, sheep and cattle can compete almost anywhere.

COMPOSITION OF SHEEP NUMBERS

California has probably passed its low point in sheep numbers. One indication of an upward trend is the number of breeding ewes, which has been increasing slightly since 1949.

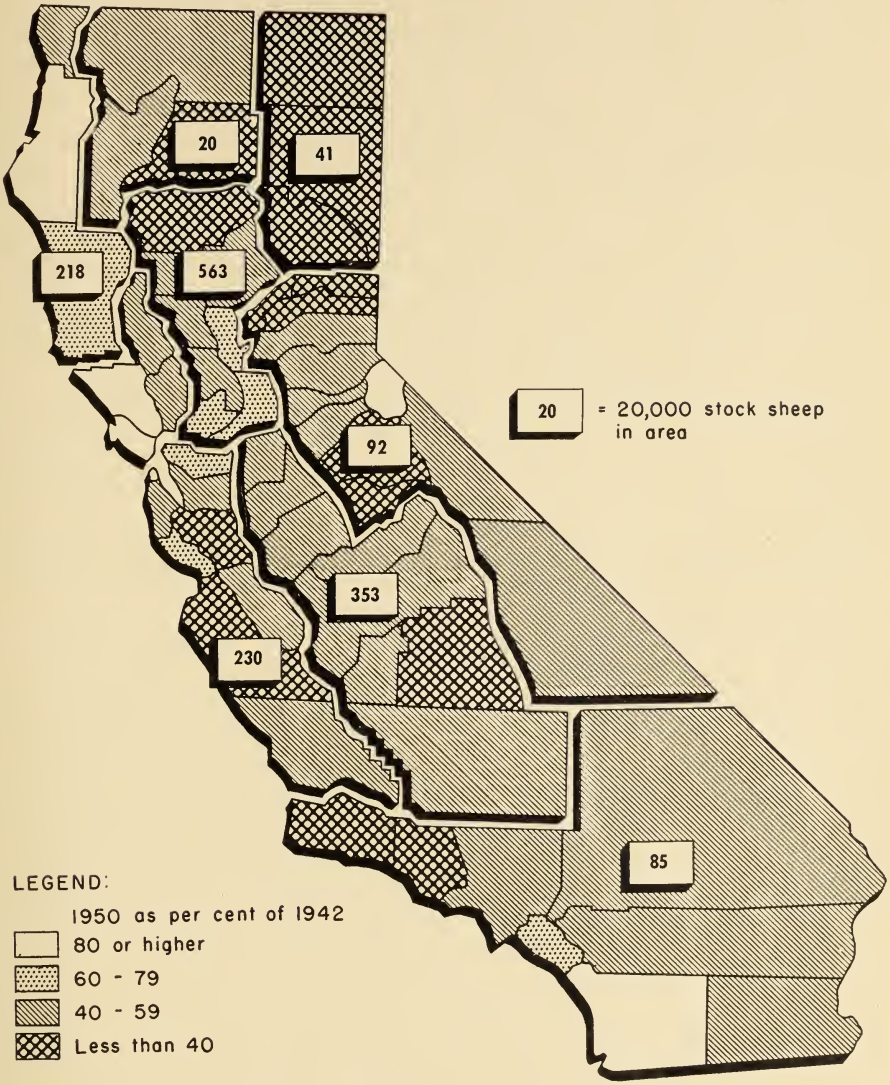
Estimates of sheep numbers on farms and ranges are divided into those for (1) stock sheep and lambs and (2) feeder sheep and lambs.

Stock Sheep.—Stock sheep trends are similar to those for all sheep since, on the average, they constitute about 90 per cent of all sheep in the nation on January 1. During the eight-year period 1942–1950, the nation's stock sheep declined to a point where numbers were the lowest since records have been kept, indicating a heavy liquidation of foundation flocks.

California follows the national trend in stock sheep except that the state's relative numbers, compared with the prewar years, dropped to even lower levels. Declines in numbers, both in the nation and in the state, have been more rapid than those of "all sheep" because of numbers of breeding ewes liquidated (table 1).

A peak in the nation's stock sheep was reached on January 1, 1942. Eight years later, numbers had declined 45 per cent. The California decline was equally drastic —46 per cent (fig. 5). In the North Central states, there was a drop of over 53

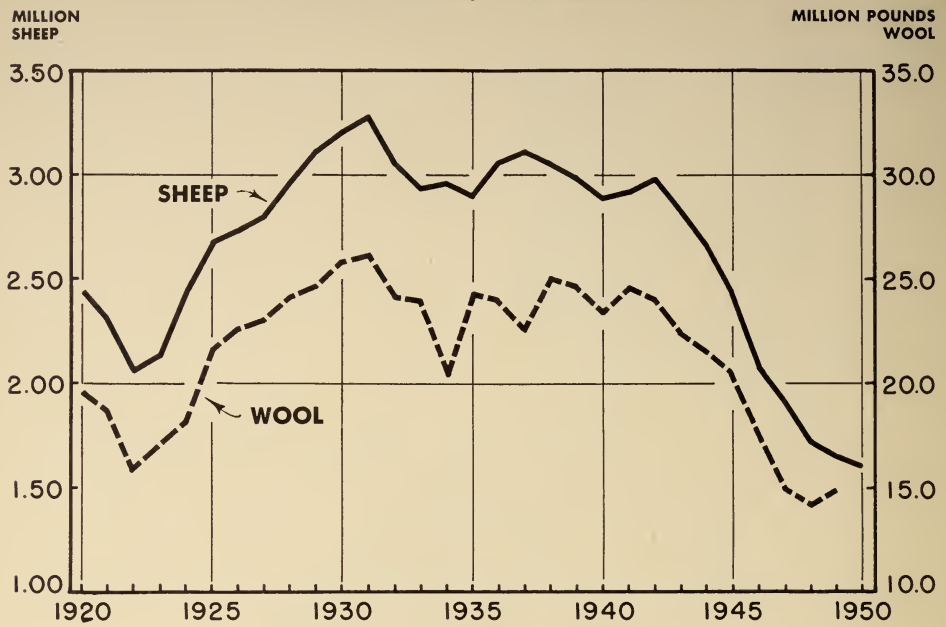
FIGURE 4—STOCK SHEEP IN CALIFORNIA, 1950, AND RELATIVE CHANGE, 1942–1950



per cent. The greater concentrations of farm crops in this latter area were affected not only by relatively larger numbers of other livestock but also by the crop situation as well. In Texas, the peak did not occur until January 1, 1943, and the decline lasted only six years, reaching its low point on January 1, 1949.

Stock sheep are divided into (1) lambs and (2) animals one year old and over.

FIGURE 5—STOCK SHEEP NUMBERS AND SHORN WOOL PRODUCTION, CALIFORNIA



Lambs are further divided into (a) ewes and (b) rams and wethers combined. The older animals are reported as ewes, as rams, and as wethers. There has been a noticeable down trend in wether numbers in the past 25 years. From 1920 to 1934, there were never fewer than 1 million wethers over a year old. An actual and relative decline brought estimates below 350,000 in 1950. Rams and wethers together apparently account for about 8 per cent of the total stock sheep.

From the standpoint of predicting future trends, the numbers of ewes are important. Those over a year old bear a close relationship to the lambs saved, while ewe lambs indicate some trend in breeding flocks. When breeding flocks are decreasing, smaller than normal numbers of ewe lambs are held back, while the reverse occurs when breeding flocks are increasing.

During the 1922–1931 period, when California sheep were increasing, ewe lambs constituted about 20 or 21 per cent of the ewes over a year old. In the drastic 1942–1950 decline, the percentage on January 1 dropped to 14 or 15. It would appear that the decline began to slow up in 1949, and reached a distinct turning point by 1950. Ewe lambs on January 1, 1950, rose to approximately 18 per cent of the older ewes (table 2).

Percentages of ewes over one year and of ewe lambs, in the state's stock sheep totals, were estimated at 81 and 14, respectively, on January 1, 1950. (National figures were 77 and 15 per cent, respectively.) In 1920, the estimated percentages in the state were 68 and 25. A part of the movement toward present percentages occurred during World War I years, when a radical change was taking place in a large number of flocks. Formerly, production resulted in a summer or fall weaned lamb. The change to a lamb dropped in the winter and marketed in the early spring has brought about not only changes in breeding time but also in the flock composition, breed and type used, feeding practices, etc. (see p. 11).

In recent years the number of rams and wethers in the state has been estimated at between 4 and 5 per cent of the flocks, as compared with an estimated 6 or 7 per cent in the early 1930's. Since estimates are made of wethers over a year old, indications are that the decline has been far greater in this group than in the others over the past 20 years. It would seem that in the "wether and ram" lamb classification, wether lambs would show a greater than average decline for the same period.

Sheep and Lambs on Feed.—On January 1, 1950, approximately 3,733,000, or 12.1 per cent, of the nation's sheep and lambs were being fed for market (table 3). Over the past few decades, an increasing relative number have been fed. Additions from the 1920's to the 1930's brought even larger numbers into the feed lots. On January 1, 1943, almost 7,000,000 were reported on feed. This high level continued through 1946. Undoubtedly a considerable part of this increase was the result of price stimulation. Even after a decline in all sheep started in 1942, numbers on feed were high. Animals were held back for feeding and slaughtering rather than for breeding. The decline in breeding sheep soon was reflected in numbers on feed, resulting in the January 1, 1950, figure—the smallest on record.

Feeding is carried on largely in (1) the western states plus North Dakota, Oklahoma, and Texas, and (2) the Corn Belt states. In the first area, over 50 per cent of all sheep were reported on feed in the 1925–1929 period. Before World War II, this figure had dropped to only slightly below 45 per cent, while in the most recent years it has averaged below 38 per cent. Animals on feed in the Corn Belt states have, on the other hand, become relatively more numerous. On January 1,

Table 2—Stock Sheep in California

Period	Lambs		Over one year			Total
	Ewes	Wethers and rams	Ewes	Rams	Wethers	
	Thousands					
Averages:						
1930–1934	370	60	2,484	76	29	3,019
1935–1939	390	48	2,484	76	23	3,021
1940–1944	340	53	2,369	72	21	2,854
1945–1949	252	37	1,613	51	8	1,962
Annual:						
1940	292	49	2,452	74	23	2,890
1941	369	50	2,403	74	23	2,919
1942	380	49	2,451	74	23	2,977
1943	335	46	2,353	71	23	2,828
1944	322	70	2,188	65	13	2,658
1945	296	56	2,021	60	12	2,445
1946	278	39	1,698	54	9	2,078
1947	254	36	1,562	52	8	1,912
1948	211	29	1,428	47	6	1,721
1949	221	25	1,357	44	5	1,652
1950	231	20	1,303	43	5	1,602

1925–1929, the Corn Belt average number on feed was slightly over 2.3 million as compared with 2.4 in the western area. The averages for the January 1, 1945–1949 period in the two areas were 3.5 and 2.1 million, respectively. The relatively small January 1, 1950, total was divided as follows: 2.4 million in the Corn Belt, 1.3 million in the West.

Colorado and Nebraska have usually ranked first and second although in some years (1945–1947) Kansas, with her wheat stubble fields, has been in first place.

If the seven western states—California, Oregon, Washington, Nevada, Idaho, Utah, and Arizona—are considered as a whole, indications are that feeding operations have increased relatively over the past 25 years. North Dakota, Oklahoma, and Texas have, on the other hand, done relatively less feeding.

California attaches more importance to feeding operations (table 3). Pasture and sheep conditions, feed supplies, profits, and general economic conditions are a few of the many factors which affect sheep (and cattle) on feed. The bulk of the sheep feeding has been done in the Delta, the Sacramento Valley, and the Oakdale area—in central and northern California—and in the Imperial Valley in southern California.

Although the state's sheep-feeding operations have been relatively less important than the nation's, they have tended to increase since the early 1930's. Much of this increase has resulted from the use of irrigated pastures. This may be one of the reasons for reduced shipments of lambs eastward from the early lamb districts. There is lively competition between cattle and sheep for irrigated pastures. This was illustrated in 1949 when Ladino clover growers—on account of high spring lamb prices—turned from lambs to cattle to utilize the feed. There is also competition for feed between dairy cattle and poultry, with the state unable to meet all the demand for coarse grains. The use of various agricultural by-products, such as sugar beets, and the development of irrigated pastures are two methods by which some increased feeding might be carried on.

Table 3—Sheep on Feed on January 1

Period	United States	California	United States	California
	Thousands of sheep		Per cent of total	
Averages:				
1925–1929	4,507	98	10.5	3.3
1930–1934	5,746	78	10.8	2.5
1935–1939	5,789	129	11.3	4.1
1940–1944	6,530	123	12.2	4.1
1945–1949	5,687	204	14.7	7.6
Annual:				
1945	6,911	142	14.9	5.5
1946	6,837	220	16.1	9.6
1947	5,693	205	15.1	9.7
1948	4,851	256	13.9	12.9
1949	4,003	198	12.6	10.7
1950	3,733	167	12.1	9.4

Three types of feeding have been used for California's winter lambs in recent years: (1) late fall and early winter feeding (a) on beet tops and (b) in feed lots; (2) winter feeding on Ladino clover and birdsfoot trefoil; (3) feeding on green alfalfa pastures. The latter type of feeding is prevalent in the Imperial Valley where lambs are marketed from December through March.

PRODUCERS AND SIZE OF OPERATIONS

In California, there are probably fewer sheep per farm than there were in 1945. In the sheep-raising areas of the state, the north coast section has changed the least, both in sheep per farm and in total numbers of stock sheep.

Number of Producers.—From 1900 to 1940, between 9 and 10 per cent of all farmers and ranchers in the United States reported keeping sheep or lambs. There was a change during the World War II years. In 1945 there were 128,000 fewer farmers and ranchers reporting sheep than there were in 1940—a drop from 9.6 per cent to 7.8. While data are not available since 1945, it is highly probable that the number has declined further.

Between 5 and 6 per cent of all farmers and ranchers in California have reported sheep, and the state does not reflect the marked change apparent in the country as a whole—at least not in the census of 1945. There were changes within areas of the state over the 20 years ending in 1925. For example, relatively more farms and ranches in the north and central coast areas reported sheep, while the Sacramento Valley showed a slight downward trend.

Numbers per Farm or Operation. Except for the war years, there has not been any pronounced trend in the number of sheep per farm reporting sheep. In 1945, however, the national average for farms reporting sheep was 90—an increase of 14 over the 1935 figures. Such comparisons are not very meaningful unless the country is divided into its major areas. Under such a division, the mountain states reported 456 sheep per farm in 1945. The west South Central and Pacific Coast states followed with 234 and 210, respectively. The west North Central averaged 53, the east South Central, 38, the New England states, only 14.

In making comparisons it is customary to divide the country into the range and native sheep states. The thirteen range states, including Texas, have approximately two thirds of the nation's sheep. Here the enterprise is more often large and specialized. Although these states reported less than 21 per cent of the farms keeping sheep, in 1945, they accounted for over 66 per cent of the sheep and lambs reported. The average number of sheep and lambs on these farms and ranches was 291.

In the range states, use of arid and semiarid public grazing lands especially, and of land in the national forests, is of concern to the sheepman as well as to the general public. Aridity, elevation, and extreme variations in rainfall are underlying reasons why most of the public land of the nation is in the West. The major part of this land is used in connection with farms or with ranching units which have valley or irrigated farms that supply a considerable part of the winter feed.

Exact comparisons of numbers of stock grazed in the different years are difficult to evaluate since weather, feed, and other factors make for varying lengths of grazing periods and varying degrees of support for stock.

In the range states, since 1940, sheep numbers in the grazing districts and in the national forests apparently have de-

clined. Cattle have become more numerous because of a change in the economic relationships between the two classes of stock. Many migrant sheepmen have been eliminated because they did not have sufficient compensatory landholdings and were forced out of business. Certain labor difficulties have undoubtedly influenced sheep numbers. There has been competition between stock and game animals. With the increase in the human population, especially in parts of the West, there has been, and will continue to be, competition for the use of many areas for grazing, recreation, and the like.

In the native states (east of the Rockies), the sheep are generally kept in small farm flocks and are a somewhat incidental enterprise in the general farm organization. They use rough pastures and hillsides and require attention mainly in the winter months. Farmers in these areas reported that they kept an average of 38 sheep.

With the many specialized sheep enterprises in the state, it would be expected that the number of sheep per farm reporting sheep would be high in California. The average in 1945 was 309 as compared with 330 in 1935. Other evidence would indicate that since 1945 there have been fewer sheep on the farms reporting. Comparisons for past years are extremely difficult to make because of the differences in the census dates. In all probability there has been little decline in the north coast section, while evidence points to an increase in numbers per farm in the San Joaquin Valley. The Sacramento Valley, central coast, southern California, and the mountain area have shown declines.

The Sacramento and San Joaquin valleys reported approximately 464 sheep per farm reporting on January 1, 1945. The north coast section followed with 295, while southern California, the mountain, and the central coast areas had 263, 163, and 150, respectively.

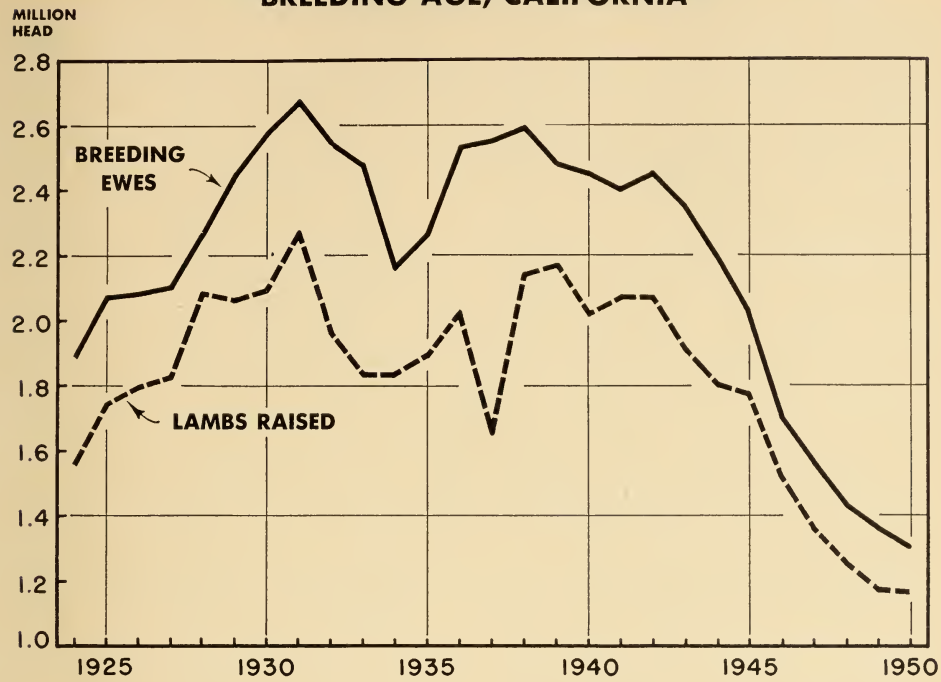
THE LAMB CROP

California's production and management program has changed greatly since the 1920's, thus affecting the over-all market picture and, in turn, producers' prices.

United States Lamb Crops.—In the 26 years for which estimates are available, the country's lamb crop has varied from 32,610,000 (1941) to fewer than 19,000,000 (1949 and 1950). The 1950 crop was the smallest of record. Lamb crops follow the trends of stock sheep numbers. Slightly fewer than two thirds of the lambs are produced in the eleven western states, Texas, and South Dakota. The remainder are produced in the native sheep states. This latter, eastern section of the country, produces a larger proportion of lambs than would be indicated by its stock sheep numbers. The main reason for this difference is the saving of a larger number of lambs per ewe. In the native sheep states, since 1924, an average of 99 lambs have been saved per 100 ewes, as compared with 80 for the western sheep states, and 86 for the United States.

California Lamb Crops.—Estimates of California lambs produced indicate that a steady upward trend which began in the 1920's reached a peak of 2,272,000 in 1931 (fig. 6). This large crop at the very beginning of the depression helped to send sheep numbers down in 1932 and 1933. Except for 1937, crops averaged above the 2-million mark for the 15 years 1928–1943. The effects of reduced stock numbers began to show rather clearly beginning in 1943. The estimated 1949 lamb crop was only 56 per cent of what it had been in 1942 and 51 per cent of what had been estimated for the peak year of 1931. The estimated 1950 crop is only 1 per cent below that of 1949, in-

FIGURE 6—LAMBS RAISED AND TOTAL NUMBER OF EWES OF BREEDING AGE, CALIFORNIA



dicating a turning point in the size of the crop.

Breeding ewe numbers usually indicate the size of lamb crops even though there have been exceptions, as in 1937. Although the number of breeding ewes on January 1, 1937, was approximately the same as it had been a year before, the 1937 lamb crop was 18 per cent less. The causes of the low crop were an adverse early-season feed situation, and unusually heavy storms.

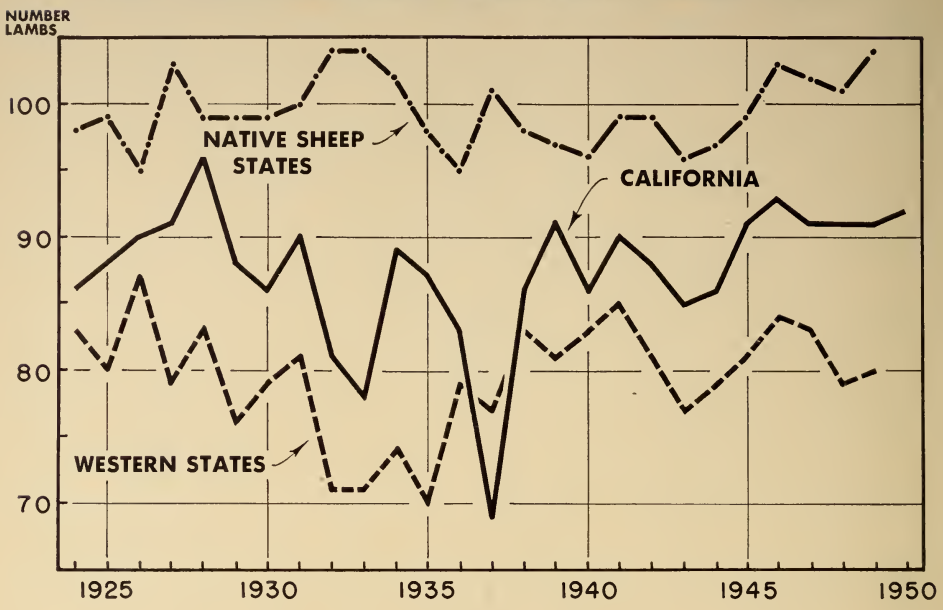
Figure 6 shows that in certain years there is a tendency for relatively more lambs to be raised in proportion to the number of breeding ewes. This is particularly noticeable since the beginning of World War II. Some of this improvement was brought about by high prices and the war conditions.

Percentage Lamb Crop.—There are two methods of reporting the "percentage lamb crop" or the number of lambs per hundred ewes: (1) the "percentage" or the "number saved" and (2) the "percentage" or the "number raised." The first method is the one generally used, and represents the ratio between the number docked or marked and the breeding ewes one year old or over on the previous January 1. The "percentage raised" takes into account the death losses of lambs and hence is smaller for any given year than the "percentage saved."

The average of lambs saved in California for the 27 years beginning with 1924 is estimated at 88 per cent, of lambs raised, at about 84. In the eleven years, 1940–1950, the percentages were 91 and 86, respectively.

For the entire country, the percentage saved since 1940 has been 87 (compared with 90 for California). For some of the farm flocks in the Mississippi Valley the percentage saved is usually above 100 and it has been as high as 125 (Kentucky, 1932). Some experts in sheep husbandry management set up a goal of 125 to 150

FIGURE 7—LAMBS SAVED PER 100 EWES OF BREEDING AGE, CALIFORNIA, WESTERN, AND NATIVE SHEEP STATES



lambs per 100 ewes as being attainable in small farm flocks.

California ranks higher than the combined western states in the percentage of lambs saved (fig. 7). This is partially the result of the somewhat milder physical conditions in most sections of California as compared with the western states as a whole. Comparative estimates of death losses between sheep and lambs indicate that the older animals have shown by far the greater losses. In 1948 and 1949, of the total number of deaths in the country, sheep represented 60 and 61 per cent, respectively, while in California the percentages were 78 and 77.

It is not possible to analyze, from the data available, the influence of individual factors on productivity. Even if more inclusive data were available, the results would be different in succeeding years. It seems logical to assume that economic conditions, as well as physical factors, have influenced the productivity per animal.

The percentage lamb crop could be increased by use of the proper types of ewes and rams, special attention to the diet of ewes during the breeding season, improved feed and care at lambing time, and disease-control measures.

Changes in Production Period.— One of the most far-reaching changes in the California industry—from both the economic and management standpoints—has been that from summer- and fall-marketed lambs to spring-marketed lambs in the interior valleys. Before World War I, ewes were bred to lamb in February and March. The lambing period in the interior valleys and lower elevations has been changed to October, November, December, and January. This change took place rapidly in the 1920's. New pasturage ordinarily becomes available during the winter months, resulting from fall and winter rainfall and a comparatively mild climate.

Estimates of the number of lambs marketed in the first nine months of each

year have shown an appreciable change in the quarter century since data were first obtained. From 1924 through 1931, growers estimated that an average 65 to 68 per cent of their lambs were in this class. This increased to about 79 per cent for the five years beginning in 1937, while the 1946–1950 estimate went to 85 per cent. The 1948 estimate of 86 per cent was the highest on record.

Earliest lambs originate in the San Joaquin Valley, where pronounced changes in methods of handling have recently been made. With these changes have come economic and managerial problems. Until very recently, lambs were born out on green alfalfa and then went to the natural grass areas on the west side of the valley to be finished in March, April, and May. Drought, and the use of these west-side ranges for crops, have forced the sheepmen to arrange with alfalfa farmers to keep the sheep on the green alfalfa from the time lambing starts in October or November until the lambs are marketed in February, March, and April. This practice has found acceptance. Losses apparently are not so severe as had been anticipated, and exceptionally fat lambs with weights up to 100 pounds—heavier than formerly—are the result. The difficulty with this practice has been twofold—the bargaining for the alfalfa and the necessity of getting the sheep off the pastures early enough so that the farmer will not lose his usual number of alfalfa cuttings. The critical period apparently has been the two to four weeks of the late winter or the early spring when the sheepman wishes to finish his lambs and the farmer wishes to get the sheep off in time to start the new crop of alfalfa.

The Sacramento Valley lambs appear next, and these are followed by the lambs from the mountain and coast counties. The production period, not only in California but elsewhere in competing areas, plays a vital role in determining lamb numbers on the market at any given time. This situation in turn affects producers' prices. At times in the past the fed lambs from other areas have competed with the first of the California lambs. One of the best illustrations of the effect of production period on the market occurred in the summer months of 1949. Lambs from the mountain and coast counties were being marketed from late June through July and August. When these lambs arrived on the market, others from southern Oregon and Idaho arrived at the same time. As a result, there was a severe break in the market. This situation was made worse by the appearance of early Kentucky lambs on the market which handicapped the moving of both Idaho and California lambs eastward.

MOVEMENTS OF SHEEP AND LAMBS

California's steadily increasing population has caused us to ship in more sheep for slaughter, stock, and feeding. These in-shipments have come from increasingly distant areas.

Sheep and Lamb Marketings.— Although the changes in flock age groups occurred before World War I, the relationships between these groups are not static (pp. 7–10). The Bureau of Agricultural Economics estimated that in 1935–1939, lambs constituted 84 per cent of the animals marketed in the country. In the inventory decline from 1942 to 1950, this percentage fell while that of sheep rose, indicating a drastic reduction in breeding animals. In the five years 1944–1948, the percentage of lambs marketed by producers dropped to 77. A recent rise (1950 = 83 per cent) shows that curtailment has become less drastic.

In California, the proportion of lambs marketed is considerably higher than that in the nation. About 90 per cent of the marketings in the 1935–1939 period were lambs. Even in the recent downward inventory trend, the lamb percentage dropped only to an estimated 87. In 1949 the estimated percentage reached 91.

Although comprehensive data on the channels through which sheep and lambs move are lacking, there is sufficient material to show a pronounced contrast between the nation and the state. The principal channel used in the nation is the terminal public market. Other channels are direct shipping to packing plants, sales to dealers, livestock auctions, and marketing and shipping associations. Changes have been occurring in the volume routed through these channels over the past 20 years. Evidence points to a decline in the relative importance of the terminal public market. In the 1925–1929 period, about 87 per cent of the sheep and lambs slaughtered under federal inspection originated in public markets. By 1935–1939, this had dropped to about 70 per cent, and in the three postwar years, 1946–1948, to approximately 60 per cent. Apparently, in the interwar period, public markets declined in importance as a source of supply for feeders, but during the war, especially in the Corn Belt, there was a reversal of this trend.

In California, most sales are made directly from sheepmen to packers, country buyers, and feeders. Public markets handling sheep are located at South San Francisco, Stockton, and Los Angeles. Total receipts of sheep and lambs at these three markets in 1949 were 546,154 head (1948 = 593,420). Salable receipts constituted approximately 62 per cent of the total (1947 and 1948 = 55 per cent each). These data show that public markets account for a minor part of the estimated total marketings in the state (p. 25). Of the total 1949 receipts, about 52 per cent (1948 = 57 per cent) were slaughtered at plants adjacent to the markets, around 13 per cent (1948 = 10 per cent) were shipped as stockers and feeders, while other shipments out of the yards accounted for 35 per cent (1948 = 33 per cent). Changes have occurred in the disposition of the sheep and lambs received at these same public markets between 1938 and 1948. In 1939, total receipts at the three yards were 443,066 head (1938 = 522,390). Local slaughter adjacent to the plants accounted for 64 per cent (1938 = 69 per cent), while stockers and feeders shipped out amounted to 6 per cent (1938 = 1 per cent). Other shipments in 1939 totaled 29 per cent (1938 = 29 per cent). These figures show, in part, the changes that have taken place in the management phases of the industry (p. 16). Investigations under way in California indicate that only a very small number of sheep are moved through the livestock auction yards as distinguished from the terminal markets. There are one or two auction yards (out of a total of 78 nonposted yards) that handle relatively large numbers of sheep.

It is difficult to tell the relative importance of individual public markets because they differ in function. Some are for slaughter animals, some for stockers and feeders. Data on receipts and shipments for all the markets in the western states show that through the past 20 years there has been a tendency to market a larger percentage within the western area. This, plus the increase in total western slaughter, indicates a change in the channels western sheep and lambs are taking from the producer to the ultimate consumer.

Increased western demand, especially that from California, apparently will continue to turn an increasing amount of the finished product westward. However, this does not necessarily mean greatly increased absolute slaughter in California, although such has been the trend.

The California Crop and Livestock Reporting Service has suggested that marketings or "disposals" be calculated

Table 4—Sheep and Lambs Shipped into California

Period	All sheep and lambs	Stockers and feeders	Slaughter sheep and lambs
	Thousands		
Averages:			
1925–1929	700	226	473
1930–1934	1,306	278	1,027
1935–1939	1,443	436	1,007
1940–1944	1,408	444	964
1945–1949	1,370	506	864
Annual:			
1945	1,538	447	1,091
1946	1,653	563	1,090
1947	1,263	462	801
1948	1,258	557	701
1949	1,139	503	636

by adding out-shipments to numbers slaughtered, and deducting in-shipments for immediate slaughter. These derived marketings would include some animals brought into the state as feeders and then sold after being fattened. It is believed that the resulting error is not large. Since 1924, the estimated marketings have varied from 2,229,000 head in 1937 to 1,458,000 in 1949. A rather definite seasonal pattern has been established. Normally the heaviest marketings—approximately one fifth of the year's total—occur in May. Afterwards a decline usually sets in which continues to the following January or February. Then comes a pronounced upward turn that culminates in the peak month. A concentration in April, May, and June is the result of marketing the early lambs from the interior valleys. During the periods before and after this concentration there are a few early lambs, and later crops from the north coast and mountain areas, together with some fed lambs out of pastures and feed lots.

Shipments of All Sheep into California.—Movements of breeding stock between different areas of the country are relatively small. Most movement is that of stockers and feeders and animals destined for slaughter. The movements of sheep and lambs or their products occur on a large scale because of the location of the nation's human population, the distribution of sheep, the location of feeding areas, and the regions of high per-capita lamb consumption. The California sheep industry cannot be isolated from the nation's, and this is shown by the in- and out-shipments over the state's borders.

California in-shipments usually fall into three rather distinct groups. The largest number are intended for immediate slaughter. A second group is mainly ewes and ewe lambs brought in as replacement stock for maintaining breeding flocks. A third group consists of feeder lambs and some dry ewes to be fattened for slaughter. The second and third groups are merged in the data reported, since it would be impossible to separate them.

From the early 1920's until 1935, in-shipments increased rapidly (table 4). They were maintained at a high average level until 1947 when the decreasing flocks over the country began to affect

the movement. The in-state movement is highly seasonal, the result of pasture conditions, feed supplies, the demand for slaughter animals, and so forth. May, the time of heavy state lamb marketings, has but few in-shipments. In June they begin to rise, and reach a peak by September or October. A decline usually sets in by November which is accelerated in December. Often a slight rise is registered in January, depending on feed conditions. The first three months of the year show a fairly even level of in-shipments. A drop follows which reaches its low point in May.

Four of the western states—Idaho, Utah, Oregon, and Nevada—furnish the largest numbers of in-shipments. An increasingly greater number have originated in more distant areas. In the five years, 1925–1929, less than 6 per cent of all incoming animals were brought from areas east of the six most westerly states (other than California)—Washington, Oregon, Idaho, Nevada, Utah, and Arizona. In the 1945–1949 period this rose to an average of over 16 per cent—another indication of what has happened to needed livestock supplies for California's increased population. As the additional supplies are drawn from the more distant areas, there is increased competition between "western" and "eastern" agencies (including farmers). In Montana, Wyoming, Colorado, and New Mexico, the flow has been and still is predominantly eastward.

In-shipments of Slaughter Animals.—During the eight years, 1925–1932, there was a rapid acceleration of in-shipments for slaughter purposes (fig. 8). From 1930 through 1946, these fell below the 900,000 mark in only two years—1939 and 1940. In 1947, the number dropped to 801,000 and in 1949, to 636,000—the smallest since 1928.

Increased numbers of slaughter sheep have been coming in from distant areas. In the five years, 1928–1932, only about 5 per cent of the animals shipped in for immediate slaughter originated east of the seven far western states. In the five-year period ending in 1949, this figure increased to approximately 10 per cent.

The seasonal pattern is fairly regular, more so than that for stockers and feeders. Because local spring lambs are available for slaughter in April and May, in-shipments during those two months are negligible. By June, a steady increase begins, and continues month by month, reaching its peak in January. February and March then show a decided decline.

While all of the western states have contributed to this movement, Idaho, Utah, Oregon, and Nevada, in the order named, have furnished the bulk of these shipments.

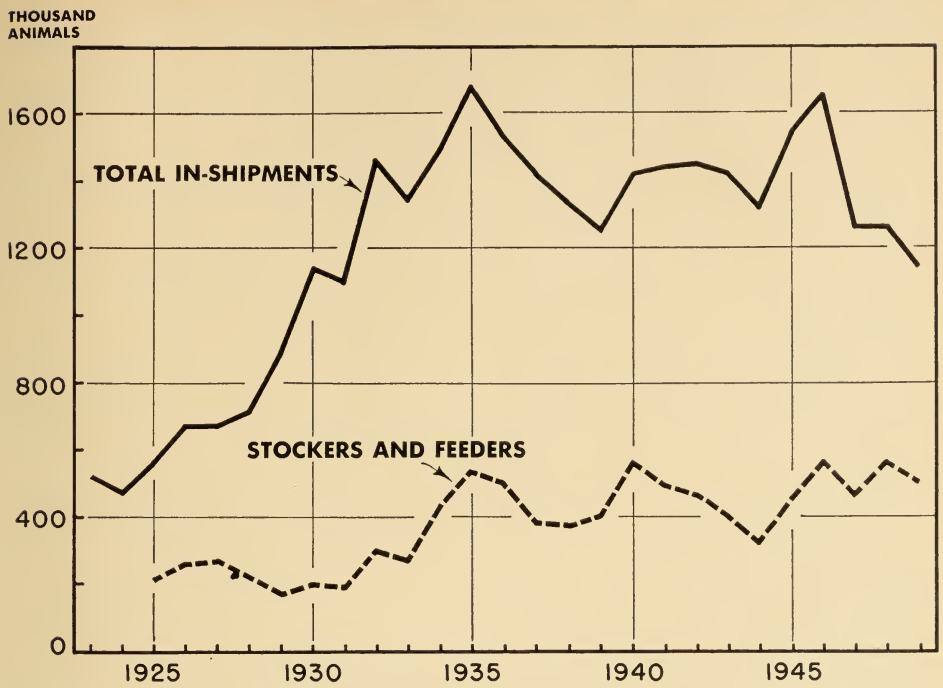
Stocker and Feeder Sheep In-shipments.—Between 1925–1929 and 1935–1939, in-shipments of stockers and feeders almost doubled—from 226,000 to 436,000.

There was a slight recession during the five years before World War II. Little change, on the average, took place in the five years beginning with 1942, although 1946 broke all records with 563,000. The 1947 estimates dropped by about 100,000, while 1948 numbers were close to the 1946 level. The 1949 estimate was approximately one-half million. Stocker and feeder in-shipments are especially affected by pasture and other feed situations and by economic factors. Figure 8 shows the increasingly important role of stockers and feeders in the California sheep industry.

Most sheepmen must bring in replacement stock since they market crossbred early lambs. It is reasonable to suppose, therefore, that at least a half of the total "stocker and feeder shipments" were breeding animals.

Stocker and feeder in-shipments are seasonal. They are highest in the August–November period, with September and October alone usually accounting for at least 50 per cent of the annual total. Oregon, Nevada, and Utah have been the

FIGURE 8—SHEEP AND LAMBS SHIPPED INTO CALIFORNIA

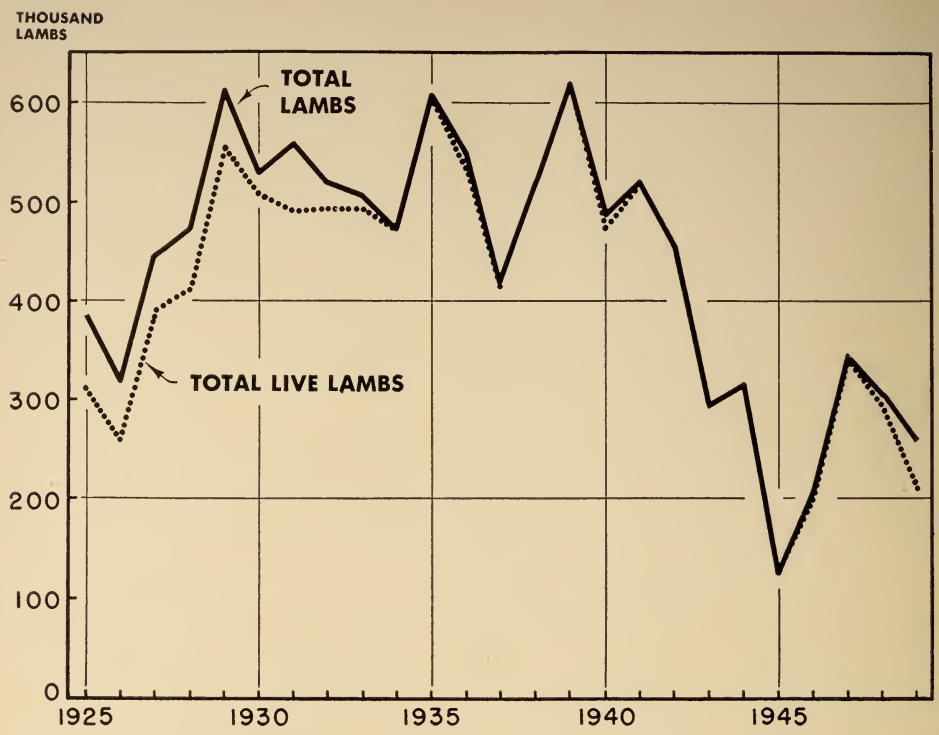


main contributors although in some years, Arizona, Idaho, New Mexico, Texas, and Wyoming have added substantial numbers. There have been many changes in the origin of stockers and feeders sent into the state. In the five years, 1928–1932, about 80 per cent of the stockers and feeders came from Oregon, Nevada, and Arizona while in the five years ending in 1949, less than 40 per cent came from those states.

Shipments Out of California.— Most out-of-state shipments are slaughter animals, but in some years, there have been sizable shipments of stocker and feeder animals to other states because of adverse feed and pasture conditions. Estimates on out-shipments of feeder lambs in the period 1945–1949 have ranged from approximately 4,000, in 1945, to 38,000 in 1947. In addition, a portion of the lambs shipped out may, in "normal" years, be fed further before being slaughtered.

The highly seasonal California lamb production has made for out- as well as in-shipments. Although there are more sheep and lambs slaughtered in the state than are produced here, a concentration in spring lamb enterprises has made it imperative, in the past, that lambs be shipped eastward—especially during April and May. This is a practice of long standing. The first rail shipment (54 cars) of lambs to eastern points was made in 1898. From 1919 to 1929, there was a decided upward trend in early lamb shipments (fig. 9). A slight decline then set in, but the average (omitting 1937) hovered about the half-million mark through 1941. Numbers began to drop in 1942, and by 1946 they were less than a half of what they had been in the ten years ending in 1941. Some of this decline resulted from regulations imposed during the war years when, it is believed, an unfavorable price structure arose between the production areas of the West and large con-

FIGURE 9—LAMB SHIPMENTS OUT OF CALIFORNIA



suming sections of the East. Shipments in 1945 were probably the smallest on record. Undoubtedly the maintenance of the California lamb price structure for the first six months of 1949 was due to the out-shipments of lambs and ewes eastward for immediate slaughter or further feeding.

Over the past 25 years, both live and dressed animals have been shipped (table 5). Live animals have constituted the bulk of the out-shipments although in the 10 years beginning with 1924, a sizable number of dressed carcasses were sent out. The large volume of dressed shipments in 1924 was the result of a foot-and-mouth disease outbreak in the state.

Future relationships between live and dressed shipments in and out of the state are uncertain. There is a wide difference between eastbound and westbound rates for dressed meat. In 1949, carload rates from either Denver or Omaha to San Francisco were over twice those for shipments in the opposite direction.

Estimates indicate that usually 75 to almost 100 per cent of all live lamb out-shipments have been made from March through June, with the greatest concentration in April and May (fig. 10). The postwar drop in early live lamb shipments has been far greater than that of total out-shipments. Variations occur from year to year, influenced not only by economic conditions but also by weather. In recent years, increasing numbers of lambs not ready for market have been held and fattened on irrigated pasture. A larger percentage of these early lambs is consumed in California, hence there is not the pressure to ship them out. But this does not mean that lambs should not be marketed promptly when they are ready for slaughter.

SHEEP AND LAMB SLAUGHTER

California ranks first in the United States in numbers of sheep and lambs slaughtered. Increased population plus high per-capita consumption have built up a big local market.

United States Slaughter.—Statistics on the slaughter of sheep and lambs are usually classified as "federally inspected," "commercial slaughter not federally inspected," and "farm slaughter." The total of these classes, like that of other farm animals, varies yearly. Certain slaughter trends are important to the sheepman. There was a continuous rise from an estimated total of 15,430,000 head, in 1925, to a peak of 23,138,000 in 1931. For ten years—through 1941—total slaughter fluctuated within a relatively narrow range—a low of 20,440,000 in 1934, a high of 22,423,000 in 1938. With the outbreak of World War II, slaughter grew rapidly and the upward turn continued until a peak of 27,073,000 was hit in 1943. A drastic decline set in which continued through 1949 when numbers slaughtered were only 51 per cent of the total for 1943.

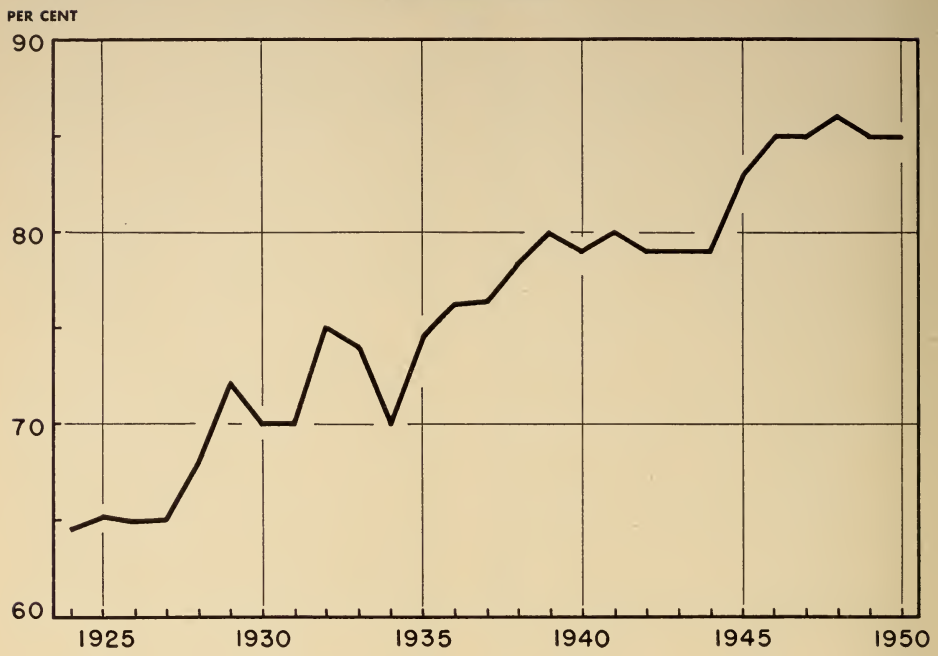
Farm Slaughter.—The nature and concentration of sheep and lamb production is such that in the past few years, only about 3 per cent of the country's total slaughter has been on farms. Probably 60 per cent of the nation's farm slaughter can be credited to the mountain states. In California, farm slaughter is even more insignificant—perhaps 1 per cent (or less) of the state's total.

Commercial Slaughter.—Approximately 90 per cent of sheep and lamb slaughter is under federal inspection. This is higher than with other meat animals. Since the major part of lamb and mutton is consumed in areas far from production centers, the dressed product is moved from one section to another, thus requiring federal inspection. In California, practically all slaughter is done under inspection—either federal, state, or local.

Table 5—Live and Dressed Lamb Shipments Out of California

Period	Live lambs	Dressed lambs	Live lambs March–June	Total live and dressed lambs
	Thousands			
Averages:				
1925–1929	385	62	365	447
1930–1934	491	26	468	517
1935–1939	538	5	512	543
1940–1944	411	3	368	414
1945–1949	235	13	132	248
Annual:				
1945	126	0	106	126
1946	200	8	119	208
1947	341	1	204	342
1948	296	9	104	305
1949	212	26	119	238

FIGURE 10—PERCENTAGE OF TOTAL LAMBS RAISED AND MARKETED AS EARLY AND INTERMEDIATE LAMBS, CALIFORNIA



The bulk of the inspected slaughter is classed as "lambs and yearlings." From 1926 through 1941, this group accounted for from 91 to 96 per cent of all such slaughter—the remainder being "sheep." Beginning in 1942, there was a noticeable drop in this percentage, indicating that a large number of breeding ewes were being sent to market (see page 10). Lamb and yearling percentages from 1942 through 1948 ranged from 79 to 87.

Slaughter in California.—Increased flocks and production expanded slaughter rapidly in the second half of the 1920's, with a total of 1,737,000 animals reported. This rose to an average of 2,403,000 in 1930–1934. After a more or less stationary period, an upward trend began with the war. From 1941 to 1945, some 600,000 additional animals were killed. In 1945, the total passed the 3-million mark—the high point being reached later than that in the nation (fig. 11). The inventory decline, which had started before the record slaughter, brought the kill down rapidly, 1949 totals being only 61 per cent of those in 1945. This percentage was higher than that registered in inventories because, throughout the decline, breeding animals were being sacrificed. This held slaughter to relatively higher levels. If flocks are built up, slaughter for a few years will most likely grow more slowly than inventories, as ewe lambs will be held back.

Estimates of the California Crop and Livestock Reporting Service indicate that approximately 90 per cent of the slaughter during the eight years before the war consisted of lambs and yearlings, and 10 per cent of sheep. Considerable variation occurred—in 1937 the proportion of sheep was 13.2 per cent, as compared with 6.5 in 1936.

In the ten years ending in 1934, it is estimated that between 10.5 and 11 per

cent of all the nation's sheep and lamb slaughter took place in California (table 6). For the following five years this percentage increased to 11.3. With the coming of the war there was a drop, but in the five years ending in 1949 there was a further expansion to about 13 per cent.

Slaughter under federal inspection in California has increased far more rapidly. In 1938, only 5.1 per cent of the total sheep and lamb slaughter was under federal inspection on the Pacific Coast (and in Hawaii). By 1946, the increase in number of federally inspected plants plus the western pull had more than tripled the percentage—to 15.4. The remaining western states accounted for 3 and 6 per cent in 1936 and 1946 (1947 = 5 per cent).

Seasonal slaughter follows a fairly distinct pattern. May is normally the peak month, although in some years it has been April. From May (or April) there is a decline which lasts into the following January (or February). The rise usually starts in March and reaches the peak within a few weeks.

Taking into account only lambs of California origin, the largest slaughter is during the four months March–June. However, there is considerable variation during this period through the years.

One advantage of the California lamb industry can be seen by pointing out the prevailing slaughter periods in the nation. The national periods are somewhat uniform throughout the year. In the twenty years 1930–1949, the four months September–December have accounted for the largest volume—31 to 42 per cent of the total. September and October were the heaviest months. May through August accounted for from 30 to 35 per cent, August normally being the heaviest. The first third of the year has accounted for from 26 to 37 per cent—February, March, and April usually being below average.

There are several rather definite trends which indicate that California has become increasingly dependent on other states for additional supplies to satisfy the demands of the state's greatly expanded population. The increase in

FIGURE 11—MARKETINGS AND SLAUGHTER OF SHEEP AND LAMBS, CALIFORNIA

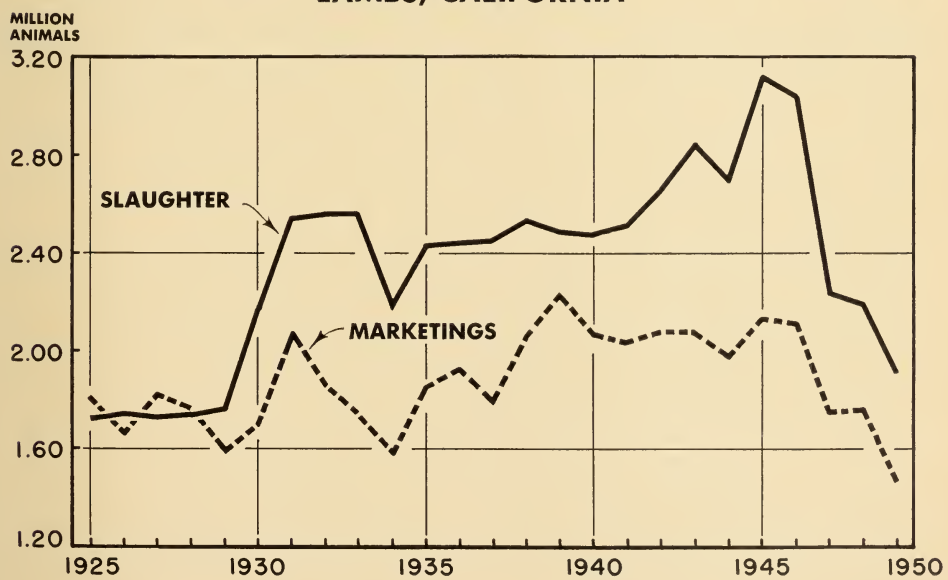


Table 6—Total Estimated Slaughter of Sheep and Lambs, California and the United States

Period	California	United States	California per cent of United States
	Thousands		
Averages:			
1925–1929	1,737	16,509	10.5
1930–1934	2,403	21,924	11.0
1935–1939	2,469	21,809	11.3
1940–1944	2,641	24,379	10.8
1945–1949	2,500	19,447	12.9
Annual:			
1945	3,125	24,639	12.7
1946	3,037	22,814	13.3
1947	2,237	18,766	11.9
1948	2,191	17,530	12.5
1949	1,908	13,758	13.9

slaughter is one indication. In recent years, more animals have been shipped in for immediate slaughter. Although numbers shipped out remained on a high level up to the beginning of the war, they have since declined. From 1942 through 1949, numbers shipped in for stocking and feeding were the highest on record. Comparisons between marketings from farms and the total number slaughtered indicate that the state has had an annual "deficit" in sheep and lambs for several years. However, this deficit is not so great as that of either pork or beef. (The only meat which the state furnishes in sufficient amounts for its demands is turkey.)

There have been increased changes in numbers and weights of lamb and mutton produced in the state in relation to the stock sheep numbers, which means that, in so far as meat is concerned, the state has been producing more lamb from a smaller number of breeding animals. If California's population is to continue to consume lamb at or near the prewar rate, it is evident that additional sources of supply will have to be tapped. Within the state, it appears that sheep will compete, as they have over the last few decades, for use of the nontillable but pasturable lands. One of the main functions of the state's sheep industry is to share, with the beef cattle industry (and with wild life), the forage produced on probably over 60 per cent of the state's land area. From the condition of this forage area, there is no evidence that supplies of sheep and cattle have increased over the past 30 years. It seems reasonable to expect that these forage areas might be improved to encourage some increase. Wartime differentials between the prices of staple crops and lambs, especially in the San Joaquin and Sacramento valleys, caused many to cut down flock numbers. Sheep were, and still are, competing with cotton, rice, beans, barley, etc. Many of these crops are being grown on former sheep range. So long as these crops are more profitable than sheep, the land on which they are grown will remain in crops.

It appears that the largest additions to meet California's lamb consumption needs will have to originate in the other western states where there is a relatively large

number of sheep in proportion to the human population. In these states there will be competition not only between the livestock industries but also increased competition between markets. If California consumers must depend more largely on lamb supplies from the other western states, eastern consumers will probably have to obtain a relatively larger number of lambs from the Midwest and South.

Changes in Lamb Weights.—There has been an upward trend in average weights of the country's sheep and lambs slaughtered in recent years. In 1934–1939, the average liveweight was estimated at 84.9 pounds; ten years later it was 94. Dressed weights in the same two periods were 39.9 and 43.2 pounds, respectively. Dressing yields dropped slightly—from 46.9 to 46 per cent.

It is highly probable that, if similar data were readily available for California, the state would show a similar trend. In the three years 1947–1949, estimates indicate that animals slaughtered in the state were approximately 5 pounds heavier than those slaughtered in the nation. Changes in the management of flocks (irrigated pasture, etc.) have unquestionably helped to bring about this increase. One result of the increase has been a problem at the retail end of the marketing process (in some areas), which has been reflected back to the producer in prices received. Apparently the family trade prefers legs weighing from 5 to 7 pounds, and when legs become much heavier, they are less salable.

The lamb producer is fortunate because a very high percentage of his product grades high. While this is reflected in prices received by producers, it is not possible to reflect these high grades in any single price series. Of the lamb carcasses graded in the United States in 1945, 1946, and 1947, about 48, 48, and 41 per cent, respectively, were classed as "choice" and 35, 36, and 47 per cent, respectively, as "good." The remaining three classes, "commercial," "utility," and "cull," accounted for 17, 17, and 12 per cent, respectively, of the total.

LAMB AND MUTTON CONSUMPTION

While it is true that lamb and mutton make up only a small part of the country's total meat supplies, lamb consumption is high in California, and the state does not meet local demands.

Meat Production and Consumption, United States.—All meats, including poultry, are competitive, and lamb and mutton consumption should be considered with that of all meat. In the interwar period, consumption of all red meats just about balanced production. During the fifteen years 1925–1939, production exceeded consumption by less than 1 per cent. Beginning in 1941, production increased more rapidly than consumption. In the six years 1940–1945, total production exceeded total consumption by one sixth. The excess was exported.

A peak in red meat production was reached in 1944 with some 25 billion pounds. This was the greatest production in history, exceeding by 55 per cent the average for the 1935–1939 period. While there was a decline during the next three years, the average total production of red meat in 1948 and 1949 was still one-third greater (34.3 per cent) than it had been in the prewar period.

Total meat consumption continued to rise after the close of the war so that in 1947 it was greater than in any previous year in history. Between 1945 and 1948, the gap between all meat production and

consumption practically closed so that in 1948 and 1949 they were once more in balance.

While the livestock producer generally realizes that there is competition among beef, veal, pork, and lamb, he sometimes overlooks the competition between those meats and poultry and fish. While the exact relationship between the consumption of lamb and mutton on the one hand, and poultry on the other, cannot be stated, the thoughtful sheep grower realizes that poultry meat has been a growing competitor of lamb. The per-capita consumption of chicken and turkey for the five years 1945–1949 is estimated to have averaged 28.9 pounds, an increase of 39 per cent over the average estimated consumption of 1935–1939 (table 7).

There is often a tendency to regard the per-capita consumption of a food with an exactness that is incorrect. Total consumption is, in itself, an estimate and this is simply divided by the estimated population. The latter includes persons of all ages, nationalities, races, and financial well-being.

Lamb and Mutton Consumption.— The relationship between lamb and mutton production and consumption has been somewhat similar to that shown by all meats, with certain minor differences, especially in most recent years. Foreign trade in lamb and mutton was relatively less important than that in all meats before the outbreak of World War II. The almost exact balance between production and domestic consumption began to disappear in 1941, and by 1943 production was one-third greater. The gap between production and consumption then began to close. By 1947, both were lower than they had been in any year since 1929, and this downward trend continued into 1948 and 1949.

When the liquidation period is ended, meat production (lamb and mutton) will be curtailed in relation to numbers of animals. If numbers are expanded, it will only be by holding back ewes and ewe lambs. From the standpoint of the lamb producer, this will create a favorable supply situation. If the general price level as well as the national income remains high,

Table 7—Per-capita Consumption of Meat and Poultry, United States

Period	Lamb and mutton	All meats	Poultry*	Relative changes		
				Lamb and mutton	All meat	Poultry
	Pounds			1935–1939 = 100		
Averages:						
1925–1929	5.4	134.3	....	79	106	...
1930–1934	6.8	133.4	21.0	100	106	102
1935–1939	6.8	126.2	20.5	100	100	100
1940–1944	6.7	144.7	27.5	99	115	134
Annual:						
1945	7.3	144.4	33.1	107	114	161
1946	6.6	153.4	29.9	97	122	146
1947	5.4	155.0	28.1	79	123	137
1948	5.0	145.4	26.7	74	115	130
1949	4.1	143.9	26.7	60	114	130

* Chicken and turkey.

this means a relatively high level of prices for lambs and sheep.

Lamb and mutton have never been a large part of the total red meat consumed. From 1925 to 1929, they made up only about 4 per cent of the annual total, while from 1930 through 1944, they were never as high as 6 per cent. Consumption in 1948 was only 3.4 per cent of the estimated total, and in 1949 it dropped to 2.8 per cent. Per-capita consumption of lamb and mutton averaged about 6.8 pounds for the fifteen years ending in 1944. It continued at a relatively high level through 1946. By 1948 it had dropped to 5 pounds (the lowest in half a century) while in 1949 it was almost a pound lower—4.1. Per-capita consumption of other meats held to relatively higher levels in the four years ending in 1949.

Regional Consumption of Lamb and Mutton.—There is a wide variation in the regional consumption of lamb and mutton, and this is of vital importance to the lamb producer. Estimates made by the American Meat Institute for 1936 indicated that per-capita consumption in the North Atlantic and Pacific Coast states was from three to four times higher than for the remainder of the country. If these estimates were approximately correct, almost 60 per cent of the total consumption occurred in the North Atlantic states—far removed from the center of production. The Pacific Coast states, on the above basis, would have accounted for at least 13 per cent. With their greatly increased population, they would now probably account for closer to 20 per cent.

Evidence shows that the state's consumption is high. In 1926, the author estimated it at over 13 pounds per capita when, for the nation, it was only 5.5. In 1946, approximately 13.5 per cent of the nation's sheep and lamb slaughter was done in California. With 6.8 per cent of the nation's population residing in the state, this would indicate that consumption was over 13 pounds. In 1947, California's production was estimated to be 116.616 million pounds. Taking into account the in-shipments for immediate slaughter, per-capita consumption was probably about 13 pounds. Indications are that the 1948 and 1949 drop in production and the increased population have lowered per-capita consumption close to the 10-pound mark.

Heavy lamb consumption in San Francisco, compared with that in Birmingham, Buffalo, and Minneapolis–St. Paul, is shown by the results of surveys of the United States Department of Agriculture. San Francisco individuals in housekeeping families, in the winter of 1948, consumed over two and one-half times as much lamb as those in Buffalo, eight times the amount in Minneapolis–St. Paul, and twenty times the average in Birmingham. This shows the importance of the local market as well as the fact that, compared with other cities, a far larger percentage of households in San Francisco used lamb.

Factors Influencing Lamb and Mutton Consumption.—Consumption of meat, including lamb and mutton, depends primarily on the quantity produced. Most of the variations in retail prices result from changes in consumer income—especially in that part available for spending. It is estimated that city dwellers spend about 25 cents of each food dollar for meat. High wages, high employment, and a high average of income available for spending have influenced the demand for meat during the postwar years 1946–1949. The consumer demand for meat is determined not only by the total amount of money possessed by individuals but also by the distribution of that money among individuals. The United States Department of Agriculture, in studies made over the nation in 1942, brings out clearly that the average consumption of meat as well as of poultry and fish is greater for families in the higher income groups. Other studies

indicate that the preference for lamb, especially in the American white group, increases as the disposable income goes up. This is probably the situation in certain sections of the country. There is strong evidence that a part of the variation in lamb consumption by regions is related to variations in per-capita income. Also, there are some groups of foreign origin who prefer lamb to other meats.

Urban families tend to eat considerably more lamb than do rural families. Fewer farmers and ranchers raise sheep than, for example, raise chickens, and the number of lambs used on the farms is relatively less. Apparently city families, in general, tend not only to demand more meat when incomes rise, but to shift demand from pork to beef, veal, and lamb—another point of importance to the California lamb producer.

SHEEP AND LAMB PRICES

If freight and transportation rates remain high and the relative California demand continues to strengthen, local prices will probably become relatively more favorable.

Widely different commodities—lambs, sheep, and wool—as well as different types, classes, and qualities of each, make it difficult to select the price of any one product as definitely and accurately meaningful to a producer. Table 8 shows the relative prices paid farmers in the United States for the combined three main products of the sheep industry (lambs, sheep, wool) and those paid for beef cattle and all farm products. The relationship between these series of relative prices was undoubtedly one of the underlying reasons for the decline in sheep and lamb numbers on the farms and ranches of the United States during the past few years. A significant change occurred in these relationships in 1949. Prices of all farm products were relatively lower. Even more significant was the decline of beef cattle prices compared with the strong prices prevailing for the sheep industry's products.

California Producer Prices for Lambs.—From the standpoint of California producers, the most important

Table 8—Relative Prices of Sheep, Lambs, and Wool, Beef Cattle, All Farm Products, in the United States

Period	Sheep, lambs, and wool	Beef cattle	All farm products
1935–1939	100	100	100
1940	110	116	93
1941	134	135	115
1942	157	164	148
1943	170	183	179
1944	167	166	182
1945*	176	187	188
1946*	200	224	217
1947	224	282	250
1948	245	343	267
1949	254	306	233

* Prices upon which relatives are based included direct payments made to sheep and cattle producers.

Table 9—Producers' Prices for Lambs and Beef Cattle, United States and California

Period	Lambs		Beef cattle		Relative changes			
					Lambs		Beef cattle	
	California	United States	California	United States	California	United States	California	United States
	Dollars per 100 pounds				1935–1939 = 100			
Averages:								
1925–1929	12.28	11.93	8.02	7.85	160	153	121	120
1930–1934	6.33	7.21	5.28	5.07	82	93	80	77
1935–1939	7.68	7.79	6.62	6.51	100	100	100	100
1940–1944	11.18	10.98	10.06	9.96	146	141	152	153
1945–1949	18.96	18.88	17.51	17.42	247	242	265	268
Annual:								
1945	13.40	13.00	12.70	12.10	174	167	192	184
1946	14.60	15.60	14.60	14.50	190	200	221	221
1947	20.40	20.50	18.50	18.50	266	263	285	282
1948	22.80	22.70	22.60	22.20	297	291	341	341
1949*	23.60	22.40	19.10	19.80	307	288	289	304

* Preliminary.

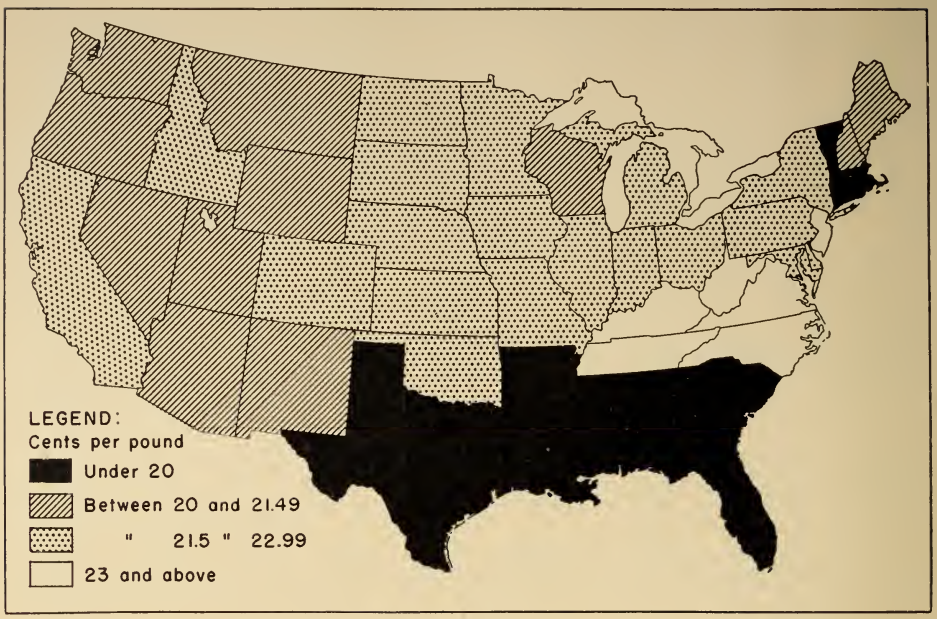
price is that paid for lambs. Table 9 indicates that the California price is approximately the same, on the average, as that paid producers in the entire country. If freight and transportation rates remain high and the relative California demand continues to strengthen, it is probable that the local prices will become relatively more favorable.

A comparison between producer prices for lamb and beef cattle in the state indicates that prices for beef cattle were more favorable during and after the war than in the prewar period of 1935–1939. In addition, the rise in prices paid for beef cattle was much higher than in those for sheep or wool. Producers who could raise beef cattle in place of sheep probably did so. Over a fairly large section of the West, sheep and cattle compete for the same grazing lands and the same feeds.

From 1918 through 1920, California producer prices (fig. 12) averaged more than 200 per cent above the 1910–1914 average. After a setback in 1921, prices again advanced and held at very high levels in the 1920's as compared with other agricultural prices. This had the effect of increasing numbers materially. When, in 1930, the prices began to weaken, those of lambs dropped sharply—$4.75 per 100 pounds in 1932 being approximately 36 per cent of the 1928 or 1929 level. While there was some recovery in 1934, prices from 1935 to 1939 were only about 28 per cent higher than they had been in 1910–1914. Lamb prices, in common with those of other agricultural commodities, rose during World War II, but they did not equal the price rise of the most important competing farm animals (table 8). Average producer prices in 1946 were higher, however, than any previously recorded, and they rose even further from 1947 through 1949.

In July, 1949, there was a considerable break in prices. This brought them more in line with those obtained for both beef

FIGURE 12—AVERAGE PRODUCER PRICES FOR LAMBS, 1947–1949



cattle and hogs. Other influences lowered lamb prices in the summer of 1949, but during the latter part of the year, prices firmed materially. During the first half of 1950 they remained at a high level.

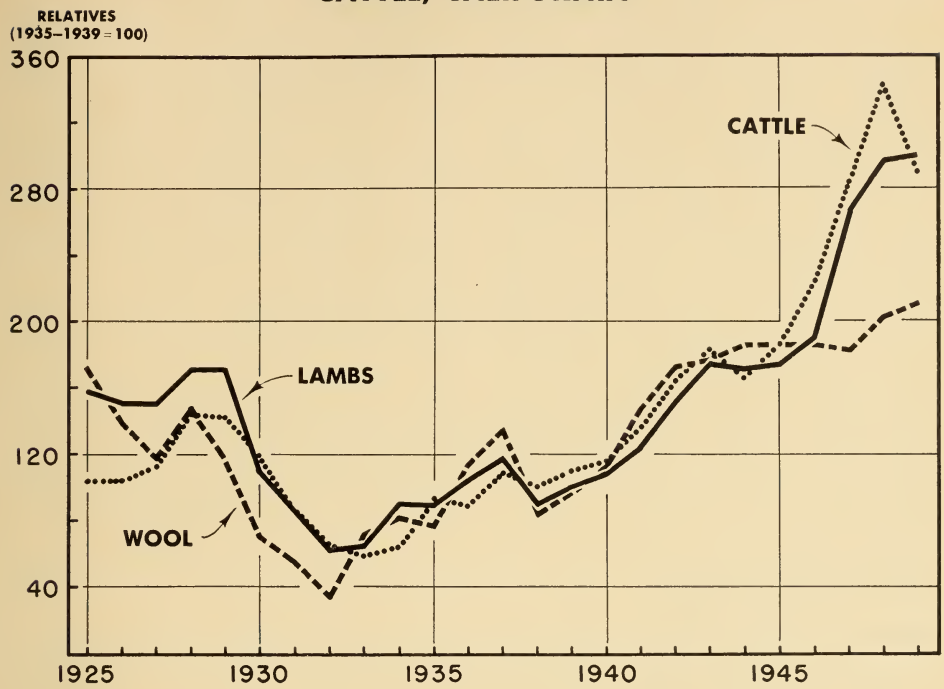
During the period of low lamb production, it is likely that lamb prices will hold to relatively higher levels than prices for other classes of livestock, unless, of course, there are drastic reductions in cattle and hog inventories. However, it is highly improbable that lamb prices will remain too far out of line with producers' prices for other classes of meat animals.

Geographic Distribution of Lamb Prices.—In the three years 1947–1949, California producer prices have been almost identical with those for producers over the nation—the estimated price for the former group being $22.27 per 100 pounds, for the latter, $22.30. In the western section, California prices have been higher than those of any other western state with the exception of Colorado. This higher price is, in part, the result of California's being the "deficit" state in the West. Highest prices during 1947–1949 were received by producers in Kentucky, Virginia, Tennessee, and West Virginia, in the order named (fig. 13). All of these states are close to good markets. The "hill" country areas are adapted to sheep raising. The lamb quality is superior—for example, the Kentucky lamb is out of a black-faced, crossbred western ewe, and is usually sired by either a Southdown or Hampshire ram.

Seasonal Variation in Lamb and Sheep Prices.—The season influences producer prices. The four months, March through June, have been those of highest lamb prices in the nation—the peak usually being in early May. Prices have been lower than average from August or September on. Lamb prices in the last five months of the year have been, on the average, about 10 per cent lower than those of the March to June period.

Feeder lambs in the nation are normally higher in the first four months and lowest about July 1.

FIGURE 13—RELATIVE PRICES OF LAMBS, WOOL, AND CATTLE, CALIFORNIA



For the California lambs, the high-price period, in the past, has been March, April, February, January, and May, in descending order. Lower prices are usual in the three months beginning in August.

During and since the war, the prewar variations were upset. Wartime regulations, subsidies, and so forth, made for changes. Since the close of the war and the removal of controls, the rapid increase in lamb prices has been such that the seasonal pattern has been confusing. The seasonal pattern in effect before the war will probably be repeated whenever there is a more stable price level.

Spring Lamb Prices.—Since lambs constitute an age selection rather than a class, it is difficult to compile data on quotations throughout the year. On the livestock markets, slaughter lambs are divided into two age selections—"spring lambs" and "lambs." The first classification is not easily defined. In market practice the term is based upon the time of birth combined with the time of marketing. The term is limited to lambs which are born during the winter or very early spring and which come to market between the middle of March and the first of June. The season has a deciding influence not only on the time when spring lambs appear on the market but also on their condition. The May wholesale prices ("good" and "choice") at San Francisco indicate the general year-to-year changes that have taken place (fig. 14). May prices on spring lambs were not greatly different in the war years from those of 1925 through 1929. The rise which began in 1945 and which was especially accelerated in 1947, 1948, and 1949 brought prices in San Francisco in May, 1949, to over 300 per cent of what they had been in 1935–1939 and over 100 per cent of what they had been in the 1940–1944 period. May, 1950, prices averaged over a dollar less than those of the previous year.

Sheep Prices.—From 1910 through 1919, the price which the producer received for 100 pounds (liveweight) of lamb was approximately 20 per cent more than that received for 100 pounds (liveweight) of sheep. After World War I, there was a radical change in this relationship. Since 1922—and through 1946—lamb prices have averaged approximately 50 per cent higher than those for sheep. This spread widened in 1947, 1948, and 1949 when sheep prices were not so strong as lamb prices. In California, high sheep prices have customarily been reported in March along with relatively high lamb prices. In the past, the first months of the year have customarily been above average—with lower than average prices in the second half of the year.

Governmental Actions.—The sheep industry has been directly affected over the years by governmental actions, most of which have been related to wool (see page 49). During the war, rationing and price controls on lamb and mutton were in effect as were acts affecting wool. If the policy of keeping shorn wool production up to 360 million pounds annually continues, this will have an effect on the live animal and the carcass prices. Such a policy would tend to support live animal prices materially. In carrying out a program to support the price of an agricultural commodity or product, the Secretary of Agriculture is directed to consider the ability and willingness of producers to keep supplies in line with demand, the support levels of other commodities, availability of funds, and other factors.

RETAIL MEAT PRICES

Until the end of the war, retail prices of other foodstuffs moved upward irregularly, at about the same rate as retail meat prices. But from 1946 through 1949, the relative increase in retail meat prices was greater.

United States.—The consumers' demand for red meats is reflected in part by retail prices. During some periods, for example, the depression of the 1930's and World War II, some prices were partially affected by government action. Any series of data on retail meat prices is open to question if we attempt to use the material for comparisons between areas and between meat products. Certain generalizations can be made by comparing the prices of one meat with those for meats as a class of foodstuffs and with prices of general foodstuffs.

There is considerable correspondence between the retail price movements of all foods and of meats. All retail meat prices rose rapidly during and after World War I, but the rise was not so great as that for all foodstuffs. In 1921, with the fall in prices of retail foodstuffs (fig. 15), those for meat also fell. The 1930's were a period of relatively low retail food prices. In making comparisons of retail prices during and after World War II, the prewar base of 1935–1939 was a period of low retail prices. As a result, the rise from 1939 to 1949 seems very great.

In comparing retail *meat* prices with all retail *food* prices and *all retail* prices, the rise from the prewar period to the end of the war was greater for all retail foods. This was largely the result of government wartime regulations. From 1946 through 1949, retail meat prices jumped upward rapidly, and the relative increase was far greater than that for all retail food prices.

Until the end of the war, all retail prices moved upward irregularly at about the same rate as retail meat prices, but from 1946 through 1949, the relative increase in retail meat prices was greater.

Retail Lamb Prices.—Comparisons between individual meat prices show that lamb has been either the highest priced

FIGURE 14—AVERAGE SPRING LAMB QUOTATIONS FOR MAY (SAN FRANCISCO), AND PRODUCERS' PRICES FOR MAY (CALIFORNIA)

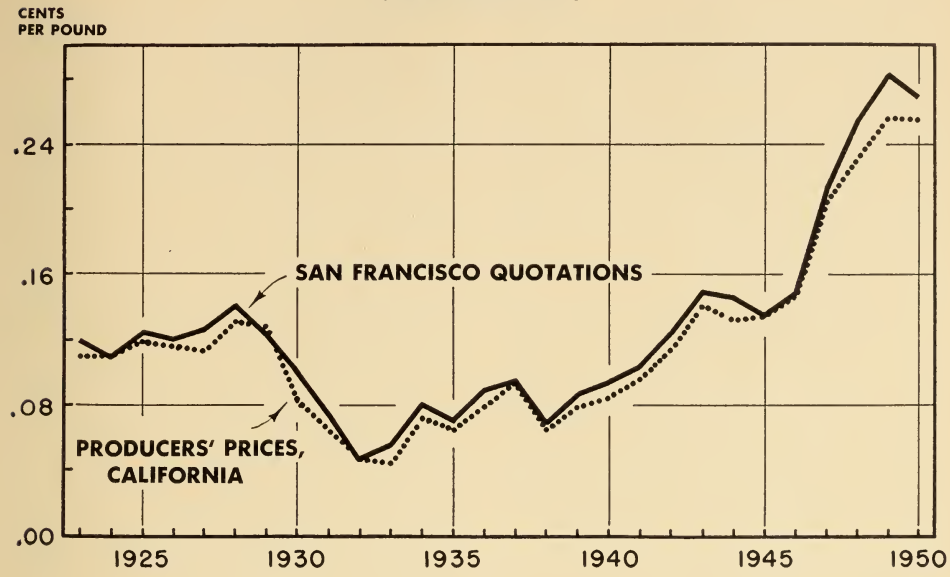
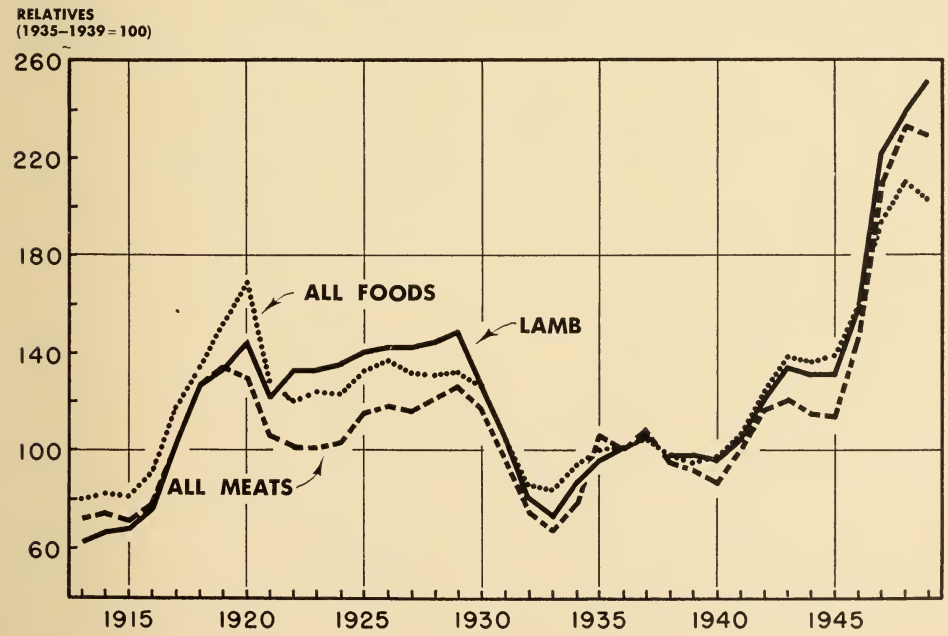


FIGURE 15—RETAIL PRICES—ALL FOODS, ALL MEATS, LAMB—UNITED STATES



or the second highest priced meat over the past 30 years. The correlation between lamb and beef prices is closer than that between lamb and pork.

From 1913 through 1920, retail lamb prices climbed to higher levels than did retail prices of all meats and meat products. The price decline after World War I did not carry retail lamb prices to as low a level as those of all meats and meat products, and for a period of eight years—1922–1929—they remained relatively high. It was during that period that California producers increased flocks.

The depression of the 1930's lowered lamb prices far more than those of the entire group of meats and meat products. While there was some recovery in the middle and late 1930's, there was no material rise until the outbreak of World War II. Price ceilings of the war years prevented prices from advancing so rapidly as they might have. They did not advance so rapidly as farm prices, the latter being raised partially by government marketing payments (1943–1946) and by payments to producers (1945–1946). The removal of controls, the impetus of inflationary and other factors, carried retail prices and those paid producers to the highest level in recorded history. In 1949, retail lamb prices were approximately two and one-half times those for the 1935–1939 period.

In connection with the competition among meats, note the relatively high retail price of lamb in 1948 and 1949 (fig. 15). If beef and pork prices trend lower, it is highly probable that those for lamb would follow a similar trend even though supplies of lamb were relatively far less than those of beef and pork.

Factors Influencing Retail Meat Prices.—Many factors influence what the consumer buys and how much he will pay for it. Lamb price changes are not always explained by conditions in the industry. Consumers are constantly comparing the prices of different meats, as well as those of poultry and fish. All these foods are animal protein sources and are interchangeable. Particularly striking is the relationship between how much a person is free to spend (disposable income) and the retail value of the meat he eats. In the past 35 years, the retail value of meats has varied between 3.5 and 7.1 per cent of the disposable income per person with an average of about 5.8 per cent. The tastes and habits of people, as well as the prices of all foods, also influence meat prices.

There is nothing mysterious about the steady advance in retail meat prices, particularly since the close of World War II. During the war, controls kept prices from going higher. Record employment and armed service for millions made for a record per-capita consumption of meat. High levels of employment, high wages, and the average disposable income kept up after the war. As a result, the demand for meat became even greater after the war's end. This is partly shown by the fact that the retail value of meat consumed, as related to the average consumer income, has been higher since the war than it was in the prewar period.

High meat prices have not been caused entirely by consumer demands. For example, the poor corn crop in the United States in 1947 lowered meat supplies, especially pork. It has already been pointed out that supplies of all meats declined after the war. Outside of producers, few people apparently understand that the mere desire to buy meat, or even enough income with which to do it, does not produce an increased supply in a few weeks or a few months.

These influences on retail prices are mentioned merely to indicate that one specific influence on demand or supplies seldom causes high prices on the one hand or low prices on the other.

COSTS IN THE SHEEP INDUSTRY

There are fewer possibilities for cutting down costs in sheep raising than in most of the other agricultural enterprises.

Ups and downs in livestock numbers are seldom traceable to any one cause. It is highly probable, as noted, that one of the major causes for the decline in sheep numbers from 1942 to 1949 was the prices and profits in alternative enterprises. A second cause was probably wool prices, together with the somewhat uncertain outlook which prevailed for a considerable period. A third cause was undoubtedly the relatively high prices for sheep and lambs at the close of and after World War II. Many remembered the halving of lamb prices after World War I (California lamb prices—June, 1918 = $14.50 per 100 pounds; September, 1921 = $6.90), and the even sharper drop in the depression of the early 1930's (California lamb prices—April, 1929 = $14.00; July, 1932 = $4.10). These producers were afraid of another downward turn, and reasoned that even if they were to remain in the sheep business, it might be better to sell out at high prices and to buy back at lower ones.

Cash Farm Costs.—Still another reason for the decline in sheep numbers during and after the war is what are generally referred to as "cash farm costs." While such figures are available, it is difficult, if not impossible, to fit them into the sheep enterprises of the country in general or those of California in particular.

In addition to specific and general prices of farm products, the Bureau of Agricultural Economics publishes data on prices of feed, building and fencing materials, fertilizers, wage rates, and so forth (table 10). These point up problems which have faced and will continue to face the sheepman as well as other ranchers. The figure which apparently has outstripped others is farm wages. Efficiency in agricultural production over the past 10 years has been greatly increased by use of machines, fertilizer, etc. Just how far the problem of increasing wages has been or can be met by the sheep industry is questionable. The commercial sheep-

Table 10—Goods and Services Used in Production, United States, 1935–1939 = 100

Year	All commodities	Wage rates	Feed	Farm supplies	Building and fencing materials
1939	98	105	88	101	100
1940	99	107	95	104	101
1941	105	125	103	111	108
1942	119	163	126	123	118
1943	132	217	149	137	123
1944	140	263	165	144	131
1945	142	297	164	146	134
1946	154	320	190	147	146
1947	181	346	225	159	191
1948	202	365	238	169	212
1949	192	354	196	176	210

man of the West is an employer of labor. In common with at least some of the other animal industries, it seems that, so far at least, he has not been able to substitute many machines to lighten the labor load.

Because of the way in which the sheep industry is conducted, especially in the West, there has been increased competition for labor capable of tending sheep flocks. This, plus the closing of channels for bringing in new herders, has undoubtedly increased the downward movement in sheep numbers. Even where it was possible to secure the necessary labor, wages increased relatively more than prices. Farm wage rates in the United States in 1949 were three and one-half times higher than they were in 1935–1939.

Cash Costs Other Than Labor.— Estimates of cash costs made by the Bureau of Agricultural Economics for sheep, beef cattle, and all farm products enterprises in the United States indicated that in December, 1946, cash production costs for the sheep enterprise were 107 per cent above those for the 1935–1939 period; for beef, they were 77 per cent higher, while for "all farm products" they were 76 per cent higher. The higher relative costs for the sheep enterprise were evident throughout the war years.

Reliable data on feed costs for California sheepmen are difficult to obtain. Compared with the major livestock industries of the state, cash outlays for grain have not been large. If we compare California barley and lambs, it is readily seen that there was a more rapid rise in barley in the war and postwar periods—until 1948. This was also true of other feeds. At times it was even difficult to obtain protein feeds. Beginning in 1947, this relationship between lambs and feed took a more favorable turn for the sheepman.

Much of the land in California which is used for sheep is rented, and rentals have risen materially since the prewar period. The keeping of sheep and lambs on green alfalfa (p. 17) has compelled many of the state's sheepmen to rent more land. While no comparable data on rentals over a series of years are available, almost every indication points to a relatively large increase, at least up to 1949, in the amounts paid for the land which must be utilized. For example, selling prices of San Joaquin Valley farms during and immediately following World War II rose relatively higher than those for farms in other major agricultural areas of the state. Areas used for cotton, grain, potatoes, etc., command more cash rent than they do when used for sheep pasture. A considerable acreage of these former pasture areas was plowed up and thus became unavailable. According to some who are intimately connected with the state's sheep industry, the difficulty and cost to the grower in "obtaining feed for 365 days in the year"—and usually at a crucial period in the development of the lamb—is one of the reasons for quitting or decreasing the size of the sheep enterprise.

With the total cash costs of the sheepman in mind, it would seem logical to expect that *if there is a downward trend in prices*, those goods which the sheepman buys—including labor—will move downward more slowly than the price of his products.

MEAT AND WOOL INCOME

Income from meat and wool varies greatly among different areas of the state. On the whole, the larger income has been from meat, and this trend increased steadily up to mid-1950.

There is great variation between the areas and states in the relative income received for meat and wool. Generally, the wool income is larger in many areas where fine wool sheep are grown because most lambs are produced as feeders, not fat lambs. Both the price per pound and the lamb weight are low by comparison with those for crossbred lambs produced in areas where the feed is good. In California, there are wide variations among the different areas where sheep are grown; the relative returns from meat and wool for the entire state are not typical for all its subdivisions. The large number of crossbred sheep in California has influenced the relative income from meat and wool, as can be seen by the state's position as a producer of fat lambs

An estimate of the exact percentage of income from meat and wool in the sheep enterprise depends partly on whether we include only shorn wool income in the estimate or whether both shorn and pulled wool are included. Considering only shorn wool, the percentage in the United States has dropped from around 41 per cent, in 1910–1919, to about 36 per cent of the total income in the ten years ending in 1949. If an adjustment is made for pulled wool, the income from wool would be raised to around 47 per cent for 1940–1949, and 51 per cent for 1910–1919. In 1947 and 1948, these per-

FIGURE 16—GROSS INCOME FROM SHEEP AND LAMBS, AND WOOL (MINUS COSTS OF IN-SHIPMENTS), AND CASH INCOME FROM WOOL, CALIFORNIA

centages dropped lower than during any year since calculations were first made. Shorn wool was only about 25 per cent and even the addition of pulled wool brought the percentage up to only 34.

California records do not go so far back as do national ones. The state's meat production, however, has been relatively more important than wool (fig. 16), and this proportion has increased over the years. Compared with shorn wool only, meat accounted for about 64 per cent of the sheep enterprise income. This figure rose above 75 per cent in the three years ending in 1949. If pulled wool is taken into account, the average percentage for 1940–1949 drops to 57. However, 1948 and 1949 showed a percentage of approximately 70. Several factors caused noticeable changes in income during the war. The government bought the wool clip (selling to the government was compulsory) at a set price, while the prices of all lambs, both feeders and fats, were rising. This caused the spread to widen materially.

The very nature of the industry's products—in California, lambs and wool—makes it difficult to look ahead with regard to income. These two products are affected by different sets of supply and demand conditions.

WOOL PRODUCTION AND CONSUMPTION

World-wide consumption of wool is ahead of production in spite of the large reserves on hand following the war. High imports to the United States will continue. The outlook for domestic prices is at present favorable.

World Wool Production. —The California wool grower, far from the place where his wool is used, lives at an even greater distance from the center of world wool production. Before World War II, about 55 per cent (average 1931–1938) of the world's wool was produced in the Southern Hemisphere countries and commonwealths of Australia, Argentina, New Zealand, South Africa, and Uruguay. Some shift in production has occurred since the war. Postwar production in Western Europe, North America, and Africa is lower than in prewar years, while that in Oceania and South America is higher. The largest decline has been in the United States. The Southern Hemisphere constitutes the world's "young" areas, into which wool production has been forced. The natural vegetation on their ranges and pastures has made them the great pastoral areas of the world. They furnish more than 80 per cent of the world's wool exports, which are sent largely to the industrialized sections of Europe and the United States. The importance of the wool movement is emphasized by the fact that before World War II, the only agricultural product whose dollar value exceeded wool in international trade was cotton.

The world's estimated average annual production of raw wool for the prewar years 1936–1940 totaled 3.93 billion pounds. After the beginning of World War II, production reached a peak of 4.3 billion pounds, and over the 1941–1945 period, the average production was still about 4 billion pounds. The disturbances over a large part of the world were such that by 1947 production was down to 3.7 billion pounds. Although it went up from 1948 to 1950, production in the latter year was estimated at 3.9 billion pounds—slightly lower than in the prewar years. World production at present (1950) is not large, when measured in terms of past production data.

All wool is not alike. Raw wool is used for such widely different commodities as apparel and carpets. Carpet wool is produced largely in the U.S.S.R., China,

and India, and most of it is used in those areas. Before the war, China and India shipped sizable amounts into the United States. The flow from China has been cut off, and Argentina is now the chief source of supply for the United States.

The United States grower is primarily interested in the apparel wools. In 1949–1950, world apparel wool production reached an estimate of slightly over 3 billion pounds, compared with an average of slightly under this amount in the prewar years 1934–1938. The 1949–1950 total wool production is estimated to consist of 33 per cent Merino type, 45 per cent crossbred, and 22 per cent carpet type. The decline in the Merino type at the end of the war was greater than that of the other types. During the postwar years, the production gain of this type wool has been large although it is believed that in 1949–1950, production will be about 8 per cent below prewar. Crossbred wool production is estimated to be 8 per cent above prewar figures, while the output of carpet wool will have increased.

World Consumption of Wool.—While total world consumption data were inaccurate even before World War II, they did offer some indications of wool textile manufacturing activities in areas where statistics were fairly reliable. The changes resulting from the war were world-wide. A few countries, notably the United States, expanded consumption. This expansion, during and immediately after the war, placed the United States first in world production of wool textiles. Great Britain had occupied this position before the war. The war cut off certain countries entirely from supplies and curtailed movements into others severely. Germany and Japan, before the war, had important wool textile industries which steadily declined both during and immediately after the war. The mills in the countries where supplies and facilities were available could not take up the slack in consumption and as a result, world wool stocks at the end of the war were by far the largest on record.

There was a rapid recovery of Europe's textile industry after the war, so that by 1948, all of the important European textile manufacturing countries, with the exception of Germany, had almost regained and, in some cases, exceeded the prewar level. The immedate postwar period was one of almost unprecedented demand for woolen textiles in the United States. This demand began to slacken in 1947, and by 1949 apparel wool consumption was the smallest of any year since 1940. West European consumption flattened out somewhat in 1949. During the first half of 1950, a material increase occurred, accompanying that in the United States. In 1949, wool consumption and manufacture again began to develop in Japan, although activity was far smaller than in prewar years.

One of the favorable aspects of the world situation in so far as the grower is concerned is that in the 1949–1950 year, it is estimated that consumption will exceed production by 500 million pounds, or 15 per cent. This is the fourth consecutive year in which world consumption has exceeded production. Since the supplies of wool are limited, it appears that if world demand is strong, there will be no substantial drop in prices below present levels.

Wool Production, United States.—From the beginning of the nineteenth century, for at least 70 or 80 years, wool production in the United States trended upward. Since the 1880's there has not been a distinct, long-time trend in production. In 1922 a low point was reached when total production dipped to 264 million pounds (222 million pounds of shorn wool and 42 million pounds of pulled wool). For the following 20 years, there was a decided upward trend that reached a peak in 1942 with 455 million pounds (shorn, 388 million pounds; pulled, 67 million pounds). Since 1942, production has declined so rapidly that, in 1949,

shorn wool production was reported at 217 million pounds—the smallest since 1879 (table 11).

After slaughter, wool removed from the hide forms the pulled wool which is reported separately from shorn wool—and for the entire country instead of by areas. Over the past few years, pulled wool production has averaged about 20 per cent of that of the shorn product. Production dropped from 73.5 million pounds in 1944 to less than half as much (36.4 million pounds) in 1949.

Wool Consumption, United States. —Use of apparel wool by United States mills declined from 1918 to 1934. This trend then reversed, and before the outbreak of World War II mills used increasing amounts. Raw materials fed into the mills began to increase sharply in 1941, and by 1942 this raw product was over twice what it had averaged in the 1935–1939 period. The demands of war kept consumption high. This high consumption continued on into 1946 when all records were broken, consumption being 120 per cent greater than the average for 1935–1939. The rapid release of men from the armed forces, reconversion and employment shifts, together with the high level of consumer income, were factors in the demand. Total consumption in 1947 was down less than 15 per cent from the previous year. While total raw wool consumption in 1948 was almost identical with that of the previous year, apparel wool had dropped by almost 8 per cent and carpet types had increased by almost 13 per cent. A further decline in 1949 brought consumption to a level just over 50 per cent of that for 1946. Part of the decline was probably the result of lowered retail sales. Decreases in inventories of manufacturing and distribution channels undoubtedly slowed domestic consumption estimates. In the late summer and fall of 1949, consumption began to increase and this increase continued into 1950.

The declining amounts used from 1918 to 1934 were in reality a decline in foreign wools, as the domestic product

Table 11—Wool Production (Shorn), United States and California

Period	United States	California	Relative changes	
			United States	California
	Million pounds		1935–1939 = 100	
Averages:				
1925–1929	291	23	81	96
1930–1934	364	24	101	100
1935–1939	359	24	100	100
1940–1944	373	23	104	96
Annual:				
1945	308	20	86	83
1946	280	18	78	75
1947	253	15	70	62
1948	234	14	65	58
1949	217*	15	60	62
1950	212†	..	..	..

* Preliminary.
† Estimated.

actually increased during those years. Close to 80 per cent of the apparel wool used in 1935–1939 was domestic. The upward trend in use of domestic wools continued through 1942. The jump in the war years was accomplished largely with foreign wools; the domestic product declined actually as well as relatively from 1942 through 1946. In the years of largest consumption (1942–1946, inclusive) 72 per cent of all the apparel wool consumed in this country was of foreign origin. From 1947 through 1949, the amount of foreign wool consumed declined relatively more than that of domestic.

As already emphasized, different grades of wool are used by the country's mills. Since 1918 there has been a relative increase in the amount of fine wool consumed and a relative decrease in the medium wools—both apparel types. The percentage of coarse wools shows a small increase.

Carpet wool complicates the consumption picture. Confusion is particularly evident when consumption or imports are discussed. There is no tariff on carpet wool. It is important to emphasize that carpet wools are not produced in the United States. Such wool is not in competition with apparel wool. Carpet wool consumption drops during war and in periods of low income, and rises in periods of "prosperity." A low of 33 million pounds was consumed in 1943. Only 156 million pounds were consumed in 1945, but by 1948 all previous records were shattered with a consumption of 207 million pounds, followed by an appreciable drop in 1949.

Opinions differ as to future wool consumption. In the 1935–1939 period, 2.2 pounds of apparel wool per capita were used, while in 1947 the amount was 3.5 pounds (scoured basis). A program of military preparedness would make for a considerable demand. The level of consumer income will be an important factor in keeping civilian consumption high or low. The increased population will be a factor in the future. Unless unforeseen developments should occur, indications are that the demands from mills will be larger in the future than they were before the war.

Stocks of Wool.—One cause for the grower's uncertainty has been future wool prices. Part of the fear expressed by sheepmen just after the war arose from reports of wool supplies both abroad and in this country.

The International Wool Study Group estimates that, on the average, during the five years 1934–1935 through 1938–1939 the world had a balance or stock of 1,913 million pounds of wool (grease basis) of which 1,713 million pounds were apparel type wools. At the end of the fiscal year 1946–1947, the balance was 4,674 million pounds—almost two and one-half times the prewar amount. Of the latter, 4,474 million pounds were apparel wools. It was commonly estimated that at least 12 years would be required to dispose of this stock. However, with consumption exceeding production each year since, stocks have been declining rapidly. Estimates place the world total on hand at the end of the 1949–1950 year at 2,648 million pounds, of which 2,448 million pounds will be apparel wool.

In the United States, reported stocks of apparel wool averaged 109 million pounds (clean basis) in the 1935–1939 period. All of this was privately owned. With the outbreak of the war in Europe, stocks began to accumulate and by April 1, 1944, they had reached 408 million pounds, a large part of which belonged to the government. Those wools belonging to foreign governments were not included in these totals. By 1946, the stocks had reached 421 million pounds. As with world stocks, those in the United States began to decline until by April 1, 1950, they were down to 143 million pounds—compared with 346 million pounds two years earlier. Expressed in another manner, April 1, 1950, stocks would have

kept mills running for 17 weeks, as compared with 30 weeks a year earlier.

In addition to the stocks enumerated above, the United Kingdom at one time (June, 1943) had a stockpile of 518 million pounds (grease basis) of Australian, New Zealand, and South African wool stored in the United States. This British-owned stockpile has since been removed. Wool stocks in the United Kingdom as well as in other consuming countries were relatively low in the first part of 1950.

California Production.—In California, wool was one of the first agricultural commodities produced. In the 75 years of Spanish and Mexican rule, the sheep industry expanded to a peak reached sometime between 1810 and 1830, after which it declined. The American occupation encouraged production in relatively "new" areas, so that by 1876 an all-time production peak was reached. A steady decline then set in and continued until 1911. For the next 20 years, production increased until, in 1931, it was double what it had been in 1911. There were no marked changes until World War II started. Unlike that of so many agricultural products, wool production did not expand during the recent war. In fact, a downward trend started and gained speed with the coming of peace. By 1948, California production was lower than it had been since 1917. In 1949, for the first time in several years, production was higher than it was in the previous year.

Textiles in Competition.—Of importance to the wool industry is the competition among the various fibers—animal, vegetable, and synthetic (table 12). This competition has been evident, in certain areas, for over 100 years. It has been stimulated by improvements in production and processing of vegetable fibers and, in recent years, by the appearance of synthetic and regenerated fibers in the struggle. The second animal fiber, silk, for years fought almost a losing bat-

Table 12—Estimated Per-capita Consumption of Wool, Cotton, Silk, and Rayon, United States

(All data are in pounds)

Period	Wool (scoured basis)			Cotton	Silk	Rayon
	Apparel	Carpet	Total			
Averages:						
1910–1919	...	...	3.1	27.9	0.4	*
1920–1929	2.3	0.8	3.1	26.6	0.6	0.5
1930–1939	1.9	0.6	2.5	23.4	0.5	2.0
Annual:						
1940	2.3	0.7	3.1	29.8	0.4	3.6
1941	3.9	1.0	4.8	38.7	0.2	4.4
1942	4.2	0.3	4.5	41.6	*	4.6
1943	4.3	0.2	4.5	38.4	*	4.8
1944	4.2	0.3	4.5	34.5	*	5.1
1945	4.2	0.4	4.6	32.2	*	5.5
1946	4.3	0.9	5.2	33.8	0.1	6.2
1947	3.6	1.2	4.8	32.2	*	6.8
1948	3.3	1.4	4.7	30.3	*	7.8
1949	2.3	1.1	3.4	...	...	...

* Less than 0.1 pound.

tle, and World War II almost dealt it the final blow. In the struggle in the coming years, it appears that vegetable and man-made fibers will be substituted wherever possible for wool. Wool is more expensive to produce, and its production cannot be expanded as much nor as rapidly as can that of the competing fibers. It would not appear that the high wool consumption of 1941–1946 would continue at the same level in the future even with a continued high level of purchasing power. It is estimated that since 1920, wool has constituted between 14 and 15 per cent of the major clothing fibers of the world. In the five years, 1935–1939, the estimate rose to slightly over 15 per cent. Cotton evidently decreased in importance, especially during the World War II years—an abnormal period. Whether or not cotton will remain in a lesser role is questionable. The fibers which have made the greatest increases have been man-made, and these have continued to increase in relative importance—from about .2 of 1 per cent of all major clothing fiber production in the world prior to World War I, to a 15.3 per cent share in 1941 production, ahead of wool!

Relative prices of the cotton, wool, artificial, and regenerated fibers from 1939 to 1949 help explain the trends in the uses of fibers over the past few years. The 1949 wool prices (producers') were at least double what they had been in 1939, those of cotton were over three times higher, while those for rayon (viscose rayon staple) had increased only about 50 per cent. It would appear that this trend in rayon prices (also in substitutes' prices) has exerted some pressure on wool prices.

WOOL MOVEMENTS

The United States is becoming more and more dependent upon foreign wool. Imports are chiefly from South Africa, Australia, New Zealand, Argentina, and Uruguay.

World Movements.—Wool moves in volume from the five principal surplus-producing countries—Australia, New Zealand, South Africa, Argentina, and Uruguay—into the highly industrialized United Kingdom, United States, France, the Netherlands, Belgium, and Italy. Before the war, Germany was among the major importers. In general, the imports have returned to prewar levels, except those to Germany, which will probably continue to lag. In recent years the seven importing countries named have absorbed between 85 and 90 per cent of the exports from the five surplus-producing countries.

Wool Imports and Exports, United States.—Imports of apparel wool have been fairly definite in trend over the past 30 or 40 years. Wars have increased demands for wool. A 1918 peak in imports was followed by an irregular decline that reached an extreme low in 1934. New high tariff duties, in 1930, and the drop in business activities no doubt hastened the decline. It was in the 1930's that domestic production increased. From 1933 until 1939, imports were variable. The draft, defense preparations, and the outbreak of World War II caused wool imports to soar, and by 1941 all previous records had been broken. As already shown, imports made possible the tremendous rise in mill consumption during the war years. Average annual duty-paid imports for the 1942–1946 period were approximately 700 million pounds, compared with 376 million pounds during the previous high-import period—1915–1919. The 1947 imports were over 40 per cent lower than those in 1946. This decline in apparel wool imports continued, caused by the drop in business activity in the United States in the latter part of 1948 and the first part of 1949, and the higher

wool prices abroad. In 1949, duty-paid imports were less than 70 per cent of what they had been in 1948. With domestic stocks and production at low levels, it seems highly probable that imports in 1950 would increase materially. If mill demands remain on a level as high as or higher than those of prewar years, relatively large imports will have to continue for some time—especially if sheep numbers in the United States remain low.

Carpet wool imports have varied significantly from those of apparel wools. In war periods, imports have dropped while at other times they have been strongly influenced by the level of business activity and consumer incomes. Government restrictions on the manufacture of certain types of textiles, as during World War II, had an adverse effect on imports. Imports began to rise at the close of the war, and reached what was probably an all-time peak in 1948, but declined again in 1949 to less than 50 per cent of the 1948 figure.

Exports of apparel wool were small during the past 25 years because domestic prices were relatively higher than export prices. Wool manufacture exports increased during the war, but shipments before 1939 had not been large.

International Relations.—While it is outside the scope of this publication to discuss policies, nevertheless the international relations of wool may affect the position of the United States in foreign trade. Wool is produced (for export) predominantly in "sterling" areas and is an "earner of dollars." On the basis of value, wool has accounted for as much as one third the total exports of Australia, South Africa, and Uruguay and one fourth those of New Zealand in some of the past few years. The position of wool is in distinct contrast to that of cotton, which is exported in large volume from the United States.

WOOL PRICES

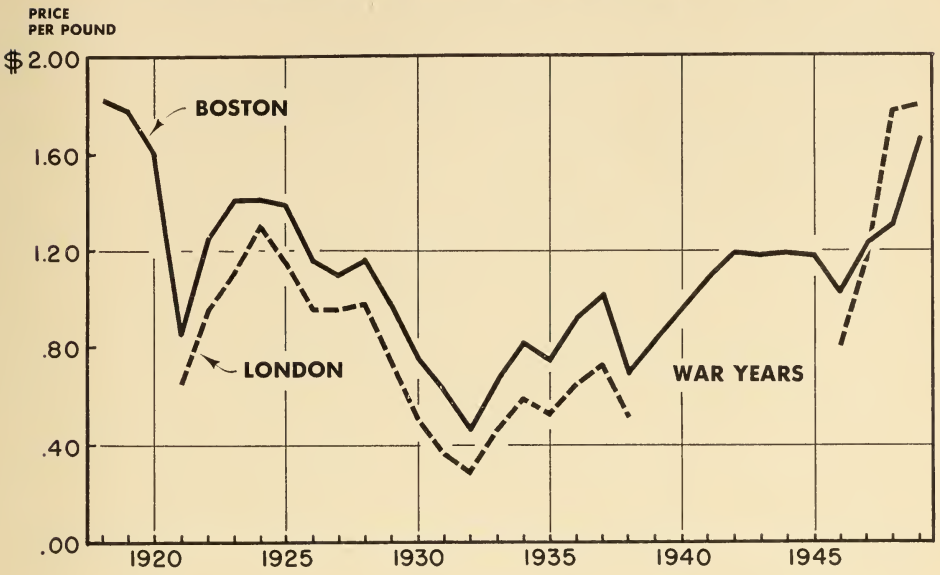
Factors affecting world prices of wool affect United States prices, as do movements in wool tariffs. When prices go up, consumers turn to substitute fibers, and competition increases.

World and United States Wholesale Prices.—The "world-wide" position of wool has been emphasized throughout this publication. United States dependence on foreign wool supplies has made for a high correlation between world prices and those at the principal United States market, Boston (fig. 17), even though the grades for which prices are shown are not identical. Because of this, a tariff can be effective in raising prices to growers in the United States. In the postwar years, prices in the United Kingdom increased more rapidly than did those in the United States, and in 1948 and the first part of 1949 they were actually higher. While British prices weakened somewhat from February through April, 1949, they were almost 14 per cent higher than they had been a year earlier.

In September, 1949, the dollar value of the pound was lowered. This was followed by other devaluations of foreign currencies. Foreign wool prices declined in the United States. A material strengthening of prices occurred in the United Kingdom in the fall and winter of 1949–1950, with a firming of United States prices. In mid-1950, prices in all major producing countries rose sharply, accompanied by a rise in domestic and foreign wool prices at home.

Producer Prices, United States.—Few agricultural products have so many

FIGURE 17—WHOLESALE PRICES OF WOOL AT BOSTON (64's AND FINER) AND LONDON (64's–70's)



different price series as does wool. Any series, such as that paid producers, is useful only in showing general movements. Buyers and sellers, in arriving at a price, consider not only the prices for various grades of wool on the clean basis but they also evaluate the grades and shrinkage of each lot. The price paid producers for wool in the United States is on a grease basis.

Few prices of agricultural commodities dropped to such relatively low levels in the early 1930's as those of wool. The average price paid United States farmers in 1932 was 8.6 cents per pound—less than 22 per cent of that received in 1925. It appears that the general price level affects the price of wool materially, as do the real incomes of nonfarm people. In addition, the volume of production and prices of competing products exert an influence.

During the remainder of the 1930's, prices were lower than those in the latter part of the 1920's. Although wool prices recovered very rapidly from the depression low to 20.6 cents in 1933—a rise of over 150 per cent above the previous year—decreased wool requirements of mills sent prices from 32.0 cents in 1937 to 19.1 cents in 1938. The recovery through 1939 was not rapid. In the prewar period, 1935–1939, wool was not in a particularly favorable price situation (table 13).

On account of the military demands and the almost critical need for wool, it has generally been assumed that the product would be in a more favorable position in war than in peace, but this was not the situation with domestic wool from 1941 through 1945.

The outbreak of war sent wool prices to higher levels, but the advance was far less than it had been from 1914 to 1918 (fig. 18). Growers' prices in the five years 1942–1946 were kept on a fairly even keel largely as a result of purchases made by the Commodity Credit Corporation. The 1947 prices were slightly lower than those of the previous year, and they did not strengthen materially until 1948. Firm

prices prevailed during the first half of 1949. A considerable softening occurred in the second half. In the first half of 1950, prices had again firmed and were above the level of the previous year.

There seems to be little question that one of the contributing factors to the decline in sheep numbers was the relatively low producer's price for wool. In addition, there was considerable uncertainty about future prices. There was a wide gap between the parity ratio for wool and that for all farm products under parity during many of the recent years. This can be explained by the fact that parity was based on the average price for wool from August, 1909, to July, 1914, which was only 18.3 cents per pound. This was one of the fundamental reasons why wool producers sought a new parity standard.

California Producer Prices.—The California wool clip probably varies more than that of any other state. The great diversity in climate, altitude, soil types, and so forth results in many different systems of management as well as the raising of several different breeds of sheep. The practice of shearing twice a year in some sections and once a year in others causes the length of fiber to vary as much as the grade and character.

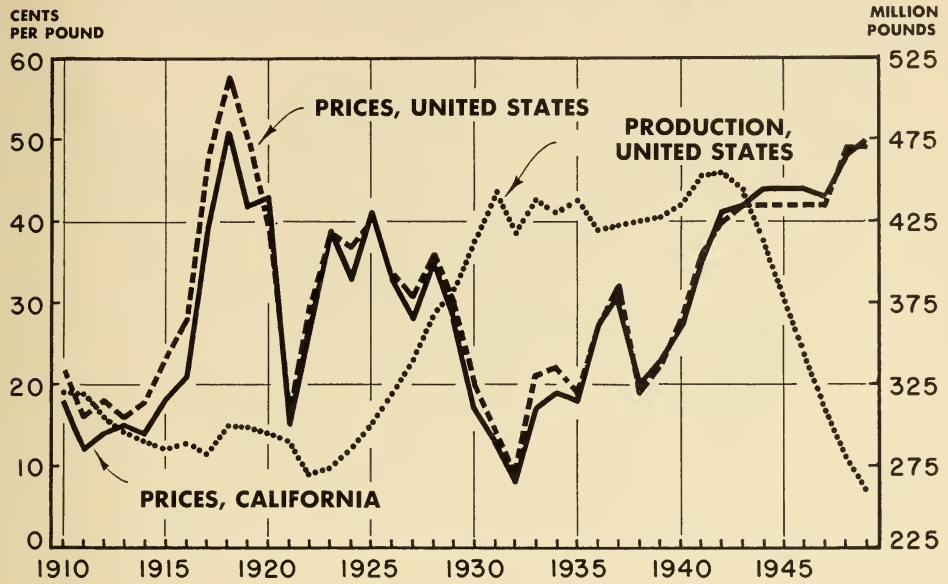
The movements of California prices have been similar to those for the entire country. A relative increase has taken place in the California producers' prices received over the period since about 1935. It is difficult to find reasons for some of this improvement, but there is no doubt that emphasis on shearing, handling, and care has shown tangible results. Increased competition in buying and a closer appraisal of shrinkage may have been contributing factors. The increased demand for fine wools in the world as well as in the United States undoubtedly affected California prices. The state sends sizable amounts of wool

Table 13—Farm Prices of Wool, California and the United States

Period	California	United States	Excess United States over California	Relative changes	
				California	United States
	Cents per pound			1935–1939 = 100	
Averages:					
1910–1914	14.6	17.6	+ 3.0	61	74
1915–1919	34.2	39.4	+ 5.2	144	165
1920–1924	31.4	33.2	+ 1.8	132	139
1925–1929	33.0	34.0	+ 1.0	139	142
1930–1934	14.8	16.8	+ 2.0	62	70
1935–1939	23.8	23.9	+ 0.1	100	100
1940–1944	37.8	37.6	− 0.2	159	157
1945–1949*	45.8	44.9	− 0.9	192	188
Annual:					
1945	44.0	41.9	− 2.1	185	175
1946	44.0	42.3	− 1.7	185	177
1947	43.0	42.0	− 1.0	181	176
1948	48.0	48.8	+ 0.8	202	204
1949*	50.0	49.3	− 0.7	210	206

* Preliminary.

FIGURE 18—PRODUCERS' WOOL PRICES (UNITED STATES AND CALIFORNIA), WOOL PRODUCTION (UNITED STATES)



to the nation's mills as well as to the wool markets, such as Boston and Philadelphia.

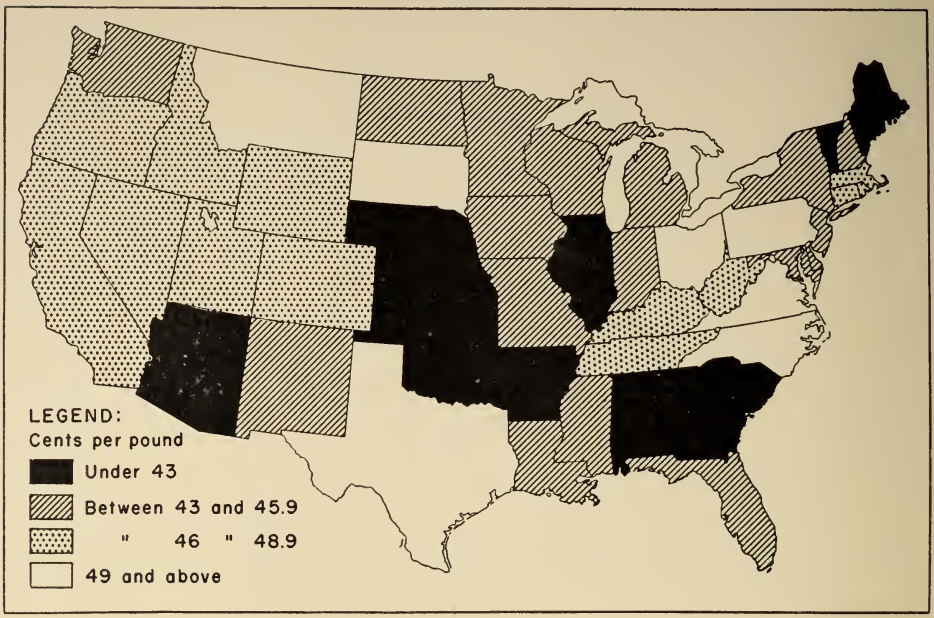
The sharp advance which started in May, 1950, had, by August, brought California producer prices to one of the highest levels on record. This price rise accompanied a similar upturn throughout the United States and an even steeper gain in some of the major foreign producing countries, such as Australia.

On account of the very wide variation between wool prices and areas, any comparisons such as those made in Figure 19 should be used cautiously. In the nation and in the West, Montana and Texas are first in the average price received by producers for wool in 1947–1949. In the native sheep states, Pennsylvania and Virginia stand out. The variability in type, shrinkage, cleanliness, and other qualities partially accounts for some of the price differences. The Pennsylvania clip originates from fine wool sheep and has a low shrinkage, while the Virginia wool is especially clean.

Before the war, producer prices were higher during March, April, and May, and usually somewhat lower during the last four months of the year.

Governmental Actions.—Few, if any, agricultural products have been the subject of as much political and economic controversy as wool. Wool duties (carpet wool excepted) have been the concern of every tariff act of the United States for over a century. The Tariff Act of 1930 placed a duty on wool imports which was probably the highest in the history of wool duties. Before World War II, the Commodity Credit Corporation's loan program on wool had been in effect. With the approach of war and actual participation in it, certain other governmental actions were put into effect to increase supplies. Domestic wool production was encouraged by military contracts requiring the use of domestic wool. Imports of wool were encouraged and stockpiled. Certain increases in price on wool textiles were permitted in order to encourage production. Civilian quotas for wool use were established. Farm prices of wool in the United States were kept from declining by allowable purchases of the Com-

FIGURE 19—AVERAGE PRODUCER PRICES FOR WOOL, 1947–1949



modity Credit Corporation. Allocations of wool to mills, and pricing of garments were put in operation.

Since the close of the war, governmental acts have continued to affect the wool industry. The Agricultural Act of 1949 directs the Secretary of Agriculture to use a support price between 60 and 90 per cent parity to encourage an annual production of 360 million pounds of shorn wool. This is the long-range program for wool. The production goal is only slightly below the average of the ten years 1938–1947, but far above the average of the five years 1945–1949. The Secretary of Agriculture determined that the price support for 1950 wool production would be at 90 per cent of the parity price (the "new" parity price, using a ten-year moving average of prices). The program went into effect on April 1, 1950, and will extend to March 31, 1951. Purchase prices for the various grades of wool were based upon the grade differentials established by market prices for wool during 1949. The support price for 1950–1951 is 45.2 cents per pound, which is 90 per cent of the parity price of 50.2 on March 15, 1950. This compares with a price of 42.3 cents in 1949–1950. Through the first half of 1950, wool prices were above the support price.

If government policy with regard to wool is to keep the price at a level that will bring production up to 360 million pounds of shorn wool annually, it will require the keeping of from 45 to 46 million sheep. The average number in the ten-year period 1935–1944 was close to 46 million.

The nature of the industry is such that only a moderate annual increase in production can be obtained under any circumstances. Within a two-year period, the maximum feasible increase from flocks on hand would probably not be over 20 per cent. It is highly probable that, if the section of the Agricultural Act of 1949 relating to production is carried through, the goal of 360 million pounds of shorn wool cannot be reached before 1955.

CONTENTS

10*m*–10,'50(738)L.L.

California AGRICULTURE

. . . Contains brief, easy-to-read progress reports of agricultural research, and is published monthly by the University of California College of Agriculture, Agricultural Experiment Station.

FIELD CROPS

ORCHARDS

TRUCK CROPS

LIVESTOCK

CALIFORNIA AGRICULTURE offers information useful to the farmer and food processor, together with announcements of other publications dealing with farm subjects as they are issued by the College of Agriculture.

Upon your request, your name will be added to the mailing list to receive CALIFORNIA AGRICULTURE without cost. Send your name and address to:

California Agriculture, Publications Office, College of Agriculture, University of California, Berkeley 4, California