

THE CITRUS PROTECTIVE LEAGUE
of CALIFORNIA

Bulletin No. 9

The
CALIFORNIA LEMON INDUSTRY

by

G. HAROLD POWELL
Former Secretary and Manager

assisted by

F. O. WALLSCHLAEGER
Secretary

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THE CALIFORNIA LEMON INDUSTRY

SUMMARY OF THE CALIFORNIA LEMON INDUSTRY

The American lemon industry is located principally in Southern California with a comparatively small acreage in Tulare County.

In 1912 there were 1,833,011 bearing and 600,095 non-bearing lemon trees in the State. This equals approximately 24,440 acres of bearing trees and 8,001 acres of non-bearing trees.

In the last six years the acreage has increased in the principal counties as follows: Los Angeles, 340 per cent; Orange, 33.3 per cent; Riverside, 85.6 per cent; San Bernardino, 45.6 per cent; San Diego, 72 per cent; Santa Barbara, 13.8 per cent; Ventura, 184 per cent; Tulare, 12.2 per cent.

The industry was much depressed from 1902 to 1904 and many lemon orchards were rebudded to oranges or were dug up. Since 1905 there has been an improvement in the condition of the industry. The total lemon acreage has increased about 30 per cent in the last ten years.

There are at least 95,000 acres of land undeveloped in California that are adapted to lemon culture and on which water can be developed. Ventura County contains 30,000 acres; Orange and San Bernardino Counties, each 10,000 acres, and the San Fernando Valley, 20,000 acres.

The shipments of lemons from California have increased from 878,600 boxes in 1901-2 to 2,146,550 in 1911-12.

There is a duty equivalent to 1 cent per pound on citrus fruits in Australia; 1.84 cents maximum and a free conventional duty on lemons and 2.2 cents on oranges in Austria-Hungary; .79 cents on oranges and lemons in Belgium; .79 cents in Denmark; 1.75 cents in Finland; 1.3 cents maximum on oranges and lemons, .35 cents minimum on oranges and a free conventional duty on lemons in Germany; 2.43 cents maximum and .24 cents minimum in Norway; .44 cents maximum and .044 minimum in Roumania; 2.25 cents maximum and 1.42 cents minimum in Russia; and 1.21 cents in Sweden. There is no duty on citrus fruits in Argentina, Canada, England, or Switzerland. All of the duties with the exception of Australia are revenue duties, no citrus fruits being grown in these countries.

Since 1789 there has been a duty in one form or another most of the time on citrus fruits, the duty changing from ad valorem to a specific duty per 1,000 fruits or per pound under different tariff acts. The present duty on oranges is 1 cent and on lemons 1½ cents per pound.

The total consumption of lemons in the United States during the fiscal year ending June 30, 1912, was 4,072,309 boxes. California furnished 52.3 per cent of the total consumption.

The freight rate on California lemons to points east of the Rocky Mountains is \$1.00 per hundred weight in carload lots of 26,200 and 33,000 pounds minimum, holding on the average 350 boxes, estimated to weigh 84 pounds each. The freight per box is \$0.84. The lemon freight rate has been contested in various federal courts during the last ten years. About 10 per cent of the lemons were shipped under refrigeration in 1910-11. It costs \$0.23 per box for refrigeration to Boston; \$0.22 to New York; \$0.22 to Pittsburg; \$0.19 to Chicago; \$0.178 to Missouri River points.

It costs \$0.30 per box to ship Italian lemons to New York less \$0.06 per box on all lots of 1,000 boxes or more; \$0.559 from Italy to Pittsburg; \$0.644 to Cincinnati or Chicago. It costs \$0.84 per box from California to the same points, a difference of \$0.534, \$0.284 and \$0.194 respectively to the different points in favor of Italian lemons.

The markets of the eastern United States and Canada and the southwestern United States from Cincinnati to Houston, Texas, are largely in the hands of the importers of lemons. About one-fourth of the California crop was shipped into this territory in 1911-12. In the northern-central territory, including western New York, northwestern Pennsylvania, northern Ohio, Indiana, Illinois, Wisconsin and Michigan, about one-half of the total consumption of lemons is supplied by California and one-half by imported lemons. In the Western half of the United States, i. e., west of the Mississippi River, not including eastern Texas, eastern and southwestern Arkansas, southeastern Missouri, and Louisiana, the markets are supplied principally with California lemons.

Ninety per cent of the California lemon crop is marketed through co-operative associations of growers or by individual growers or corporations that produce the fruit. Thirty per cent of the crop is sold at public auction. Seventy-five per cent is handled by the California Fruit Growers Exchange.

The California Fruit Growers Exchange represents 6,500 growers. It represents 115 or more local associations organized into seventeen district exchanges. It is the function of the Exchange to provide facilities for the marketing of the fruit, through agents at all marketing points; to keep associations posted daily on condition of markets and sales of fruit; to create a large demand by advertising. The expenses are met by an assessment against each shipper for a pro-rata share of the expense. The shipper regulates and controls his own shipments, decides when and where to ship, the price he is willing to receive, the exchange acting as a medium through which the orders pass.

The associations in the Exchange contain from 50 to 500 acres of fruit. The association is usually a corporation under the laws of California, without pecuniary profit. The association prepares the fruit for shipment, the cost being pro rated on the boxes shipped by each grower. The fruit of the growers is pooled, each grower receiving his proportion of the amount of each grade handled by the association each month.

The local or district exchange is formed by the associations in a district. It is a corporation without profit. It is the clearing house for handling matters between the general exchange and the associations and to look after the general local business questions common to the associations.

The California Fruit Growers Exchange has a paid-in capital stock of \$1,700 and has a director representing each local exchange.

There are about forty independent co-operative associations in the citrus industry in California.

The Citrus Protective League is a voluntary organization representing 90 per cent of the industry. It handles the public policy questions affecting the industry and all matters affecting the upbuilding of the industry.

Citrus fruit lands with water are valued at \$400 to \$500 per acre with variations ranging from \$250 to \$1,000. Citrus groves are valued at \$1,000 to \$2,000 per acre, with variations depending on local conditions.

It costs from \$750 to \$1,200 to bring a lemon grove into bearing, including the cost of the land and water.

The cost of caring for lemon groves has increased largely in the last ten years.

There are about 25,000 people employed in the citrus industry. About 5,000 are employed in the packing houses. One-half of the labor in the packing houses are American women. There are 3,500 Orientals employe in a total of 25,000 employees. The men are paid from \$1.50 to \$4.50 per day. The women are paid the same rate of wages as the men for the same class of work. The Oriental labor is paid about 25 cents less per day than other labor and is not employed when white labor is obtainable.

The lemon groves vary in size from a few trees to several hundred acres. The average grove contains less than ten acres.

The equipment on a lemon grove, including stock, building, tools, implements, but not including dormitories, averages about \$60 per acre.

The method of securing data on the cost of producing lemons consisted in securing data in accordance with a general schedule covering all of the operations on the ranch, the equipment, improvements, etc.

Cost records have been obtained from 143 representative lemon growers located in every important lemon producing section.

The lemon groves are plowed in the spring both ways and are cultivated between the irrigations. The cost of plowing and cultivating averages about \$35.00 per acre. The groves are irrigated every month or six weeks, from spring till fall and cultivated two or three ways between each irrigation. The cost of the water averages about \$15.00 per acre and the labor of applying the water about \$6.00 per acre.

A cover crop is sown on the land in August or September and is plowed under in the spring. The cost of the cover crop varies from \$0.075 to \$7.50 per acre.

The groves are heavily fertilized with manure or chemical fertilizers or with both, the growers using from \$20.00 to \$120.00 worth of fertilizer per acre per year.

The trees are pruned once or twice a year. Sometimes the association of which the grower is a member, does the pruning. The cost of the pruning is about \$15.00 per acre.

The citrus groves are attacked with scale insects of various kinds and have to be fumigated every year or two. There are several other serious insect pests which are fought with sprays of various kinds. The fumigation costs on the average from \$5.00 to \$10.00 per acre.

The groves are also attacked by fungus and physiological diseases. The principal fungus diseases are the brown rot and withertip, the former fungus growing in the soil beneath the trees and attacking the fruit on the lower branches and spreading through the fruit in the curing tents, the latter attacking the fruit, foliage, blossoms and twigs in all stages of growth. The growers are just beginning to spray the trees for these diseases.

The gum disease and various nutrition troubles are common also. It costs on the average from \$5.00 to \$10.00 per acre for the incidental care of the trees.

In most districts the trees have to be protected against frost in December, January and February. This is done with fires and smudges. The smudging costs about \$20.00 per acre per year whenever it has to be practiced.

The forage and grain for stock costs from \$125.00 to \$150.00 per head per year.

The cost of growing lemons up to the time of harvesting is approximately \$197.00 per acre.

The average yield of lemon groves over a five year period is 196 packed boxes per acre, making the cost of growing the fruit \$1.00 per packed box.

The cost per packed box of handling the lemons from the tree to the car, based on 1,391,711 boxes in 1910-11, is 25.3 cents for picking, 3.9 cents for hauling to the packing house, 59.6 cents for packing charges, making a total of 88.8 cents.

The total cost of growing per packed box is \$1.00; of picking, hauling, and packing \$0.888; freight \$0.84; refrigeration, \$0.026; selling, \$0.07, making a general wholesale cost of California lemons in the market at \$2.824, or an equivalent of 10 cents per dozen. This does not include interest on the investment or depreciation on the groves, equipment or improvements.

The retail price of lemons has changed but little in five years. The changes are due to fluctuations in supply and demand and to weather conditions.

The retail price of lemons in eastern Canada, where the supply comes exclusively from Italy, is the same as the retail price in the eastern United States. In eastern Canada, the lemons enter duty free. In the United States the fruit pays a duty of 1½ cents per pound, or is supplied by California growers.

LOCATION OF THE AMERICAN LEMON INDUSTRY

The American lemon industry is located in Southern California in Santa Barbara, Ventura, Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties, and north of the Sierra Madre range of mountains, principally in Tulare County. The lemon groves are located along the foothills of the Sierra Madre mountains from Santa Barbara to Redlands and Riverside, and on the foothills of the Temescal range at Corona and in the valleys near the coast from Santa Barbara to the Mexican line. The most important regions with the approximate production from November, 1, 1910, to October 31st, 1911, may be roughly grouped as follows:

Tulare County 200 cars; Santa Barbara and Ventura Counties, including Santa Barbara, Fillmore and Santa Paula, 900 cars; the San Dimas center including Duarte, Azusa, Covina, Glendora, San Dimas, Pomona and Claremont, 950 cars; the Upland, Ontario and Cucamonga region, 750 cars; the upper San Bernardino region, including Riverside, Rialto, Colton, Redlands, East Highlands and nearby places, 750 cars; the Corona region 900 cars; the Los Angeles region, including Whittier, Lamanda, Fernando, Pasadena and Hollywood, 950 cars; Orange County 200 cars; San Diego County 1,200 cars; making a total of 6,800 cars.

THE EXTENT OF THE CALIFORNIA LEMON INDUSTRY

The extent of the lemon industry in California is shown in the table following compiled from the latest published report of the State Board of Equalization covering the years 1909 and 1910. The report shows the number of bearing and non-bearing trees in each county in the state in the

spring of 1910. The data are secured by the County tax assessors from each individual in the county and include all the lemon trees in each county.

TABLE I.—Number of lemon trees growing in California in the spring of 1910.

	Bearing	Non-bearing
Alameda.....	1,300	.....
Amador.....	20	4
Butte.....	1,314	208
Calaveras.....	50	50
Colusa.....	1,000	.....
Contra Costa.....	400	100
Fresno.....	21,500	9,000
Glenn.....	4,640	.....
Imperial.....	747	.....
Kern.....	500	500
Lake.....	15	.....
Los Angeles.....	483,600	27,315
Madera.....	150	.....
Mariposa.....	250	.....
Merced.....	750	350
Napa.....	1,030	480
Nevada.....	15	.....
Orange.....	92,655	30,750
Placer.....	675	.....
Riverside.....	160,500	59,980
Sacramento.....	2,500	500
San Bernardino.....	222,200	.....
San Diego.....	161,890	26,814
San Joaquin.....	1,500	.....
San Luis Obispo.....	17,000	10,000
San Mateo.....	110	.....
Santa Barbara.....	110,000	25,600
Santa Clara.....	490	525
Santa Cruz.....	181	52
Shasta.....	250	.....
Solano.....	3,000	.....
Sonoma.....	792	65
Stanislaus.....	2,330	3,210
Sutter.....	754	.....
Tehama.....	785	.....
Tulare.....	42,657	29,513
Tuolumne.....	125	75
Ventura.....	180,000	60,500
Yolo.....	1,200	.....
Yuba.....	4,000	1,950
TOTAL.....	1,522,875	287,541

There are about 75 lemon trees to the acre in the State as a whole making 20,305 acres in bearing and 3,834 non-bearing acres in 1910. The trees are planted from 20x20 to 30x30 feet apart each way. In one of the largest counties the number of trees will not exceed sixty per acre on account of the loss from gum disease and from other causes. In other sections the number per acre may run as high as ninety.

The table following compiled from the records of the State Board of Equalization and records of Horticultural Commissioners, shows the approximate number of acres of all lemon trees bearing and non-bearing

in the eight leading lemon producing counties in the State each year from 1906 to 1912.

TABLE II.—Total number acres lemon trees in eight leading lemon producing counties in California, 1906-1912.

County	1906	1907	1908	1909	1910	1911	1912
Los Angeles	2,585	2,701	5,800	7,059	6,812	8,763	*11,367
Orange	1,371	1,385	1,475	1,500	1,645	1,721	1,825
Riverside	1,701	1,633	1,564	2,330	2,940	3,092	3,158
San Bernardino	2,760	3,009	2,936	2,963	2,963	4,000	*4,020
San Diego	2,293	2,359	2,388	2,540	2,516	2,567	3,946
Santa Barbara	1,680	1,787	1,827	1,835	1,808	1,807	1,912
Tulare	847	871	897	908	962	* 800	* 950
Ventura	1,400	1,420	1,420	1,712	3,207	9,609	*3,975
TOTAL	14,637	15,115	18,307	20,847	22,853	32,359	31,153

* Furnished by the Horticultural Commissioner.

The increase in the number of acres in each county from 1906 to 1912 inclusive, has been as follows: Los Angeles 340 per cent; Orange 33.3 per cent; Riverside 85.6 per cent; San Bernardino 45.6 per cent; San Diego 72 per cent; Santa Barbara 13.8 per cent; Tulare 12.2 per cent; Ventura 184 per cent.

There was a steady increase in the acreage of lemons from 1895 to 1902. At that time the industry became very much depressed. From 1902 to 1904 a large number of the lemon groves were rebudded to oranges, or were dug up. In Claremont for example, 65 acres were replaced in this manner; 30 in Corona; 275 in Covina; 95 in Highland; 60 in Lordsburg; 40 in Ontario; 30 in Orange; 635 in Pomona and North Pomona; 35 in San Dimas; 125 in San Bernardino and 10 acres in Upland.

The depression in the industry was due to a variety of causes. The growers did not understand how to care for the groves or the fruit in the best manner. They did not know how to cure the fruit. The fruit decayed badly while in transit and the eastern dealer was afraid to handle it. The competition of the foreign fruit produced with low priced labor and shipped to the United States under a low freight rate was also a leading factor in the depression. The matter became so serious the railroads reduced the freight rate from \$1.25 per hundred pounds to \$1.00 each year during the heavy shipping season, from 1902 to 1904 when the rate of \$1.00 per hundred was voluntarily made permanent. From 1905 on there has been a good deal of improvement in the methods of caring for the groves and for the fruit and the acreage has increased steadily since. Since the passage of the Payne-Aldrich Act which became effective in August, 1909, and which increased the duty on lemons from 1 cent to 1½ cents per pound, there has been a marked increase in the planting of lemons in the State. The growers have planted new tracts of land in every county in Southern California and in the San Joaquin Valley, and have increased the total acreage about 49.4 per cent.

THE LAND AVAILABLE FOR LEMON PLANTING IN CALIFORNIA

There is a large amount of land available for lemon planting in California on which water can be developed or has already been developed and which is not now planted to fruit trees of any kind. The available land

exceeds the present planted area nearly three times and will be planted in the future if the industry remains stable. To develop the land requires the driving of wells, the installation of pumping plants and irrigating systems and the levelling of the land for planting—steps that are necessary to precede the planting of citrus fruit lands of all kinds in California.

An investigation has just been completed of the land still available in each district in California for lemon planting on which water can be developed or has already been developed. The data follows:

TABLE III.—Land available for lemon planting in California.

	Acreage Available Land
San Antonio District, including region from Azusa to Pomona	1,600
Riverside and vicinity	2,500
Upland-Cucamonga district	10,000
Ventura County	30,000
Corona	1,750
Tulare County	9,000
San Diego County	4,000
Santa Barbara	2,000
San Fernando Valley	20,000
Other districts in Los Angeles County	5,000
Orange County	10,000
TOTAL	95,850

THE SHIPMENT OF LEMONS FROM CALIFORNIA

The shipment of lemons from 1897-98 to 1911-12 from California based on the number of carloads of fruit shipped out of the State by the railroads follows. The railroad shipping year begins November 1st, and ends the 31st of October following:

TABLE IV.—Shipments of lemons from California, 1897-98 to 1911-12.

Year	Carloads	Approx. No. lbs. of Fruit	Approx. No. Boxes
1897-1898	1,166	27,285,000	363,800
1898-1899	903	21,135,000	281,800
1899-1900	1,447	33,862,500	451,500
1900-1901	2,924	68,422,500	912,300
1901-1902	2,816	65,895,000	878,600
1902-1903	2,649	61,987,500	826,500
1903-1904	2,782	65,100,000	868,000
1904-1905	4,274	100,012,500	1,333,500
1905-1906	3,789	88,665,000	1,182,200
1906-1907	3,507	82,297,500	1,097,300
1907-1908	4,959	118,875,000	1,585,000
1908-1909	6,196	151,492,200	2,019,896
1909-1910	4,782	119,071,800	1,587,624
1910-1911	6,891	173,653,200	2,315,376
1911-1912	6,133	160,991,250	2,146,550

* Number of carloads obtained from official Fruit World records; the number of pounds were obtained by multiplying the number of carloads by the estimated average number of boxes per car at seventy-five pounds per box.

The shipments of lemons from California have increased 159.7 per cent in the last ten years and 35.5 per cent in five years.

RATES OF DUTY ON ORANGES AND LEMONS ESTABLISHED BY DIFFERENT COUNTRIES

The table following compiled from data furnished by the Department of Commerce and Labor through the United States Department of Agriculture, October 12, 1911, shows the rates of duty on oranges and lemons established by different countries.

TABLE V.—Rates of Duty on oranges and lemons established by different countries

Country	Tariff Description	Foreign Rate and Unit	U. S. Cents per Pound
Algeria.....	Same as France.....	....	....
Argentina..	.....	Free	Free
Australia.....	Pence (a) per pound.....	.5	.1
Austria-Hungary....	General, in krone (b) per 100 kilo (g)		
	Oranges.....	24.	2.21
	Lemons.....	20.	1.84
	Conventional (i).....	Free	Free
Belgium.....	Francs (c) per 100 kilo (g)..	9.	.788
Canada.....	.....	Free	Free
Denmark.....	Krone (d) per kilo (g)..	.065	.79
Finland.....	Marks (e) per 100 kilo (g).....	20.	1.75
France.....	General, francs (c) per 100 kilo (g).....	15.	1.313
	Minimum (i) francs (c) per 100 kilo (g)	5.	.438
Germany.....	General, oranges and lemons, marks (e).....	12.	1.295
	Conventional (i) oranges (per 100).....	3.25	.351
	Conventional (i), lemons.....	Free	Free
Netherlands.....	Ad Valorem.....	5%	5%
Norway.....	Maximum krone (d) per kilo (g) .....	.20	2.43
	Minimum (i) krone (d) per kilo (g).....	.02	.243
Roumania.....	General, leu (c) per 100 kilo (g).....	5.	.438
	Conventional (i) leu (c) per 100 kilo (g).....	.50	.0438
Russia..	General, ruble (f) per pood (h) gross.....	1.575	2.25
	Conventional (i) ruble (f) per pood (h) gross.....	1.00	1.426
Sweden..	Krona (d) per kilo (g).....	.10	1.216
Switzerland.....	.....	Free	Free
United Kingdom.....	.....	Free	Free
United States (j)....	Oranges.....	....	1.
	Lemons.....	....	1.5

(a) 1d = 1-12 of \$0.243.

(b) 1 krone = \$0.203.

(c) 1 leu = 1 mark or 1 franc \$0.193.

(d) 1 krona = \$0.268.

(i) Citrus fruits imported from Italy and Spain into Austria-Hungary, Germany, Roumania, or Russia are admitted at the conventional rates, and into France, and Norway at the minimum rates of duty.

(j) Citrus fruits from the United States are subject to the lowest duty (conventional or minimum) in all the countries shown in the statement with the exception of Roumania.

(e) 1 mark = \$0.238.

(f) 1 ruble = \$0.515.

(g) 1 kilo = 2.2046 lbs.

(h) 1 pood = 36.113 lbs.

THE RATE OF DUTY ON CITRUS FRUITS AND THEIR BY-PRODUCTS ENTERING THE UNITED STATES FROM 1790 TO 1909 INCLUSIVE

There has been a duty in one form or other on citrus fruits and some of their by-products for more than one hundred years. Beginning with the Tariff Act of August 10, 1790, the rates of duty under the successive tariff

acts are as follows, the table having been submitted and approved by the United States Treasury Department (*Tariff Acts passed by the Congress of the United States, 1790 to 1900, Document No. 671, House of Representatives, 61st Congress, 2nd Session*).

Rates of Duty on Citrus Fruits, By-products of Citrus Fruits and Packages, from 1789 to 1909

Act of July 4, 1789.

On all other goods, wares and merchandise, 5 per cent on the value thereof at the time and place of importation.

Act of August 10, 1790.

Oranges, lemons and limes, 10 per cent ad valorem.

Act of June 7, 1794.

Oranges, lemons and limes, 15 per cent ad valorem.

Act of March 26, 1804, and re-enacted each year thereafter until February 17, 1813.

Seventeen and one-half per cent ad valorem on oranges, lemons and limes.

Act of July 1, 1812.

Oranges, lemons and limes, 35 per cent ad valorem.

Act of April 27, 1816.

All articles not free and not subject to any other rate of duty, 15 per cent. ad valorem.

Act of July 14, 1832.

Lemons and limes exempted from duty.

Act of September 1, 1841.

On all articles admitted free or which are chargeable with a duty of less than 20 per cent, a duty of 20 per cent ad valorem.

Act of August 30, 1842.

Oranges, and lemons in boxes, barrels or casks, 20 per cent ad valorem. Citric acid 20 per cent ad valorem.

All volatile and essential oils 20 per cent ad valorem, not otherwise specified.

Essences not otherwise enumerated, 25 per cent ad valorem.

Act of July 30, 1846.

Oranges, lemons and limes, orange and lemon peel, 20 per cent ad valorem.

Lemon and lime juice, 10 per cent valorem.

Citric acid, 20 per cent ad valorem.

Oil, volatile, essential or expressed, 30 per cent ad valorem.

Act of March 3, 1857.

Oils, volatile, essential or expressed, 24 per cent ad valorem.

Oranges, lemons and limes, orange and lemon peel, 8 per cent ad valorem.

Citric acid, 4 per cent ad valorem.

Lemon and lime juice, 8 per cent ad valorem.

Act of March 2, 1861.

Oranges, lemons and limes; orange and lemon peel; lemon and lime juice, 10 per cent ad valorem.

Oils, volatile, essential or expressed, 20 per cent ad valorem.

Act of August 5, 1861.

Limes, lemons and oranges, 20 per cent ad valorem.

Act of July 14, 1862.

Citric acid, 10 cents per pound.

Lemon and orange oil, 50 cents per pound.

Act of June 30, 1864.

Lemons, oranges, fruits preserved in their own juice and fruit juice
25 per cent ad valorem.

Act of July 14, 1870.

Oranges and lemons 20 per cent ad valorem; limes and shaddocks,
10 per cent ad valorem.

Citrate of lime, free.

Orange and lemon peel, free.

Act of June 6, 1872.

Orange buds and flowers, free.

Act of March 3, 1883.

Oranges, in boxes of capacity not exceeding $2\frac{1}{2}$ cu. ft., 25 cents per
box; in one-half boxes, capacity not exceeding $1\frac{1}{4}$ cu. ft., 13 cents
per half-box; in bulk \$1.60 per thousand; in barrels, capacity
not exceeding that of the 196 lb. flour barrel, 55 cents per barrel.

Lemons, in boxes of capacity not exceeding $2\frac{1}{2}$ cu. ft., 30 cents per
box; in one-half boxes, capacity not exceeding $1\frac{1}{4}$ cu. ft., 16
cents per half-box; in bulk, \$2.00 per thousand.

Lemons and oranges, in packages not specially enumerated or provided
for in this act, 20 per cent ad valorem.

Limes, 20 per cent ad valorem.

Citric acid, 10 cents per pound.

Fruits preserved in their own juice and fruit juice, 20 per cent ad
valorem.

Lemon and orange oils, limes and orange flower, free.

Casks, barrels, carboys, bags and other vessels of American manufacture
exported empty and returned filled with foreign products, in-
cluding shooks when returned as barrels or boxes, free.

Citrate of lime, free.

Lemon and lime juice, free.

Orange and lemon peel, not preserved, candied, or otherwise prepared
free.

Fruits preserved in sugar, spirits or molasses, 35 per cent ad valorem.

Act of October 1, 1890.

Oranges, lemons and limes, in packages of capacity of $1\frac{1}{2}$ cu. ft., or
less, 13 cents per package; in packages of capacity exceeding $1\frac{1}{4}$
cu. ft., and not exceeding $2\frac{1}{2}$ cu. ft., 25 cents per package; in
packages of capacity exceeding $2\frac{1}{2}$ cu. ft., and not exceeding
5 cu. ft., 50 cents per package; in packages of capacity exceeding
5 cu. ft., for every additional cubic foot or fractional part thereof,
10 cents; in bulk, \$1.50 per one thousand; and in addition thereto,
a duty of 30 per cent ad valorem upon the boxes or barrels con-
taining such oranges, lemons or limes.

Articles of the growth, produce and manufacture of the United States,
exported empty and returned filled with foreign products, in-
cluding shooks, when returned as barrels or boxes, free.

Citric acid, 10 cents per pound.

Citrate of lime; lemon juice, lime juice, and sour-orange juice; lemon,
limes, orange, and neroli or orange flower oil, free.

Orange peel and lemon peel, preserved or candied, 2 cents per pound.
Orange and lemon peel, not preserved, candied or otherwise prepared,
free.

Fruits preserved in their own juices, 30 per cent ad valorem.

Fruits preserved in sugar, syrup, molasses or spirits, 35 per cent ad
valorem.

Act of August 27, 1894.

Oranges, lemons, and limes, in packages, at the rate of 8 cents per
cubic foot of capacity; in bulk, \$1.50 per one thousand; and in
addition thereto a duty of 30 per cent ad valorem upon boxes or
barrels containing such oranges, lemons, or limes; Provided:
That the thin wood so called, comprising the sides, tops and
bottoms of orange and lemon boxes of the growth and manufacture
of the United States, exported as orange and lemon box shooks,
may be reimported in completed form, filled with oranges and
lemons, by the payment of duty at one-half the rate imposed on
similar boxes of entirely foreign growth and manufacture.

Citric acid, 25 per cent ad valorem.

Citrate of lime, lemon, lime and sour-orange juice, lemonade, lemon,
limes, neroli or orange flower and orange oil, free.

Orange peel, and lemon peel, preserved or candied, 30 per cent ad
valorem.

Orange and lemon peel, not preserved, candied, or otherwise prepared,
free.

Fruits preserved in their own juices, 20 per cent ad valorem.

Fruits preserved in sugar, syrup, or molasses, 30 per cent ad valorem.

Act of July 24, 1897.

Oranges, lemons, limes, grape fruit, shaddocks, or pomelos, 1 cent
per pound.

Boxes, barrels or other articles containing oranges, lemons, limes,
grapefruit, shaddocks, or pomelos, 30 per cent ad valorem; Pro-
vided: That the thin wood so-called comprising the sides, tops
and bottoms of orange and lemon boxes of the growth and manu-
facture of the United States, exported as orange and lemon box
shooks, may be reimported in completed form filled with oranges
and lemons, by the payment of duty at one-half the rate imposed
on similar boxes entirely of foreign growth and manufacture.

Citric acid, 7 cents per pound.

Citrate of lime, lemon juice, lime juice, and sour-orange juice, orange,
lemon, limes, and neroli or orange flower oil, free.

Orange and lemon peel, not preserved or candied, or dried, free.

Orange peel or lemon peel, preserved, candied, or dried, 2 cents per pound.

Fruits in brine, free.

Fruits preserved in sugar, molasses, spirits, or their own juices, 1 cent per pound and 35 per cent ad valorem.

Act of August 5, 1909.

Lemons 1½ cents per pound; oranges, limes, grapefruit, shaddocks, or pomelos 1 cent per pound.

Boxes, barrels, or other articles, containing oranges, lemons, limes, grapefruit, shaddocks, or pomelos, 30 per cent ad valorem; Provided: That the thin wood so-called comprising the sides, tops and bottoms of orange and lemon boxes of the growth and manufacture of the United States, exported as orange and lemon box shooks, may be reimported in completed form, filled with oranges and lemons, by the payment of duty at one-half the rate imposed on similar boxes of entirely foreign growth and manufacture.

Citric acid, 7 cents per pound.

Citrate of lime; fruits in brine; lemon juice, lime juice and sour-orange juice, all the foregoing not containing more than 2 per cent of alcohol, orange and lemon peel, not preserved, candied, or dried, lemons, limes, and neroli or orange flower oil, free.

Orange peel or lemon peel, preserved, candied, or dried, 2 cents per pound.

Fruits of all kinds preserved or packed in sugar or having sugar added thereto, or preserved or packed in molasses, spirits, or their own juices, if containing no alcohol, or containing not over 10 per cent of alcohol, 1 cent per pound and 35 per cent ad valorem.

THE ALLOWANCE IN DUTY ON ACCOUNT OF DECAYED FRUIT

Under a decision of the Supreme Court (*Lawder vs. Stone* 187 U.S. 281) decayed fruit is considered as a non-importation, and is not subject to duty. Under the Tariff Act of August 5, 1909, sub-section 22 of section 28, provides that "no allowance shall be made in the estimation and liquidation of duties for shortage or non-importation caused by decay, destruction or injury to fruit or other perishable articles imported into the United States whereby their commercial value has been destroyed unless under regulation prescribed by the Secretary of the Treasury." Under this law the Treasury Department issued a regulation October 4, 1909, (Treasury Decision 30023), which provided that in order to obtain an allowance on account of shortage or non-importation, the importers within forty-eight hours after arrival of the vessel, shall give notice in writing to the collector of the customs of their intention to claim such an allowance. The regulation provided that the amount of decay was to be determined by the appraiser who was to examine 5 per cent of the packages in each lot or invoice. The percentage of rotten or worthless fruit found in the packages examined was

considered as the percentage of such fruit contained in the entire importation and an allowance was made accordingly in the liquidation of the entry. This regulation was entirely satisfactory to the importers of lemons, but did not prove satisfactory to the Treasury Department.

A new regulation was issued by the Secretary of the Treasury June 17, 1911, (Treasury Decision 31699), which provides that "the government will adopt as its samples to be weighed for the purpose of estimating the amount of rot in a given cargo, the same samples that the sellers expose as samples of the cargo for the purposes of sale, irrespective of the number or character of the samples, which sale samples must be selected in the presence of a customs officer, and examined immediately thereafter." The average amount of decay found in the samples exhibited by the importers, which under the rules of the fruit trade are supposed to be fair representatives of the condition of the entire lot or invoice, is used as the average amount in each package in the invoice or lot in the liquidation of the entry by the Treasury Department.

The extent of the refunds paid on account of decay for parts of years 1909 and 1910 is given in the table following. The table shows the number of entries examined, the estimated duty on the shipments and the refund on account of decay on lemons imported through the Port of New York; the statement having been furnished by the United States Treasury Department, October 24, 1911.

TABLE VI.—Refund—Decay in lemons—Port of New York—January to September, 1909 and 1910.

	No. of Entries Examined		Estimated Duty Paid on Entry		Refund on Account of Decay	
	1909	1910	1909	1910	1909	1910
January.....	67	223	\$32,080.97	\$113,711.13	\$710.26	\$166.52
February.....	92	190	53,296.54	87,573.08	164.91	109.67
March.....	210	323	123,035.51	141,320.71	390.86	711.73
April.....	153	491	109,013.72	200,606.58	3,490.17	13,484.23
May.....	248	543	138,655.20	239,777.42	11,472.46	56,818.22
June.....	501	664	209,105.05	335,198.90	41,377.79	45,824.69
July.....	632	666	233,710.86	301,099.36	32,168.85	23,239.29
August.....	548	484	222,927.63	191,253.14	35,601.44	12,120.32
September...	291	242	90,264.36	75,760.73	6,509.86	564.53
Totals..	2742	3826	\$1,212,089.84	\$1,736,301.05	\$131,886.60	\$153,039.30
Grand Totals.	6568		\$2,948,390.89		\$234,925.90	

From these data it will be seen that the refunds for 1909 amounted to 10.87 per cent of the total amount of duty collected; in 1910, 8.81 per cent and for the two years an average of 9.66 per cent of the total duty collected. The amount of duty actually paid by the importer was therefore approximately 10 per cent less than the duty based on the average weight of the lemons per box.

THE TOTAL CONSUMPTION OF LEMONS IN THE UNITED STATES

The total consumption of lemons in the United States during the fiscal years 1903 to 1912 inclusive, based on the number of pounds shipped from California added to the number of pounds imported into the United States from Italy follows, with the percentage of the total consumption supplied by California.

The figures are reduced to the government fiscal year basis in order to be comparable. The figures from California are not comparable with the figures based on the railroad year given on a preceding page:

TABLE VII.—Total consumption of lemons in the United States with the percentage furnished by California, 1903 to 1912, inclusive.

Year Ending June 30	Pounds Imported (*)	Pounds California (a)	Total Pounds	Total No. of Boxes Estimated at 75 lbs. of Fruit Each	Per Cent California
1903.....	152,004,312	52,977,600	204,981,912	2,733,092	25.8
1904.....	171,923,221	65,052,000	236,975,221	3,159,670	27.4
1905.....	139,084,321	89,388,000	228,472,321	3,046,298	39.1
1906.....	138,717,252	100,881,750	239,599,002	3,194,653	42.1
1907.....	157,859,906	85,177,800	243,037,706	3,240,503	35.0
1908.....	178,490,003	108,409,350	286,899,353	3,825,325	37.8
1909.....	135,183,550	145,770,900	280,954,450	3,746,059	51.9
1910.....	160,214,785	135,241,983	295,456,768	3,939,424	45.8
1911.....	134,968,924	165,387,600	300,356,524	4,004,754	55.1
1912.....	145,639,396	159,783,750	305,423,146	4,072,309	52.3

(*) Obtained from Commerce and Navigation of the United States.

(a) Obtained by multiplying the official railroad figures of cars shipped by the estimated average number of boxes per car at seventy-five pounds per box.

THE FREIGHT RATE ON CALIFORNIA LEMONS

The freight rate on California lemons to points east of the Rocky Mountains is \$1.00 per hundred weight in carload lots of 26,200 and 33,000 pounds, minimum weight, except to various points in the southeastern territory of the United States where the rate varies from \$1.25 to \$1.33 per hundred weight. In parts of the northwest and parts of Canada the rate varies from \$1.25 to \$1.75 per hundred weight.

The \$1.00 rate is known as a "blanket" or "postage stamp" rate because it is uniform to a large number of points. An average car during the year 1909-1910 contained 332.8 boxes, in 1910-11 contained 336 boxes,

and in 1911-12 contained 350 boxes, estimated to weight 84 pounds each; the boxes have an inside dimension of 10½x14x25 inches. The freight per box at \$1.00 per hundred weight is \$0.84.

There have been a number of changes in the lemon freight rate. From 1885 to November 30, 1902, the rate was \$1.25 per hundred pounds, to the middle west and the Atlantic seaboard; from December 1, 1902, to May 31st, 1903, there was a winter relief rate of \$1.00 per hundred pounds, the relief rate covering the period of heaviest shipments; from June 1, 1903, to November 30, 1903, the rate was \$1.25 per hundred pounds; from December 1, 1903, to June 15, 1904, there was a winter relief rate of \$1.00 per hundred pounds; from June 16, 1904, to October 31st, 1904, the rate was \$1.25 per hundred pounds; from November 1, 1904 to December 5, 1909, the rate was made permanent voluntarily by the railroads at \$1.00 per hundred pounds (see *F. B. E. B. Nos. S. R. 383, 395, 508, 609*) (*I. C. C. Nos. 269, 279, 400, 505*); from December 6, 1909, to February 14, 1912, the rate was \$1.15 per hundred pounds, the tariffs being filed with the Interstate Commerce Commission advancing the rate from \$1.00 in November and December, 1909, (*Supplement No. 2 to Trans-Continental Freight Bureau Eastbound Tariff No. 7-B (I. C. C. No. 894) and Trans-Continental Freight Bureau Eastbound Tariff No. 34 (I. C. C. No. 906)*). On order of the Interstate Commerce Commission the rate was reduced to \$1.00 per hundred on February 15, 1912.

The winter relief rates during the years referred to were established by the railroads during the period when there was great depression in the industry and when the lemon acreage was being budded over to oranges, the railroads establishing the \$1.00 rate originally to help the industry in its struggle against foreign competition, and later voluntarily making the \$1.00 rate permanent.

When the rate was advanced to \$1.15, December 5, 1909, following the passage of the Payne-Aldrich Act, which increased the duty on lemons from one cent to one and one-half cents per pound, 90 per cent of the shippers joined and obtained an injunction (*175 Fed., 144*) in the Circuit Court of the United States for the Southern District of California, Southern Division, restraining the railroads from putting into effect the \$1.15 rate until the reasonableness of the advance could be passed upon by the Commission. The shippers were required to give bond and have deposited to the credit of a surety company as Trustee, since the issuing of the injunction, an amount equivalent to fifteen cents per hundred pounds on the weight charged by the Trans-Continental railroads on each car of lemons shipped into the territory embraced in the advance, the amount so collected to be held until it is finally adjudged whether the restrained rate was legally established and is legally enforceable, when it shall be paid to the railroads or to the shippers.

Through an action brought by the growers and shippers before the Inter-state Commerce Commission (*No. 3000 Arlington Heights Fruit Exchange et. al., vs. Southern Pacific Company, et. al.*) the latter body declared in June, 1910, (*Opinion No. 1361*) the rate of \$1.15 to be unreasonable and ordered the railroads to establish a rate not to exceed \$1.00 per hundred pounds.

Through the Circuit Court of the United States, for the District of Kansas, the railroads secured an interlocutory injunction suspending the order of the Commission and referring the case to the United States Commerce Court for consideration and determination (*No. 894, A. T. & S. F. Ry. Co., et. al., vs. I. C. C. October 27, 1910*).

The United States Commerce Court, October 5, 1911, issued a permanent injunction restraining the enforcement of the order of the Commission, which had the effect of restoring the rate to \$1.15 and referred the case back to the Commission, without prejudice to a reopening and reconsideration of the original proceedings before it, or of any further complaint in respect to the \$1.15 rate. The order of the Commerce Court was based primarily on the ground that the rate of the Commission had been established on grounds other than traffic considerations and that the Commission, in fixing the \$1.00 rate acted beyond the powers delegated to that body (*U. S. Commerce Court, No. 7, April Session, Opinion October 5, 1911*).

The United States Circuit Court of Appeals for the ninth circuit upon appeal from the United States Circuit Court for the Southern District of California, Southern Division (*The Southern Pacific Company, et. al., appellants, vs. The Arlington Heights Fruit Company, et. al., appellors, No. 1804*) which granted a temporary injunction November 9, 1909, until the Interstate Commerce Commission shall have determined whether the rate of \$1.15 was unjust and unreasonable, reversed the decree of the lower court and remanded the case with directions to dismiss the suit on the ground that a federal question being involved, the defendants, the railroads, being residents of states other than California have the absolute right under the statute of being sued within the district of which they are citizens and inhabitants (*Opinion October 9, 1911*).

The Interstate Commerce Commission reopened and reheard the original proceedings, November 15, 1911. On December 11, 1911, the commission decided the \$1.00 rate to be reasonable and increased the minimum loading for collapsible bunker cars not forwarded iced to 33,000 pounds. The railroads appealed from this decision of the Commission to the Commerce Court on the ground that the rate was confiscatory. The Court heard the case in June, 1912, the decision not having been rendered to date (December, 1912).

Formerly a large proportion of the lemon shipments moved under refrigeration during the summer months. In the last few years the growers and shippers have bestowed much greater care on the handling of the fruit and have thereby improved the keeping of the fruit while in-transit. The use of ice has therefore, fallen off on the whole, though in seasons like 1911 when the fruit was more susceptible to injury in handling the percentage of refrigerated shipments increased.

In 1906-7 approximately 79.3 per cent of the shipments moved under ventilation; in 1907-8, 79.9 per cent; in 1908-9, 67.4 per cent; in 1909-10, 91.2 per cent; and in 1910-11, 81.2 per cent. A few of the shippers who handle the fruit with extreme care use the ventilation method of shipment throughout the season.

The cost of refrigeration to Boston is \$77.50 per car, equivalent to \$0.23 per box; to New York \$75.00, equivalent to \$0.223 per box; to Buffalo and Pittsburg \$72.50, equivalent to \$0.216 per box; to Chicago, \$62.50, equivalent to \$0.186 per box; to Missouri River points \$60.00, equivalent to \$0.178 per box.

The lemons are shipped from California every month in the year. About 60 per cent of the shipments go forward from March to July, the heaviest occurring in May, June and July.

THE FREIGHT RATE ON CALIFORNIA AND FOREIGN LEMONS

The freight rate on lemons from Italy to New York is 35 cents per box. According to an official statement this rate includes a rebate of 4 cents per box on all shipments to be used in the defense of the Italian lemon industry, and an additional rebate of 6 cents per box on all lots of 1,000 boxes or more.

The table following shows the railroad freight rates on imported oranges and lemons in the United States from five seaports to six interior points, 85 pounds per box. The data were compiled by the Inter-state Commerce Commission, and furnished by the Bureau of Statistics of the United States Department of Agriculture and shows the freight rates in force August 3, 1911.

TABLE VIII.—Railroad freight rates on imported oranges and lemons in the United States from five seaports to six interior points, 85 pounds per box.

FROM	DESTINATION	Rates per 100 Pounds			
		Oranges		Lemons	
		CL	LCL	CL	LCL
New York	Pittsburg, Pa.	\$0.30	\$0.39	\$0.30	\$0.39
"	Cincinnati, O.	.40	.57	.40	.57
"	Chicago, Ill.	.40	.65	.40	.65
"	Poplar Bluff, Mo.	.83*	1.28*	.83*	1.28*
"	Shreveport, La.	.75	1.24	.75	1.24
"	Houston, Texas	1.32*	2.23*	1.32*	2.23*
Boston	Pittsburg, Pa.	.30	.39	.30	.39
"	Cincinnati, O.	.41	.49	.38	.49
"	Chicago, Ill.	.47	.57	.38	.57
"	Poplar Bluff, Mo.	.92*	1.21*	.81*	1.21*
"	Shreveport, La.	.75	1.24	.75	1.24
"	Houston, Texas	1.41*	2.16*	1.30*	2.16*
Philadelphia	Pittsburg, Pa.	.28	.31	.28	.31
"	Cincinnati, O.	.38	.49	.38	.49
"	Chicago, Ill.	.38	.57	.38	.57
"	Poplar Bluff, Mo.	.81*	1.20*	.81*	1.20*
"	Shreveport, La.	.75	1.24	.75	1.24
"	Houston, Texas	1.30*	2.16*	1.30*	2.16*
Baltimore	Pittsburg, Pa.	.27	.33	.27	.33
"	Cincinnati, O.	.37	.49	.37	.49
"	Chicago, Ill.	.37	.57	.37	.57
"	Poplar Bluff, Mo.	.80*	1.20*	.80*	1.20*
"	Shreveport, La.	.75	1.24	.75	1.24
"	Houston, Texas	1.29*	2.15*	1.29*	2.15*
New Orleans	Pittsburg, Pa.	.50	.90	.50	.90
"	Cincinnati, O.	.44	.83	.44	.83
"	Chicago, Ill.	.47	.90	.47	.90
"	Poplar Bluff, Mo.	.63*	.94*	.63*	.94
"	Shreveport, La.	.25	.60	.25	.60
"	Houston, Texas	.13¼	.21¼	.13¼	.21¼

* Combination based on St. Louis.

According to data received from the Interstate Commerce Commission, October 11, 1911, foreign lemons are shipped from New York, Brooklyn, or Jersey City to western points in carload lots of a minimum weight of 20,000 pounds, the packages measuring 27x14x13 inches in diameter and estimated to weigh eighty-five pounds per box. The half boxes measure 27x14x6½ inches and are estimated to weigh forty-five pounds per half box.

The freight rate on lemons from California to the five points mentioned above is \$1.00 per hundred weight in carload lots of 26,200 pounds minimum weight. The lemons are shipped at an estimated weight of eighty-four pounds per box.

The table following shows the rate per hundred pounds and per box on lemons in carload quantities from Italy and from California to New York, Pittsburg, Cincinnati, and Chicago, Illinois, with the amount of difference in favor of the Italian lemons.

TABLE IX.—Rates on California and Italian lemons to New York, Pittsburg, Cincinnati and Chicago

DESTINATION	Per Cwt.		Difference in favor of Italy	Per Box		Difference in favor of Italy
	Carload Lots			Carload Lots		
	from California	from Italy		from California	from Italy	
New York	\$1.00	†\$0.358	\$0.642	\$0.84	\$0.304	\$0.536
Pittsburg, Pa.	1.00	†0.658	0.342	0.84	0.559	0.281
Cincinnati, O.	1.00	†0.758	0.242	0.84	0.644	0.196
Chicago, Ill.	1.00	†0.758	0.242	0.84	0.644	0.196

† Based on rate of 30.4 cents per box of 85 pounds to New York and not including transfer charge in New York of 3 cents per box. From the 30.4 cents rate a rebate of 6 cents should be deducted on all lots of Italian lemons of 1,000 boxes or over.

THE DISTRIBUTION OF CALIFORNIA LEMONS IN THE UNITED STATES AND CANADA

The markets of the eastern United States and Canada, including Quebec, Montreal, Boston, New York, Philadelphia, Baltimore and the southern states to Florida and the southeastern United States from Cincinnati to Houston, Texas, are largely in the hands of the importers of foreign lemons. This part of the United States in 1910, according to data furnished by the Census Bureau contained 51,590,687 people. During the season beginning September 1, 1908, and ending August 31, 1909, 23.8 per cent of the California lemon crop was shipped into this district; in 1909-10, 13.8 per cent; in 1910-11, 25.7 per cent and in 1911-12, 27.4 per cent. These figures are based on the proportion of the entire crop shipped into these districts by the California Fruit Growers Exchange, which handles 75 per cent of the California lemon shipments. In the northern central territory including western New York, northwestern Pennsylvania, northern Ohio, Indiana, Illinois, Wisconsin and Michigan, about one-half of the total consumption is supplied by foreign and one-half by California lemons. This section in 1910 contained 17,873,708 people. In 1908-09, 32.5 per cent of the California lemon crop was shipped into this section; in 1909-10, 31.3 per cent; in 1910-11, 28.1 per cent and in 1911-12, 27.9 per cent. In the western half of the United States, i. e., in the section west of the Mississippi, not including eastern Texas, eastern and southwestern Arkansas, southeastern Missouri and Louisiana, the markets

are supplied almost exclusively with California lemons, the foreign fruit extending more or less into the territory adjacent to the Mississippi. This section in 1910, contained 22,507,871 people; in 1908-09, 41.4 per cent of the California crop was shipped into the western territory; in 1909-10, 52.1 per cent; in 1910-11, 44.4 per cent and in 1911-12, 42.2 per cent. About 2 per cent of the California crop was shipped into western Canada in 1908-09; 2.5 per cent in 1909-10; 1.8 per cent in 1910-11; and 2.5 per cent in 1911-12.

THE MARKETING OF THE CALIFORNIA LEMON CROP

The lemon crop of California is marketed largely through co-operative associations of growers, or by individual growers or corporations that produce the fruit. Probably 90 per cent of the crop is handled in this manner. The remainder of the crop is sold by packers or shippers either F.O.B. cars in California or in a distant market, or it may be sold in lump or per box to a dealer in California. About 30 per cent of the lemon crop is sold at public auction, the principal auction markets being located in Boston, New York, St. Louis, Pittsburg, Cincinnati, Cleveland, Philadelphia and Baltimore. The remainder when sold in the eastern markets is handled by agents of the associations or by brokers or by commission merchants who sell to the jobbers or to the retail trade.

The fruit is graded in the central packing house into two to four grades, the grade depending on the texture of the skin, the form and general appearance of the fruit. The grades are known as fancy, choice, and standard, with occasional intermediary grades known as extra choice and extra fancy. Each grade of an association or shipper is forwarded under a brand or label which in the trade stands for the particular grade of that association or shipper.

The sizes of lemons vary from 180 to 540 per box. Few are shipped larger than the 240 or smaller than the 490 per box size. The 300 and the 360 per box sizes are the most desirable. As a rule the southern markets prefer the 360, and the markets north and east of Kansas City the 300 per box size with a greater or less variation depending on the price of fruit in the different markets.

About 75 per cent of the lemon crop is handled through the California Fruit Growers Exchange. As this organization is the largest co-operative institution in California a brief description of its formation and function follows:

THE CALIFORNIA FRUIT GROWERS EXCHANGE

The California Fruit Growers Exchange represents about 6,500 growers who have organized themselves into 115 or more local associations. The associations are composed of forty to one hundred or more growers who usually own a packing-house where the fruit of the members is brought together, graded and prepared for market. The association usually has trained gangs of labor and picks the fruit of the members. The associations were formed as early as 1888 for the purpose of economizing the handling of the fruit and of extending the markets. On account of the high freight rates and the extent of the industry the fruit is shipped in carload lots, which prevents the small grower from marketing his own fruit.

The associations of a community are usually organized in a district exchange. The district exchanges were originally formed by the associations as early as 1893 in order to make it possible to employ better

agents to represent the associations, to handle the business questions common to them all. There are now seventeen of these local exchanges.

It was found in the early nineties that the markets were not being developed rapidly enough by the local exchanges, that inspectors were needed at the division points of the transcontinental lines to see that the cars were iced and the fruit properly protected, that agents were needed to devote their entire time to the distribution and sale of fruit, and that the growers might obtain prompt information with regard to the various markets of the country so as to equalize the distribution of the fruit. In order to meet these requirements the local exchanges in 1895 formed a larger organization, the Southern California Fruit Growers Exchange, which was formed by the election of one director from each local exchange. In 1905 the name of the organization was changed to the California Fruit Growers Exchange.

It is the function of the California Fruit Growers Exchange to provide agents at all the principal marketing points throughout the United States and Canada, to define the duties of the agents and to place them under bond; to gather daily information of each market throughout the country and to furnish it daily in bulletin form to each association; to perform such services as the associations require in the marketing of the fruit; to make prompt account of returns; to handle all claims; to take care of necessary litigation; to conduct an extensive advertising campaign to increase the demand for citrus fruits, to develop new markets and secure new customers through the exclusive agents employed, and to perform such other functions as are set forth in the contracts between the Exchange and the local organizations. At the end of the year the Exchange levies an assessment against each shipper for a pro-rata share of the expenses on a basis of the number of boxes shipped.

Under this arrangement each shipping organization reserves to itself the right to regulate and control its own shipments; to use its own judgment; to decide for itself when and in what amount it shall ship; to what markets it shall ship; where its products shall be sold and the price it is willing to receive; reserving the right of free competition with all other shippers including other members of the organization, uncontrolled by anyone. The agent at this point acts directly under the order of the shipper in the sale or disposition of a car, the general exchange acting as the medium through which orders pass, but never selling a car or determining the price at which it shall be sold.

THE LEGAL STATUS OF THE EXCHANGE

THE GROWER AND THE ASSOCIATIONS

The unit in the Exchange operations is the grower, who owns an average of 10 to 15 acres of citrus fruits. The associations embrace on the average about 50 growers or 500 acres to each packing-house. The association is usually a corporation under the laws of California without pecuniary profit. The by-laws of each association provide that the picking, handling and packing shall be done at actual cost pro-rated on the boxes shipped by each grower.

In the organization of an association the usual method is to issue the stock to each grower in proportion to the number of acres of orchard which he owns, or in some instances on the basis of the number of boxes shipped. In other cases each member of an association has one vote regardless of his acreage or production. The only property owned by an association is the packing-house and appurtenances. It generally accumulates no profits and declares no dividends. The proceeds of the sale of the fruit for each grower are returned to him less packing expenses. In most cases the fruit is graded and pooled each month, each grower receiving his proportion for the amount of each grade handled by the association each month. In other cases the fruit for the entire season is pooled, each grower receiving his proportion for each grade for the season and in some cases it is handled and shipped for each grower individually.

THE DISTRICT EXCHANGE

The association is the primary organization. The secondary organization in the Exchange system is the local or district exchange which usually comprises all of the associations in the district or locality, though in some cases several districts are embraced in one local exchange. In very large districts there may be two or more local exchanges. The local exchange is a corporation without profit under the laws of California with nominal capital stock, usually one share to each association belonging to it and one director for each association. The local exchange is a clearing house for shipments and its duties are to order cars and to see that they are placed at the various packing-houses; to keep a record of all shipments made and destinations and receive all returns from the various agents at the various marketing points; to aid in securing information as to markets; to keep constant check on the business and see that orders for fruit are promptly filled; to see that collections are promptly made and to afford a medium of information for the associations through the general exchange and the agents throughout the country, and to see that returns go to the association which ships the fruit.

THE CALIFORNIA FRUIT GROWERS EXCHANGE

The final organization is the California Fruit Growers Exchange, which has a paid-in capital stock of \$1,700 and has a director representing each local exchange. The California Fruit Growers Exchange is a corporation under the laws of California without profit. It declares no dividends and neither buys nor sells fruit or any other commodity. It exercises no control whatever directly or indirectly over the buying or selling of fruit or any other commodity. Its function is to furnish facilities for the use of such shippers as wish to avail themselves of them at a pro-rata share of the cost. The membership of the Exchange is entirely voluntary. Any grower may withdraw from any association at the end of each year, or any association may withdraw from any local exchange and the local exchange may withdraw from the central exchange. About one-third of the entire shipment of the Exchange is sold in open auction markets, and at other points through unrestricted competition between the various organizations. There is no uniformity in price from the fact that there are a great many variations in the quality and appearance of fruit and each brand of fruit sells on its merits. In every market different brands vary widely in price on account of the variation in the quality of the fruit grown in the different sections.

There are in addition to the California Fruit Growers Exchange about forty independent co-operative associations and individual grower-shippers, which, with the Exchange, handle 85 per cent of the citrus fruit crop. The independent co-operative associations conduct their operations along the same general lines as outlined above. In addition to these associations and independent grower-shippers, a small proportion of the fruit is handled by speculative buyers or is shipped through agents to eastern firms on consignment.

THE CITRUS PROTECTIVE LEAGUE OF CALIFORNIA

The Citrus Protective League of California is a voluntary organization formed in March, 1906, by representatives of growers, shippers and shipping organizations in nearly all of the citrus growing localities in the State, to handle the public policy questions that affect the industry as a whole, and to promote its general welfare. Its purpose is to represent the grower and shipper in handling such questions as railroad rates and transportation problems, customs tariff, and other governmental relations; State and Federal legislation that applies directly to business, and all other questions of a general nature that affect the upbuilding of the industry. The League has nothing to do with the marketing of the fruit.

THE VALUE OF CITRUS FRUIT LANDS IN CALIFORNIA

There is a wide variation in the value of citrus fruit lands in California. The land without water is valueless for citrus fruit growing. It is the combination of land and water that gives it value, primarily, with a greater or less additional value depending on the character of the soil, the comparative freedom from frost, wind and other drawbacks, the proximity to a town or city, and its location in respect to transportation and good roads. Generally speaking the value of the established water rights under recognized and substantial systems is about \$250.00 per acre, with a greater or less variation ranging from \$100 to \$600 per acre. The value of land and water is approximately \$400 to \$500 with variations ranging from \$250 to \$1,000 per acre. The value of the citrus groves is as variable as the land values, the prices ranging from \$1,000 to \$2,000 per acre for bearing groves with variations above and below, depending on local conditions and the condition of the grove.

THE COST OF BRINGING A LEMON GROVE INTO BEARING

The cost of bringing a lemon grove into bearing includes the preparation of the land for planting, i. e. clearing the land and levelling it for irrigation, building the irrigating ditches and distributing flumes; the cost of the trees and their planting and the annual care of the grove during the unproductive stage. The trees begin to bear at three years of age; at five or six years of age they may be self sustaining, if well cared for, and at ten to fifteen years of age, they may have arrived at full bearing. The cost of clearing, grading and preparing the land for planting may vary from \$10.00 to \$15.00 per acre, the cost of the irrigation ditches and flumes from \$15.00 to \$50.00 per acre; the cost of the trees and the planting of the same, from \$75.00 to \$150.00 per acre and the annual care of the grove from \$30.00 to \$100.00 per acre up to five years of age.

The statement following from the Riverside Trust Company, Limited shows the cost of bringing 163 acres of lemons into bearing. The trees were planted in the spring of 1905 and the account covers the period to September 30, 1909. The account is divided into three parts; part 1, shows the cost of the land and water, the preparation and planting of the land and cultural costs for the five years; part 2 includes part 1 with the proportion of the cost of equipment, buildings, stock, tools, etc., added; part 3 includes parts 1 and 2 with interest at 6 per cent added.

TABLE X.—Cost for five years of bringing a lemon grove of 163 acres into bearing.

STATEMENT NO. 1		
Year Ended September 30, 1905:		
Land and Water, 163 acres at \$450 per acre..		\$73,350.00
Plowing and Levelling....	\$ 1,017.36	
Fluming.....	4,310.31	
12,603 trees at \$1.....	12,608.00	
Planting.....	957.04	
Cultivation and Irrigation.....	107.53	
Fertilizing.....	71.40	
Water Dues..	87.17	
	<u>\$19,158.81</u>	
Management.....	113.80	19,272.61
Year Ended September 30, 1906:		
Cultivation and Irrigation.....	\$1,238.72	
Fertilizing.....	1,361.79	
Water Dues.....	804.65	
Taxes.....	369.92	
Other Expenses.....	953.75	
	<u>\$4,728.83</u>	
Management.....	788.03	5,516.86
Year Ended September 30, 1907:		
Cultivation and Irrigation.....	\$1,548.05	
Fertilizing.....	734.64	
Water Dues.....	1,036.41	
Taxes.....	794.40	
Other Expenses.....	536.78	
	<u>\$4,650.28</u>	
Management.....	1,777.29	6,427.57
Year Ended September 30, 1908:		
Cultivation and Irrigation.....	\$1,967.99	
Pruning.....	205.15	
Fertilizing.....	2,522.25	
Water Dues.....	978.00	
Taxes.....	773.51	
Other Expenses.....	309.42	
	<u>\$6,756.32</u>	
Management.....	1,670.91	8,427.23
		<u>Carried forward</u>
		\$112,994.27

TABLE X.—Continued—Cost for five years of bringing a lemon grove of 163 acres into bearing.

Year Ended September 30, 1909:	Brought forward	\$112,994.27
Cultivation and Irrigation.....	\$2,493.20	
Pruning Lemons.....	125.35	
Fumigation (90 acres).....	1,423.19	
Fertilizing.....	411.18	
Water Dues.....	1,556.70	
Taxes.....	1,042.52	
Other Expenses.....	509.55	
	<u>\$7,561.69</u>	
Management.....	2,521.43	10,083.12
		<u>TOTAL.....</u>
		\$123,077.39
Less, crop returns 1908.....	\$1,069.50	
1909.....	4,431.06	
	<u>5,500.56</u>	
		\$117,576.83
STATEMENT NO. 2		
Cost of land and water: \$450 per acre.....		\$73,350.00
First Year:		
Proportion of cost of equipment, buildings, stock, tools, machinery, etc.:		
\$82 per acre.....		13,366.00
Cost of planting, care, etc.....		19,272.61
Second Year:		
Cost of Care, etc.....		5,516.86
Third Year:		
Cost of Care, etc.....		6,427.57
Fourth Year:		
Cost of Care, etc.....		8,427.23
Fifth Year:		
Cost of Care, etc.....		10,083.12
		<u>\$136,443.39</u>
Less:		
Crop returns, fourth year, \$1,069.50		
fifth year, 4,431.06		5,500.56
		<u>\$130,942.83</u>
AVERAGE \$803.33 PER ACRE		
STATEMENT NO. 3		
Cost as per Statement No. 2 plus—		\$130,942.83
Interest at 6% per annum:		
5 years on \$86,716.00		\$26,014.80
4½	19,272.61	5,203.60
3½	5,516.86	1,158.50
2½	6,427.57	964.10
1½	7,357.73	662.20
½ year	5,652.06	169.56
		<u>\$4,172.76</u>
		\$165,115.59
AVERAGE \$1,012.98 PER ACRE		

The figures given above are below the average cost of bringing lemon groves into bearing at the present time. The grove was developed by a large company. The land is in a solid block. The cultivation, the fluming of the land, the distribution of water, and all of the handling operations were systematized on a thorough business basis, thus reducing the operating costs to a minimum.

The data following is a statement of the cost of planting a ten acre lemon grove in Los Angeles County and of caring for it from May 6, 1910, to September 21, 1911; bare land and water \$300.00 per acre; preparing the ground and planting, \$20.00 per acre; irrigating flumes \$25.00 per acre; other expenses including care of trees, water, etc., making a total of \$5,100.00 or a cost at one year and four months of \$510.00 per acre. The cost of preparing the land for planting is below the average because it is naturally a level piece. The care of the trees the first year after planting cost \$40.20 per acre.

The average cost of bringing 150 acres of lemons on a large place in Ventura County up to three and four years old in the spring of 1911 is \$341.00 per acre, not including the cost of the land and water.

The statement following shows the cost of bringing a grove of 152 acres in Los Angeles County on the Leffingwell Rancho, Inc., into bearing during the first five years from 1907 to 1911 inclusive.

TABLE XI.—Cost for five years of bringing a lemon grove of 152 acres into bearing.

	Total	Per Acre
152 acres with water stock.....	\$ 72,177.36	\$474.82
Trees planted	11,466.70	75.43
Pipe lines	2,144.25	14.11
Labor and team work	17,577.64	115.64
Material for cover crop	741.46	4.88
Fertilizer, commercial.....	784.19	5.16
Material for spraying	125.75	.83
Assessment on water stock.....	9,917.35	65.24
Paid for pumping water actually used	1,760.33	11.58
Sundries, blacksmithing work, and repairs of all kinds.....	7,669.43	50.45
Administration, including foreman's salary	8,214.19	54.04
Total.....	\$132,578.65	\$872.18

This orchard is in a solid block and the operating expenses are more economically handled than on a small place. The bare land adapted to citrus culture in this region is valued now at a price equal to the entire cost of bringing this grove into bearing, the residential feature entering somewhat into the present land values.

THE INCREASE IN EXPENSE OF CARING FOR LEMON GROVES

Since the above grove was planted, land values, labor, taxes and other expenses have increased. To show the increased cost of some of these items the statement following prepared by the Riverside Trust Company, Limited, shows the increase in taxes, in the cost of water, fumigation, and fertilization on a lemon grove of 303 acres, twenty years of age.

The statement covers a period from 1901 to 1912, or the period from ten years to twenty years of age.

TABLE XII.—Increase in taxes and cost of water, fumigation and fertilization on a bearing lemon grove of 303 acres in California from 1901 to 1912.

	TAXES		WATER		FUMIGATION		FERTILIZER	
	Total	Per Acre	Total	Per Acre	Total	Per Acre	Total	Per Acre
1901	\$2,192.32	\$7.24	\$1,231.85	\$4.07	.....	.....	\$4,340.55	\$14.33
1902	2,352.26	7.76	1,688.60	5.57	\$ 498.64	\$1.65	7,385.59	24.37
1903	2,014.45	6.64	1,779.55	5.87	341.25	1.13	13,561.84	44.76
1904	2,995.59	9.88	2,076.55	6.85	2,387.53	7.88	9,160.04	30.23
1905	2,923.94	9.66	1,634.90	5.39	635.89	2.08	14,091.13	46.51
1906	2,835.72	9.35	1,546.33	5.10	1,574.65	5.20	12,263.72	40.47
1907	2,808.15	9.26	1,984.67	6.55	9,043.53	29.85	18,097.85	59.72
1908	4,543.18	14.99	1,715.00	5.66	5,210.53	17.20	21,683.88	71.56
1909	4,469.34	14.75	2,870.45	9.47	7,827.45	25.98	19,095.13	63.35
1910	4,913.98	16.21	4,011.46	13.24	2,541.79	8.39	31,139.14	102.77
1911	4,481.62	14.79	.....	.....	.....	.....	.....	.....
1912	5,073.80	16.74	.....	.....	.....	.....	.....	.....

WAGES PAID IN THE LEMON INDUSTRY

There are about 25,000 people employed in the citrus industry in California. The labor is principally American labor with some Italians, Mexicans and Oriental labor. The labor on the ranches includes all of these nationalities. In the packing-houses where about 5,000 are employed approximately one-half the labor are American women who are paid the same rate of wages as the men for grading and packing the fruit. There is practically no boy or girl labor employed in the citrus industry. In some sections where American labor is impossible to secure, Oriental labor is employed in the groves and packing-houses, there being approximately 3,500 Orientals employed in the entire industry out of a total of 25,000. The Oriental labor is not desired by the growers or packers and is used only where American labor cannot be secured. The Oriental labor is paid from 20 to 25 cents per day less than American labor for the same class of work. The Mexican labor is usually paid the same rate of wages as the Oriental and the Italian labor the same as the American. Most of the Mexicans employed are citizens of the United States.

Labor on the ranches is paid at a daily rate of wage including the picking of the fruit. Piece-paid labor puts a premium on careless work and has almost entirely disappeared from the industry. The packing-house labor is usually paid by the day except the packers who are generally though not always, paid by the box. The box-makers are paid by piece work, the box labelers also, but the ordinary packing-house labor receives a daily rate of wage.

WAGES PAID IN THE LEMON GROVES

The table following shows the range in wages paid to the laborers in the groves in California with a comparison of the wages paid in the lemon groves in Sicily, in 1911.

TABLE XIII.—Comparison of the wages paid laborers working in lemon groves in California and in Italy, 1911

	CALIFORNIA	ITALY
General Superintendent..	\$75.00 to \$150 per month	
Custodian or Superintendent..		3 lire to 4 lire with privileges (\$0.579-\$0.772)
Foremen	\$55.00 to \$150 per month	
Sub-foreman	\$50 to \$100 per month	
Teamsters	\$56.50 to \$65 per month	
Irrigators	\$1.80 to \$2.25	
Ordinary laborers		2.00 to 3 lire (\$0.386-\$0.579)
Pruning foreman	\$2.00 to \$4.50	
Pruners	\$1.75 to \$3.00	2.50 to 4.00 lire (\$0.48¼-\$0.772)
Picking foreman	\$2.25 to \$3.50	
Pickers	\$1.50 to \$2.50	2.40 to 3.00 lire (\$0.463-\$0.579)
Carriers (Men)		2.40 to 3.00 lire (\$0.463-\$0.579)
Carriers (Boys)		1.50 to 1.75 lire (\$0.29-\$0.338)
Stemmers (Women)		1.50 to 1.75 lire (\$0.29-\$0.338)
Boy helpers		1.50 to 1.75 lire (\$0.29-\$0.338)
Girl helpers		1.00 to 1.50 lire (\$0.193-\$0.29)
Women sorters or other labor		1.00 to 1.75 lire (\$0.193 to \$0.338)
Sprayers	\$2.00 to \$3.00	
Fumigators	\$2.10 to 50 cents per hour	
Other grove labor	\$1.75 to \$2.50	

(Unless otherwise stated all labor paid by the day.)

WAGES PAID IN THE PACKING-HOUSES

The table following shows the range of wages paid the labor in the packing-houses in California with a comparison of the wages paid in the packing-houses in Sicily, in 1911.

TABLE XIV.—Comparison of the wages paid laborers working in the lemon packing-houses in California and in Italy, 1911

	CALIFORNIA	ITALY
Manager	\$500 to \$3,000 per year	
Foremen	\$75 to \$150 per month	4 to 5 lire (\$0.772 to \$0.965)
Sub-foremen	\$60.00 to \$85.00 per month	
Forewomen		2 lire (\$0.386)
Graders (men)	\$1.75 to \$3.00	
Graders (women)		1.50 lire (\$0.29—)
Wrappers (women)		1.50 lire (\$0.29—)
Lemon packers	4 to 8 cents per box; \$2.00 to \$4.50 per day	3.50 to 4.00 lire \$0.676— to \$0.772)
Pressmen	\$2.00 to \$3.15	3.50 to 4.00 lire \$0.676— to \$0.772)
Helper to Pressman		2 lire (\$0.386)
Car loaders	\$2.00 to \$3.15	
Truckmen	\$1.75 to \$3.00	
Porter to carry boxes		3 lire (\$0.579)
Box makers	\$2.00 to \$4.50	4 lire (\$0.772)
Other packing house labor	\$1.75 to \$3.00	
Boy helpers		1.20 to 2.00 lire (\$0.232— to \$0.386)
Girl helpers		1.20 lire (\$0.232—)
Clerical help	\$50 to \$100 per month	\$20 to \$30 per month

(Unless otherwise stated wages are per day)

THE SIZE OF THE LEMON GROVES IN CALIFORNIA

The lemon groves in California, owned and managed by individuals, vary in size from a few trees to groves of 40 acres or more. There are a few large groves containing from 150 to 1,000 acres owned and managed by growers organized into corporations. The average sized grove contains a few acres only. In the San Dimas district, for example, which is one of the largest in the State, 300 growers own 1,180 acres of lemons. The unit grove contains 3.94 acres. In the Hollywood-Cahuenga district 35 growers own 344 acres, making the unit size 9.83 acres. In the Pomona district 75 growers own 200 acres, making the unit size 2.67 acres; at Santa Barbara 70 growers own 407 acres making the unit size 7.96 acres; at Tustin 55 growers own 580 acres making the unit size 10.50 acres; in the Whittier district 99 growers own 345 acres making the unit size 3.5 acres. In a large district in San Diego County 100 growers own 1,000 acres. In the Cucamonga district 49 growers own 170 acres making the unit holding 3.5 acres.

In several of the districts such as Pomona, Claremont, San Dimas, Covina and Ontario, a row of lemon trees is often grown on the outside around the orange grove next to the road, these trees being the only lemons the grower has on the place. The newer plantings of the last five years are usually in pieces of 5, 10, 15 or more acres. There are three corporations in the State that have between 500 and 1,000 acres of lemons. There are probably 2,500 to 3,000 growers of lemons in the State, practically all of whom live on their own places or manage the properties through a resident foreman. The leasing system does not apply to the California citrus industry.

THE EQUIPMENT AND INVESTMENT ON A CALIFORNIA LEMON RANCH

In addition to the land the equipment and investment on a lemon ranch may consist in a barn for the stock, sheds for tools, blacksmith shop and equipment, dormitories for the labor on the larger places, horses and mules, harness, orchard machinery, hand tools for tillage and other grove care, equipment for fumigation, spraying, sulphuring and frost protection. The investment in addition, includes the water stock, or a pumping plant or both, and the stock in the association that packs and handles the fruit. On a few of the larger places there may be a packing-house but the fruit is usually packed in a co-operative packing-house.

On some of the smaller places the grower hires all of the work done, the cultivation and other orchard care, including the pruning, fumigation, spraying and fertilizing. Under these conditions the equipment on the place may be small though it is proportionally higher for each item on the smaller places than on the larger places. On other places the grower contracts for the pruning, fumigation, spraying and picking and takes care of the land and other tree care. The cost of the equipment on seventy ranches, leaving out the cost of dormitories and water stock, varies from \$16.94 to \$199.00 per acre. The water stock may vary from \$50.00 to \$600.00 per acre, though generally the acre value is about \$250.00. On one of the larger ranches containing 300 acres the barns, sheds, packing-house,

blacksmith shop and dormitories are valued at \$16,551.65, the horses and mules, \$7,122.00; harness, \$318.50; farm machinery, \$2,393.50, small tools, \$123.05; equipment in blacksmith shop, \$687.00; fumigation and sulphuring equipment, \$1,767.64; spraying equipment, \$1,405.25, frost protection equipment \$1,241.28, making a total of \$31,609.92, or at the rate of \$105.36 per acre. On a ranch of three acres, the barn cost \$200.00, the horses \$150.00, harness \$25.00, machinery \$150.00, small tools \$5.00, making a total of \$530.00, or \$176.67 per acre. These two examples are typical of the variation in the equipment on the lemon ranches in California. The average cost of equipment exclusive of dormitories and water stock on 125 lemon ranches is at the rate of about \$60.00 per acre.

THE COST OF PRODUCING LEMONS IN CALIFORNIA

The cost of producing lemons in California includes two general classes of items, first the cultural costs in the field, including fertilizing, pruning, spraying, fumigation, irrigation, other tree care, taxes, insurance chargeable to the groves, maintenance and repairs on tools and implements, forage and grain for the stock, cover crop seed and the administration and superintendence of the property, and second the cost of picking, hauling, packing and placing the fruit on the cars for shipment.

Many of the lemon growers keep accurate accounts of all expenditures on their properties. Others keep records of the cost of fertilizer, the water cost, the cost of pruning and fumigation, which are often done by contract, the cost of the forage and grain for the stock, all of which is purchased except on a few large places, and the total cost of labor. Others have a record of the cost of materials and a knowledge of the time spent in labor in the different grove operations, but have not recorded the labor expenditures daily.

On many of the smaller places of five, ten, fifteen and twenty acres all or a part of the labor of irrigation, cultivation and other grove care may be performed by the owner, while the fumigation and pruning may be done by contract or by the association of which he is a member. On other places the hand labor is performed by the owners while the team work is hired.

There are many places on which both lemons and oranges are grown, the accounts of the two not being separated. There are many places also which include bearing and non-bearing trees of both oranges and lemons, the accounts of the entire place being kept as a whole rather than segregated.

In order to determine the cost of production in the field, the following schedule was prepared covering the extent of the property, the essential items of equipment, the buildings and improvement, the operating costs both in materials and labor. This schedule has been sent to a large number of citrus fruit growers to be filled in, though the data have been secured largely from the books or memoranda or from other data furnished by the grower to special agents at the residence or place of business of the grower.

Account No.

SCHEDULE SHOWING THE CULTURAL COST OF LABOR AND MATERIALS REQUIRED IN PRODUCING LEMONS IN CALIFORNIA IN 1910

NOTE:—All information on the accompanying sheets will be treated strictly confidential.

GENERAL INFORMATION

Name of individual, firm, or corporation

Post Office Address

Length of time engaged in citrus fruit growing..... years.

Location of lands: (Give county and nearest railroad station).....

Character of soil (Describe whether clayey, sandy, heavy, light, etc.).....

Number of acres in entire ranch..... In oranges.....

In lemons..... In grape fruit.....

In other fruits..... In other crops.....

INVESTMENT AND EQUIPMENT

Investment in oranges and lemons (Charge only a fair relative proportion if other crops are grown on the same ranch):

Land Owned—Acreage..... Purchase price.....

Date Purchased..... Present Value.....

VARIETY OF TREES	No. of Acres Planted Four Years or Over	No. of Acres Planted Under Four Years
Orange:		
Washington Navel.....
Valencia.....
Other varieties.....
Lemon:		
Eureka.....
Lisbon.....
Other varieties.....
Grape Fruit.....

EQUIPMENT	Number	Date Purchased	Cost	Present Value
Horses and mules.....
Harness.....
Tools and equipment in blacksmith shop.....
Farm machinery (including all kinds of vehicles, machinery and tools used, but not automobiles).....
Small tools (including pruning tools and equipment, and all others not included in "farm machinery").....
Sulphuring equipment.....
Fumigation tents and equipment.....
Spraying machinery and equipment.....
Frost protection devices.....
Picking equipment (including boxes, if owned by grower, ladders, shears, gloves, etc.).....
Packing house equipment:				
Orange (including power, shafting, belting, trucks, sorting, washing, nailing and weighing machines, office and other equipment).....
Packing house equipment:				
Lemon (including same equipment as orange).....

Supplies on hand (itemize briefly—
fertilizers, feeds, seed, etc.)

NOTE:—If equipment is used for other crops, allowance should be made and an equitable proportion only charged to citrus trees.

BUILDINGS AND IMPROVEMENTS	Number	Year Built	Cost	Present Value
Barns				
Sheds				
Blacksmith Shop				
Houses (including dormitories for laborers)				
Packing House—Orange				
Packing House—Lemon				
Bridges				
Storm Drains				
Irrigation System				
Pumping plant (including pipe line and equipment used in furnishing water to ranch)				
Distribution System (including flumes, canals, etc.)				
Reservoirs (if private)				
Stock in association houses or packing plants				
Stock in Water Companies				
REMARKS				

Operating Costs for 12 months, beginning 19
General Expenses Cost

Administration (including salaries, office expenses, telephone, supplies, and value of owner's time, if he oversees the ranch) \$				
Maintenance and repairs on buildings and improvements				
Maintenance and repairs on equipment				
Fertilizers	On Bearing Trees	On Non-Bearing Trees		
Orange—chemical, No. tons				
—manure, No. tons				
Lemon—chemical, No. tons				
—manure, No. tons				
Grape Fruit, all fert.				
Fumigation and spraying materials, Orange				
Fumigation and spraying materials, Lemon				
Frost protection materials, Orange				
Frost protection materials, Lemon				
Incidental materials				
Forage and grain for stock				
Fixed Charges				
Depreciation on buildings and improvements				
Depreciation on equipment				
Depreciation on grove from loss of lemon trees, etc.				
Depreciation on grove from loss of orange trees, etc.				
Insurance on buildings				
Insurance on stock				
Other insurance				
Taxes on Real Estate				
Taxes on personal property chargeable to grove				
Taxes for water (cost of water)				
Interest on investment				

LABOR COSTS — LEMON GROWING

(If services of employees are devoted to other features of the ranch management, the proper apportionment should be made.)

KIND OF LABOR	Number Men	Time Engaged	Wages per Day, Month or Year	Total Cost of Labor
Superintending (not including Administration)				
Cultivating				
Pruning				
Fumigating				
Irrigating				
Spraying				
Fertilizing				
Frost protection				
Other Tree Care				
Picking				
Hauling				
Total Cost of Labor on Lemons				

NOTE:—If it is impossible to separate the labor costs as above, fill in the total and as many as possible of the separate items.

If work, such as fumigating, is done by contract, make note of this, stating whether materials were furnished by owner or included in contract price.

Dated 1911.

LABOR COSTS—ORANGE GROWING

(If services of employees are devoted to other features of the ranch management, the proper apportionment should be made.)

KIND OF LABOR	Number Men	Time Engaged	Wages per Day, Month or Year	Total Cost of Labor
Superintending (not including Administration)				
Cultivating				
Pruning				
Fumigating				
Irrigating				
Spraying				
Fertilizing				
Frost protection				
Other Tree Care				
Picking				
Hauling				
Total Cost of Labor on Oranges				

NOTE:—If it is impossible to separate the labor costs as above, fill in the total and as many as possible of the separate items.

If work, such as fumigating, is done by contract, make note of this, stating whether materials were furnished by owner or included in contract price.

Dated 1911.

CULTURAL METHODS IN THE LEMON INDUSTRY

In order that the cost of production data may be better understood a brief account of the cultural methods in the lemon industry follows. There is a wide variation in the methods of culture and in the intensity practiced by different growers and a corresponding difference in the costs of operation. This is true of all agricultural industries but the differences become more marked in the highly organized horticultural industries. In a general way it may be said that the lemon business is a high power industry. All of the operations are intensive. The trees grow, bloom and bear almost continuously. In this respect the lemon crop is different from all other tree crops which are produced at certain periods of the year after which the trees may lie dormant for a while.

THE PLOWING OF THE LEMON GROVE

In the spring of the year as soon as the ground will permit after the rains, the lemon orchards are plowed six to eight inches deep to turn under the cover crop and to put the ground in shape for irrigation and summer tillage. The plowing may be done both ways with a heavy disc, or with a four horse disc one way, and a walking plow cross-wise. The methods used in plowing vary widely depending on the character of the soil, the object being to leave the land in a finely pulverized condition five to eight inches deep. There may be a variation of 200 or 300 per cent in the cost of the initial plowing depending on the character of the soil and the cultural system of the individual grower; and the cost of the subsequent tillage will be determined to a greater or less extent by the condition of the land after the plowing is completed. On the heavier lemon soils especially, the picking must be done throughout the rainy season, the tramping of the soil by the pickers and the hauling of the fruit leaves the land in bad physical condition, thereby greatly increasing the cultural operations throughout the entire season. There is a short time after the rainy season when the land is in prime condition to plow. Before that time it is too wet, afterwards it is too dry. Few growers are in position to plow all the land exactly at the right time. Some of them, therefore, disc the land about three inches deep at the most favorable time and plow it thoroughly later. The discing holds it in shape for a month and prevents baking and drying out. If the land is plowed too wet or too dry it may take a whole season of intensive tillage to restore its physical condition.

IRRIGATING AND CULTIVATING THE LEMON GROVE

After the land is plowed and put in fine mechanical condition in the spring, the irrigation season begins and is continued until October or November or until the winter rains set in. The groves are irrigated every month or six weeks depending on the character of the soil and the cultural system of the grower. In dry seasons the groves may be irrigated every month in the year.

During the first two or three irrigations while the land is still filled with the undecomposed cover crop turned under in plowing, the irrigation furrows, three to six in number, may be made between the rows with a plow, and hand furrows are made between the trees, or other varying methods are followed. The water is run in the furrows from twenty-four to forty-eight hours. As soon as a team can safely be put on the land the furrows are filled with loose earth with a smoothing harrow, or other device

to prevent evaporation and to keep the ground from baking. It may be necessary to harrow the land both ways. After a few days the land is disced both ways or cultivated with other implements. In many of the groves the land is cultivated in three directions between irrigations and in some soils the three-way cultivation is done twice between each irrigation. After the cover crop is decomposed the irrigation furrows are made with a furrowing machine and the disc gives way to cultivators or harrows of different kinds. The aim of the cultivating is to form and preserve a mulch on the surface of the soil four to seven inches deep. The irrigation of the grove requires great skill to distribute the water uniformly, to prevent the washing of the soil at the upper end of the rows, and the accumulation of sediment at the lower end. In addition to the plowing and cultivating by horse power the lemon trees require hand work under the trees to loosen and aerate the soil, and on the heavy soils to keep the sediment away from the trees in order to protect against root rot, gum disease and other crown and root troubles.

THE COVER CROP IN THE LEMON GROVE

One of the most essential features in the lemon soils is humus. Without humus the soils bake; they will not hold water, and all of the life processes in the soil are at low ebb. Humus is supplied by cover crops of vetch, Canada peas, or other legumes. The crop is usually drilled in both ways. Vetch is sown at the rate of sixty pounds of seed per acre in August or September. The cover crop is irrigated during the fall every two weeks, the land requiring additional water on account of the growing crop. The cover crop grows during the fall and winter, prevents the washing of the soil, adds nitrogen, opens and airs the soil. It is plowed under in the spring. In addition some of the growers grow a crop of cow peas, or of buckwheat between the rows during the summer to be plowed under in September, before the winter crop is planted.

FERTILIZING THE LEMON GROVE

There is the widest variation in the practice of fertilizing both as to materials and quantity used. Cover crops and good tillage are pre-requisites to the use of commercial fertilizers. The fertilizers used consist of dried blood, tankage, bat-Guano and nitrate of soda for nitrogen; sulphate of potash for potash; and superphosphate and bone for phosphoric acid. Gypsum is also used liberally as an indirect fertilizer, stable manure in large quantities and straw for humus.

Sulphate of Potash is worth from \$48.00 to \$56.00 per ton delivered at the station; superphosphate, 17 to 18 per cent phosphoric acid, \$18.00 to \$20.00 per ton; bone containing 1 to 1½ per cent nitrogen and 27 to 30 per cent phosphoric acid, from \$30.00 to \$35.00 per ton; tankage containing 9 per cent nitrogen and 7 per cent phosphoric acid, \$50.00 per ton; low grade tankage \$37.00 per ton; blood containing 13 to 14 per cent nitrogen \$65.00 per ton; nitrate of soda \$40.00 to \$44.00 per ton; bat-Guano \$15.00 to \$30.00 per ton; stable manure about \$3.25 per ton; straw \$6.00 to \$8.00 per ton; gypsum \$5.00 per ton. Nitrate of soda is often used in the early spring at the rate of five pounds per tree; bone ten pounds per tree; the superphosphates twenty to thirty pounds per tree; high grade tankage ten pounds per tree; manure ten to fifteen cubic feet per tree; straw one to four tons per acre.

There is a wide variation in the method of applying the fertilizer, many of the growers applying the elements separately or in combination and divided into two to four applications per year.

The application of straw has come into quite general use in the last few years, the growers placing it thickly under the trees in the fall to protect the fruit from the rains and from brown rot, and to be plowed under in the spring. The use of fertilizers has almost doubled in quantity in the last five years, the growers using from \$20.00 to \$120.00 worth per acre per year.

PRUNING THE LEMON GROVE

The lemon groves are pruned once each year to remove the dead wood, to keep the trees open, to maintain a low spreading manageable form, to induce a growth of fruit-bearing wood, and, about twice a year, to remove the suckers. The forcing of the lemon trees causes a profuse growth of new wood which in two years would grow up five or six feet above the tree. At least three-fourths of the new wood has to be removed because the trees must be kept low to facilitate picking and fumigation. In Italy where fumigation is not practiced and the cost of picking is low the trees are high headed, spreading, open and of much less vigorous annual growth. The pruning is usually done by the grower but in the last two years some of the pruning is being done at cost by trained pruners under the control of the association of which the grower is a member.

THE CONTROL OF INSECT PESTS AND FUNGOUS DISEASES

The citrus groves in California are attacked by several kinds of insect pests and fungous diseases. The most destructive insects are the black scale, the red scale, the yellow scale and the purple scale. There are also the red spider, the six spotted mite, and the silver mite in restricted areas. The mealy bug has become a serious pest in sections in Ventura and San Diego Counties, and the soft brown, cottony cushion and several other scales occur in serious numbers in restricted localities. Besides these a species of thrips is becoming a prominent pest in the San Joaquin Valley. There are also occasional attacks by grasshoppers, katydids, and cut-worms.

The scale insects are combatted by fumigation with hydrocyanic acid gas generated under tents placed over the trees during the summer and fall. The work has to be done about every other year though in some sections annual fumigation is practiced. It costs from \$25.00 to \$100.00 or more per acre for the fumigation or an annual average cost of \$12.50 to \$50.00 per acre. The work is usually done for the grower by contract either by contractors who make fumigation a business, by the association of which he is a member, or by co-operative fumigation associations which perform the service at cost for the community. On the large places the growers may provide their own fumigation outfits. In some sections the scale insects are controlled on young trees by distillate oil sprays. The red spider and the mites are controlled by spraying with a mixture of lime-sulphur usually in the spring, or by application of dry sulphur to the trees usually in the spring. The mealy bug which is one of the most difficult to control is checked by sprays of carbolic acid emulsion, or by kerosene sprays. In cases of serious infestation it is necessary to spray the trees two or three times at intervals of three or four weeks.

The control of insect pests is one of the most vital features of the California citrus fruit business, one requiring a large annual expenditure of money by the industry and a large annual expenditure on the part

of the state in the support of institutions for the investigation of these pests, and for a state department charged with the execution of the state horticultural laws.

THE FUNGUS AND PHYSIOLOGICAL DISEASES OF THE LEMON

The lemon groves are also attacked by several fungus diseases, the principal ones being the brown rot and the wither tip fungus, the former fungus growing in the soil beneath the trees and attacking the fruit on the lower branches and spreading through the fruit in the curing tents, the latter attacking the fruit, foliage, blossoms and twigs in all stages of growth.

There is also the gum disease, a physiological trouble that occasions large losses in lemon trees on heavy soils sometimes causing a grove to be replanted in a period of ten years. There are also a number of physiological troubles connected with the nutrition of the trees which cause a falling off in productiveness and a serious loss in vitality in the trees. On one large grove under the highest cultural and other care known, the yield have fallen off 50,000 packed boxes in two years. In addition to the brown rot there are several fungus diseases that attack the fruit after it is picked, such as the blue mould, the cottony mould and the gray mould rots.

The brown rot fungus is held in check by spraying the trees, fruit and the soil in the fall with Bordeaux mixture, by treating the fruit with a solution of copper sulphate when it enters the packing-house and by removing the decayed fruit under rigid sanitary conditions as often as necessary during the curing period. The withertip is also treated with Bordeaux mixture, while the fruit rots are controlled by the careful handling of the fruit and by handling the diseased fruit in accordance with modern rules of sanitation.

The treatment of the fungus diseases of the lemon is still in the experimental stage. The State and Federal governments are working out the life histories and habits of many of the troubles and devising safe methods of control, but most of the troubles are imperfectly understood and have only arisen as serious factors in the last few years. The most difficult troubles in the lemon groves to meet are those connected with deranged nutrition. These troubles are common to all plants grown under artificial conditions. The study of economic plant nutrition is an almost unexplored field. The nutrition troubles in the citrus industry are of such a serious nature that the industry has requested both the State and Federal Departments of Agriculture to undertake an investigation of the troubles with a view to working out cultural methods that will keep the trees in a more healthy condition and protect the capital invested in the industry.

OTHER TREE CARE

In addition to the troubles mentioned above the lemon trees are subject to attack by gophers, squirrels and mice. On the larger places men are employed who give their entire time to controlling these difficulties and to the care of the trees in other ways. The same men may examine the individual trees for gum disease, look after trees broken by an overload of fruit, or that require individual attention in other ways. Besides this special care of individual trees, it is necessary to keep the highways next to the lemon trees oiled or sprinkled as the dust on a much travelled road may ruin the crop of the first two rows and injure it on the trees a row or two further in.

PROTECTING THE TREES AGAINST FROST

In most of the districts, especially on the lower levels there is likely to be more or less frost in December, January and February. To protect against frost many of the groves are equipped with coal baskets, oil pots or stoves for burning smudge material. Those materials are burned on frosty nights in sufficient quantity to actually raise the temperature of the air or to produce a cloud of smoke over the grove in the morning to exclude the direct sunlight and thereby prevent the rapid thawing of any fruit that may have been frozen during the preceding night. It is the rapid thawing rather than the freezing that causes most of the injury to citrus fruits subjected to ordinary frost temperatures. It is not necessary to use the frost protection devices every year. During the winter of 1910-11 covering the accounts to be submitted, there were few cold nights and almost no firing was needed. The preceding winter was much colder and some of the lemon growers were obliged to smudge fifteen or twenty times, making an expense of \$30.00 to \$40.00 per acre. In the winter of 1911-12 the frost injury was the greatest in the history of the industry, causing severe losses to the producers and heavy expense in the protection of the groves that were equipped with frost fighting devices.

FORAGE AND GRAIN FOR STOCK

The forage and grain for stock is usually purchased by the grower. A few of the larger growers may have land in which alfalfa or barley is grown, the former growing under irrigation, the latter under dry land conditions. The requirements for a horse are about six to seven tons of alfalfa per year and one and one-half to two tons of grain. The alfalfa costs from \$12.00 to \$18.00 per ton, the grain \$30.00 per ton.

The amount of land that a team of horses can plow and cultivate depends on the character of the soil and the system of tillage adopted by the grower. On the larger places that are not cultivated intensively a team may care for fifty acres or more. There are other large places on heavy soil that are very intensively cultivated where a team is used on twenty acres on the average. On the smaller places the cost of the feed for the horses is high in proportion to the acreage, because the grower may be required to keep as many horses to cultivate ten acres or less, as another grower having twice as much land. Therefore, there is the widest variation in the acre cost of forage and grain for stock.

SUMMARY OF CULTURAL OPERATIONS

It will be seen that lemon growing is a highly specialized industry. All of the operations are of the intensive type, plowing, cultivating, fertilizing, pruning and tree care. None of the operations can be neglected without serious and perhaps permanent injury to a grove. The lack of water, poor cultivation, the lack of fertilizer, or the neglect of any other operation may give the grove a set back that requires several years of the best of care to overcome. The industry may be likened to a high power machine, having high efficiency when every part is in working order and easily destroyed or injured when one of the parts is improperly adjusted.

Lemon growing requires eternal vigilance of the highest intellectual order to make it successful. Under no other circumstances can it succeed. It requires stable conditions in all of its public policy relations or capital will not seek it as an investment. It is an industry of big risks and it

COST OF MATERIALS REQUIRED IN PRODUCING LEMONS ON 143 RANCH

V AGE and GRAIN		VI TAXES		VIII MAINTENANCE and REPAIRS		VIII FROST PROTECTION		IX INSURANCE PREMIUM		X INCIDENTS
total	Per Acre	Total	Per Acre	Total	Per Acre	Total	Per Acre	Total	Per Acre	Total
1764.87	\$19.12	\$2,618.08	\$8.71	\$3,194.31	\$10.65	\$1,429.25	\$4.98	\$259.26	\$0.86	\$168.60
		296.42	7.41							
050.00	7.50	1,618.75	11.56	2,537.50	18.12	1,000.00	7.14	245.00	1.75	437.50
662.21	7.59	2,338.92	10.68	2,082.69	9.51	356.14	1.63	781.83	3.57	
75.00	15.00	26.00	5.20	R.				R.		
374.00	14.11	81.31	3.06	100.00	3.77					90.00
391.40	19.57	221.60	11.08	217.40	10.87	100.00	5.00	25.60	1.28	49.00
300.00	30.00	98.00	9.80	150.00	15.00					
150.60	30.12	28.65	5.73	42.00	8.40			2.70	0.54	
XI		56.00	5.60	R.				R.		
365.00	18.25	247.78	12.39	300.00	15.00			15.00	0.75	
320.00	22.86	121.35	8.66	100.00	7.14			20.00	1.43	
er XI		87.00	8.70	R.				R.		40.00
180.00	13.85	178.00	13.69	262.50	20.00			20.00	1.55	45.00
202.50	22.50	92.70	10.30	99.00	11.00			4.50	0.60	
648.84	13.74	829.20	6.91	255.53	2.13					750.93
38.25	9.56	48.00	12.00	4.50	1.12			1.62	0.41	
150.00	15.00	65.00	6.50	25.00	2.50	50.00	5.00			
85.00	17.00	24.00	4.80	R.				R.		9.00
55.00	11.00	15.00	3.00	R.				R.		
914.70	13.07	179.55	2.58	126.10	1.80			14.00	0.20	69.00
164.90	18.32	15.26	1.70	155.27	17.25			R.		
27.50	13.75	27.00	13.50					15.00	7.50	
86.40	19.20	17.30	3.84	28.40	6.31					
96.30	17.51	64.00	11.64	R.				11.10	2.02	16.05
150.00	18.75	20.00	2.50	5.00	0.62					24.00
834.34	18.34	360.36	3.60	1,308.51	13.09			82.54	0.83	333.20
145.00	29.00	12.80	2.56	20.00	4.00					
80.00	10.00	42.70	5.33	R.		25.00	3.13	1.05	0.13	
225.00	12.50	93.15	5.17	R.		10.00	0.56	4.50	0.25	
166.70	13.89	39.40	3.28	62.50	5.20			20.20	1.69	11.00
275.00	18.33	41.70	2.78	65.55	4.37					21.85
84.21	18.71	11.30	2.51	52.62	11.70					
100.00	20.00	7.50	1.50	17.50	3.50					
100.00	20.00	22.00	4.40	90.00	18.00			9.00	1.80	10.00
70.00	14.00	12.00	2.40	5.00	1.00					
223.00	24.78	53.00	5.89	93.00	10.33			24.00	2.67	
200.00	50.00	29.00	7.25	50.00	12.50			12.00	3.00	
250.00	27.78	40.00	4.44	130.00	14.44					
100.00	20.00	67.00	13.40	100.00	20.00			2.25	0.45	
75.72	15.14	59.01	11.80							10.12
285.00	19.00	36.00	2.40	70.00	4.66					79.00
343.75	31.25	41.25	3.75	45.85	4.17			4.60	0.41	
87.50	17.50	52.57	10.51	50.00	10.00					117.00
1,085.80	46.23	2,057.66	18.72	517.36	4.70	270.00	2.45	884.57	8.04	
630.00	21.00	72.31	2.41	200.00	6.67			15.00	0.50	20.41
500.00	41.66	32.00	2.67	100.00	8.33					
180.09	18.01	24.00	2.40							28.80
421.88	23.44	45.00	2.50	150.00	8.33			56.25	3.13	
420.00	12.00	546.00	15.60	105.00	3.00			10.50	0.30	
132.30	22.05	66.51	11.09	41.05	6.84			6.30	0.05	15.75
208.33	13.89	133.33	8.89	16.67	1.11			1.67	0.11	
180.00	25.00	57.60	8.00					0.83	0.12	
45.00	4.29	105.00	10.00	90.00	8.57					
280.00	20.00	168.11	12.01	36.40	2.60			5.60	0.40	28.00
275.00	12.50	103.40	4.70							
104.40	17.40	68.16	11.36	75.00	12.50			2.70	0.45	
22.50	9.00	50.00	20.00	27.50	11.00	10.00	4.00	6.00	2.40	
175.00	25.00	56.30	8.04	3.89	0.56			4.67	0.67	
205.15	15.78	109.07	8.39	45.70	3.52			16.53	1.27	
113.68	14.21	198.96	24.87							
19.27	19.27	11.43	11.43			10.00	10.00	0.27	0.27	1.18
87.50	12.50	28.42	4.06					8.75	1.25	
XI		27.00	10.80							5.00
54.66	27.33	25.33	12.67	6.67	3.33			0.40	0.20	
		550.26	11.46	215.00	4.48	60.00	1.25	35.00	0.73	
98.00	24.50	39.60	9.90	4.80	1.20			4.00	1.00	7.20
281.25	18.75	182.70	12.18	333.30	22.22			15.00	1.00	
85.00	13.00	62.50	12.50	16.67	3.33			0.83	0.17	8.33

Table with columns for acreage, various categories (Under XV, Under XVI, etc.), and monetary values. Includes a 'Total acres, 3,658.4' row and a summary section at the bottom right detailing costs per acre for labor and materials.

Total acres, 3,658.4

\$376,403.98
\$320,296.35
Average cost per acre. Materials... \$108.71
Labor... 92.51
Total average cost per acre. Labor and Materials... 197.15

LEMONS IN CALIFORNIA IN 1910.

TOTAL	TOTAL MATERIALS		LABOR		MATERIALS and LABOR		REMARKS	NO.
	Per Acre	Total	Per Acre	Total	Per Acre	Total		
	\$30,019.14	\$100.06	\$46,839.02	\$156.13	\$76,858.16	\$256.19	Water, forage and grain without cost	2
\$4.22	3,790.57	94.76	4,028.68	100.72	7,819.25	195.48	No cost to water, no repairs nor insurance.	3
3.13	19,958.63	142.56	18,995.00	135.68	38,953.63	278.24	No fumigation, repairs nor insurance.	6
	20,819.50	95.07	24,131.89	110.19	44,951.39	205.26		
	531.00	106.20	170.00	34.00	701.00	140.20		
3.40	2,039.31	76.95	1,496.93	56.48	3,536.24	133.43		
2.45	3,307.40	165.37	2,088.22	104.42	5,395.62	269.79		
	948.00	94.80	1,550.00	155.00	2,498.00	249.80	No fumigation nor water cost	10
	371.55	74.31	295.00	59.00	666.55	133.31		
	816.00	81.60	1,230.00	123.00	2,046.00	204.60	No repairs nor insurance.	11
	2,433.74	121.69	1,969.72	98.49	4,403.46	220.18	M. & L.—Material and Labor.	12
	1,001.35	71.52	1,367.65	116.97	2,639.00	188.49		
4.00	1,047.00	104.70	426.00	42.60	1,473.00	147.30	No fumigation nor water cost.	13
3.46	1,960.50	150.63	1,173.00	90.21	3,133.50	240.84	No repairs nor insurance.	23
	1,571.85	174.65	802.00	89.11	2,373.85	263.76		
6.26	6,506.84	54.22	6,723.16	56.03	13,230.00	110.25		
	347.69	86.92	328.88	82.22	676.57	169.14		
	920.00	92.00	452.50	45.25	1,372.50	137.25		
1.80	320.00	64.00	306.00	61.20	626.00	125.20	No repairs nor insurance.	17
	355.00	71.00	296.00	59.20	651.00	130.20		
0.99	4,646.00	66.36	3,320.40	47.43	7,966.40	113.79		
	861.51	95.72	468.10	52.02	1,329.61	147.74	No fumigation nor insurance.	35
	152.00	76.00	82.50	41.25	234.50	117.25	repairs.	36
	491.55	109.23	156.95	34.85	648.50	144.08		
2.92	739.55	134.46	313.75	57.05	1,053.30	191.51	No repairs.	37
3.00	649.00	81.12	374.00	46.75	1,023.00	127.87		
3.83	11,453.96	114.55	13,169.58	131.69	24,623.54	246.24		
	582.80	116.56	380.00	76.00	962.80	192.56		
	570.55	71.31	271.20	33.90	841.75	105.21	No fumigation nor repairs.	39
	1,483.65	82.44	675.70	37.53	2,159.35	119.97		
0.92	1,870.15	72.51	971.20	80.93	1,841.35	153.44		
1.46	1,399.10	93.26	1,425.00	95.00	2,824.10	188.26		
	415.73	92.38	238.65	53.04	654.38	145.42		
	202.50	40.50	334.00	66.80	536.50	107.30	Small amount of fertilizer.	50
2.00	412.50	82.50	250.00	50.00	662.50	132.50		
	526.00	105.20	474.10	94.82	1,000.10	200.02		
	1,009.65	112.19	739.10	82.13	1,748.75	194.32		
	396.00	99.00	340.00	85.00	736.00	184.00		
	1,010.00	112.22	605.00	67.20	1,615.00	179.42		
2.02	959.75	191.95	263.50	52.70	1,223.25	244.65		
	619.76	123.94	335.51	67.10	955.27	191.04	II under I.	45
5.26	1,703.00	113.51	1,755.00	117.00	3,458.00	230.51		
	1,026.70	93.33	475.65	43.24	1,502.35	136.57		
23.40	788.07	157.61	471.00	94.20	1,259.07	251.81		
	19,281.13	175.28	16,915.00	153.78	36,196.13	329.04		
0.68	3,281.94	109.40	2,249.54	74.98	5,531.48	184.38		
	1,254.60	104.53	796.00	66.32	2,050.60	170.85		
2.88	576.94	87.69	617.35	61.73	1,494.29	149.42		
	2,834.63	157.49	1,160.62	64.48	3,995.25	221.97		
	6,680.50	190.87	1,467.50	41.93	8,148.00	232.80	IV includes XIV.	56
2.63	559.41	93.24	456.48	76.08	1,015.89	169.32		
	993.33	66.22	1,085.00	72.33	2,078.33	138.55		
	789.23	109.62	336.30	46.71	1,125.53	156.33		
	1,017.00	96.86	1,035.00	98.55	2,052.00	195.41		
2.00	1,666.16	119.02	854.92	61.07	2,521.08	180.09		
	1,394.07	63.39	850.00	38.64	2,244.07	102.03	No fumigation.	75
	843.26	140.55	270.00	45.00	1,113.26	185.55		
	322.25	128.90	145.00	58.00	467.25	186.90	Total fertilizer under I.	76
	672.08	96.02	564.65	80.67	1,236.73	176.69		
	2,042.06	157.09	1,081.89	83.22	3,123.95	240.31		
	801.20	100.15	648.32	81.04	1,449.52	181.19		
1.18	90.04	90.04	76.60	76.60	166.64	166.64		
	422.17	60.31	484.30	69.18	906.47	129.49		
2.00	282.50	113.00	180.60	72.24	463.10	185.24		
	211.06	105.53	181.00	90.50	392.06	196.03		
	4,486.51	93.47	3,179.54	66.21	7,666.05	159.68		
1.80	575.80	143.95	190.30	47.58	766.10	191.53		
	1,375.50	91.70	1,212.25	80.80	2,587.75	172.50		
1.67	767.33	153.47	302.75	60.55	1,070.08	214.02		

must necessarily have large returns to replace the trees that die, to cover the depreciation on the buildings, the irrigation flumes and ditches, the packing-houses, to replace the mules and horses and to cover the depreciation on the tools and equipment in the groves and packing houses.

DETAILED COST OF PRODUCING LEMONS

Tables A and B show the detailed cultural cost of producing lemons on 143 lemon groves in California. Table A shows the cost of labor, including plowing and cultivation, pruning, irrigation, fumigation, fumigation labor and materials where not segregated, spraying, spreading fertilizer, other tree care, superintending, administration, and accounts not segregated. Table B shows the cost of materials, including chemical fertilizer, barnyard manure, water, fumigation, forage and grain, taxes, maintenance and repairs, frost protection, insurance chargeable to the grove, and incidentals usually including cover crop seed.

The table shows an account number which represents the grower, the total acreage, the total cost of each operation, the cost per acre, and the total cost of materials and labor per acre. In considering these accounts it should be remembered as explained on the previous page that they represent somewhat above the average condition to be found on all of the groves in California, as it is impossible to secure data from the average grower who gives his grove indifferent care.

The accounts above cover 3,658.4 acres of bearing lemons showing an average cultural cost of production of \$197.15 per acre. The minimum cost per acre is \$86.37, and the maximum \$401.45 per acre. These accounts show the widest variation in each item and in the totals. If they showed otherwise they would not be representative of the American lemon industry. Agricultural operations are never reduced to an exact similar basis on all places. The possibilities in any acre of land are seldom reached but every farmer is striving within his means and within his knowledge to produce a large amount of fruit at a low cost. No two have the same opportunities, the same soils, the same general conditions, or the same point of view in farming operations. The status of an industry can therefore not be shown by picking out a few growers whose accounts are selected to represent the whole. It would have been better if more growers could have been included in these accounts, but they could not be secured. The ones given were selected with great care to represent the variations in the industry and the results are presented with the conviction that they are fairly representative of the cultural costs of the lemon industry in California.

THE YIELD OF LEMONS IN CALIFORNIA AND THE COST PER BOX

The yield of lemons in California is widely variable, depending on the season, the locality, the cultural care of the grove and on other incidental features. The yield of lemons in the state as a whole, as in other agricultural crops, depends primarily on climatic and seasonal conditions over which the grower has no control. The conditions may be favorable for a heavy setting of the fruit in some seasons. Then we have a big lemon crop. When other conditions prevail there is a falling off in the crop. Within a given season there is the widest variation in the crop of different growers,

the extent of the crop then depending on the cultural operations of the grower.

Under these conditions it is not safe to take the yield of a single season as the criterion of an industry. It would be reasonable to take a ten year average as representative of the industry, but in the lemon industry such an average is impossible to obtain. In fact, many of the growers do not have a record of their yields. The grower, as a rule, does not handle his own fruit. It is shipped through the association. The associations change membership, the fruit is pooled under several systems of pooling, and the records of the average association are kept in such manner that it has been found impracticable to determine the five year yield of lemons in terms of packed boxes per individual grower shipping through the association.

We are able, however, to show a five year average from a number of representative associations and all of the corporations, including the largest producing sections and the heaviest individual yielding groves in the state, as well as associations in less favored localities, the associations covering the same areas from which the representative individual grower's accounts detailed in the preceding table were obtained. This record is obtained by taking the total annual acreage included in the association and the total annual number of packed boxes shipped for a five year period. Then by dividing the total number of acres for the five year period into the total number of boxes shipped, an annual average is obtained that is representative of the yields in the industry.

The lemon associations contain the better growers and their records appear in these data. The cost of producing the lemons per packed box is always highest on the worst cared for groves. Their accounts added to the cultural account would lower the cultural averages; their yields would lower the average yields. Their actual cost of producing a packed box would be higher than the averages given. The method followed of getting a representative average yield is the most accurate and less subject to error than any method that could be devised.

Under the conditions outlined, the yields from the associations are higher than the average yields of the state as a whole. The average yield of all the bearing trees in California during the last five years as determined from the records of the State Board of Equalization and the total railroad shipments from the state, is 93.0 boxes per acre. During the last ten years it has averaged 90.4 boxes per acre. To these figures should be added about ten boxes per acre to cover local shipments in less than car-load lots or by boat and which do not appear in the railroad totals. The yields shown by these tables will be more than twice as high as the average yield of the whole state, but as the cost of production data are also higher than the average for the whole state, we are confident that the average cost of production in the field as determined from these figures is fairly representative of the average cost in the state as a whole.

The table following shows the average annual yield of lemons from 1906-7 to 1910-11 from all of the associations and individual growers that ship their own fruit from whom accounts could be obtained. The record covers practically every important lemon growing section in California and includes nearly every large lemon planting of bearing age in the state, the acreage in 1906-7 covering 3603.6 and in 1910-11, 6137.4. It covers not less than 700 lemon groves.

TABLE XVII.—The yield of lemons per acre 1906-07 to 1910-11, inclusive.

Association or Individual Number	1910-11		1909-10		1908-09		1907-08		1906-07	
	Account	Shipments Boxes	Acreage	Shipments Boxes	Acreage	Shipments Boxes	Acreage	Shipments Boxes	Acreage	Shipments Boxes
2	30	4,486	30	6,402	30	6,077	30	3,195	30	5,832
3	120	92,229	120	28,842	120	29,786	120	30,477	120	29,237
6	437	72,500	302	57,944	191	25,696	140	15,263	140	9,614
8	140	20,871	140	20,815	140	28,350	140	15,263	140	9,614
12	195	29,474	168	14,073	186	21,315	140	15,263	140	9,614
14	119	29,625	114	25,192	114	24,084	140	15,263	140	9,614
16	85	15,527	93	8,744	116	28,177	101	24,716	77	18,688
18	675	109,203	104	25,376	150	19,200	150	18,400	150	18,400
29	100	13,200	100	6,800	45	2,827	150	18,400	150	18,400
31	200	17,317	80	6,782	45	2,827	150	18,400	150	18,400
32	1	100	150.1	46,465	150.1	56,814	150.1	44,613	150.1	36,020
36	188.9	44,654	150.1	176,587	760	204,716	710	150,719	650	94,469
37	832	216,522	800	13,599	180	23,585	180	32,880	180	29,621
38	180	24,286	180	36,637	400	57,949	410	64,415	375	39,332
39	407	68,000	380	114,767	300	104,528	300	79,046	300	68,506
40	800	75,271	300	114,767	300	104,528	300	79,046	300	68,506
43	211	30,253	129	28,376	146	35,366	145.5	22,473	103.5	14,072
44	141.5	36,866	110	36,192	110	42,120	110	37,752	120	37,440
47	110	31,943	110	36,192	110	42,120	110	37,752	120	37,440
48	238	109,033	30	2,252	30	7,981	30	4,690	10	569
58	30	4,816	30	2,252	30	7,981	30	4,690	10	569
59	15	2,382	42	9,930	42	15,263	42	12,408	54	11,484
60	42	19,466	42	9,930	42	15,263	42	12,408	54	11,484
61	344	60,000	340	38,461	340	55,538	390	47,017	350	39,552
62	213	72,189	213	61,919	370	109,354	390	68,451	375	52,081
63	110	11,424	225	36,356	225	36,356	418	46,469	418	38,567
64	200	40,569	418	95,270	418	73,370	418	46,469	418	38,567
65	418	94,387	418	95,270	418	73,370	418	46,469	418	38,567
66	55	10,752	418	95,270	418	73,370	418	46,469	418	38,567
Totals, . . .	6,137.4	1,296,294	4,568.1	895,762	4,568.1	1,008,052	3,756.6	702,929	3,603.6	537,434
Average.		211.2		196.1		220.9		187.1		149.1
Five year average boxes per acre 196.2.										

It will be seen from the above data that the average annual yields are variable, the crop in 1906-7 for example, averaging 149.1 boxes per

acre while the crop in 1908-9 when crop conditions were unusually favorable averaged 220.9 boxes per acre. The average yield in 1911-12 was light on account of a general frost injury in December, 1911.

The average yield per acre for the five year period is 196.2 boxes. The average cost of caring for the groves is \$197.15 per acre, making the average cost of production in the field \$1.00 per packed box.

THE COST OF HANDLING THE LEMON FROM THE TREE TO THE CAR

The cost of handling the lemons from the tree to the car consists of three items, the picking, the hauling from the grove to the packing-house and the packing-house expenses. The packing-house expenses include all labor, and materials used in handling and packing the fruit, the insurance, maintenance and all other expenses connected with the packing-house, and the loading of the fruit on the cars.

The lemons are picked either by the grower or by the association of which he is a member. The associations have an exact record of the cost of picking. Many of the growers who pick the fruit also have exact records. The growers usually haul the fruit to the packing-houses and many have an exact record of the cost, while others know the amount of fruit hauled per day and can estimate the average cost per packed box. The associations and large growers who pack the fruit have an exact record of the packing-house costs. Data have been obtained on the cost of handling 1,391,711 boxes from the grove to the car in 1910-11 and are presented in the table following. The table shows an account number representing an association or individual shipper, the number of boxes shipped, the costs of picking, hauling, and packing per box, and the total cost under each account number.

TABLE XVIII.—The cost of handling lemons per packed box from the tree to the car, 1910-11.

Account	Boxes Shipped	Cost of Picking Cents	Cost of Hauling Cents	Cost of Packing Cents	Total Cents
4	31,781	28.5	1.5	59.8	89.8
6	4,149	30.	3.	50.	83.
8	72,500	25.	7.	60.	92.
10	60,627	20.	3.5	52.	75.5
11	49,200	25.	3.	60.	88.
12b	72,189	29.4	3.	67.	99.4
14	20,871	26.	5.	55.	86.
20	15,527	22.2	4.	75.	101.2
25	109,203	22.	5.	65.	92.
36	13,200	20.	2.	50.	72.
39	17,317	30.	4.5	57.	91.5
45	216,522	25.	5.	58.08	88.08
46	68,000	30.	4.	65.	99.
48	75,271	31.76	3.	66.3	101.06
51	30,253	25.	5.	68.7	98.7
52	35,866	25.	7.	63.6	95.6
56	31,943	22.2	2.5	79.	103.7
57	114,902	23.	3.	53.75	79.75
64	40,569	29.6	3.	65.8	98.4
65	94,387	21.6	2.61	53.3	77.51
66	145,460	27.8	3.5	51.	82.3
69	47,738	24.	4.	62.	90.
71	24,256	17.	2.	54.5	73.5
Total.....	1,391,711				
Average....		25.3	3.9	59.6	88.8

SUMMARY OF THE COST OF PRODUCTION

From the data presented above it will be seen that the average cost of handling the fruit from the tree to the car is \$0.888 per packed box. The cost of growing the fruit is \$1.00 per box; the cost of handling the fruit \$0.888 per box making the total cost \$1.888 per box F. O. B. cars in California. The average cost of freight is \$0.84 per box; the cost of refrigeration on about 13.9 per cent of the crop, the per cent shipped under refrigeration in 1909-10 and 1910-11, is \$0.188 per box; or \$0.026 per box on all boxes shipped. The cost of selling the fruit averages about \$0.07 per packed box making the total expense per box as follows:

TABLE XIX.—Summary of the cost of production.

	Per Box
Cost of growing.....	\$1.00
Cost of picking, hauling and packing.....	0.888
Cost of freight.....	0.84
Average cost of refrigeration.....	0.026
Cost of selling.....	0.070
	<hr/>
	\$2.824

From these data it will be seen that the average cost of placing the lemons on the cars in California is \$1.89 per box; the average transportation cost is \$0.866 per box and the average selling cost \$0.07 per box, making a general wholesale cost of California lemons in the market at \$2.824 per box, or at the rate of \$0.10 $\frac{1}{4}$ per dozen. The boxes contain 330 lemons or 27 $\frac{1}{2}$ dozen.

The cost of production given above does not include depreciation on the buildings, equipment, stock, tools, trees or other equipment used in connection with the lemon groves and does not include any interest on the investment.

The depreciation in some of the groves, due to gum disease and other troubles is from 5 to 10 per cent, that is from 5 to 10 per cent of the trees may actually die each year, a grove on heavier soil being replanted once in ten to fifteen or twenty years. The depreciation on stock is very great and it is the usual custom of lemon growers who do business on a large scale to charge off each year from 10 to 15 per cent depreciation on the stock, 20 per cent on tools and 5 per cent on buildings, making a total depreciation charge of not less than \$10.00 per acre. These charges are legitimate charges to be included in the cost of production but there is such a wide variation in the estimated depreciation by different growers that the statement has been eliminated but it is entitled to full weight in considering the cost of producing the fruit.

THE RETAIL PRICE OF LEMONS

It is a difficult matter to secure reliable data on the retail price of citrus fruits in the different markets. The retail price for a period of years cannot be obtained from the merchants who sell the lemons because they do not keep retail price records. A few merchants advertise the fruit in the newspapers and these newspaper advertisements are the only records of retail prices that are available and comparable. They do not show the sizes of the fruit or the grade. They quote the retail price of lemons.

A careful search of the newspaper files has been made in the principal cities in the country and the tables following show the variation in retail prices for a few years past.

THE RETAIL PRICE OF LEMONS IN MINNEAPOLIS, MINN.

The table following shows the range in the retail price of lemons in Minneapolis, Minn., from January 1, 1905, to December, 1910, inclusive.

TABLE XX.—Retail prices per dozen lemons, Minneapolis, Minn. From January 1, 1905, to December, 1910

Month	Week	1905	1906	1907	1908	1909	1910
Jan.	1-7	\$0.14	\$0.15	\$0.15			
	8-14	.12	.12½-.13				
	15-21	.12	.12	.15		\$0.14	
	22-28	.13	.10		\$0.12		\$0.16
	29-31					.15	
Feb.	2-7		.12	.12-.15	.12-.15		.18
	8-14	.10-.13	.15	.12-.18	.14	.14	.15
	15-21		.10	.12	.10-.15	.14	
	22-28		.13	.14	.15		.17
March	1-6	.12	.11		.12-.15		.17-.19
	7-13			.12	.10-.18	.12	.15
	14-20	.10		.16	.12-.15	.12	.15
	21-27	.12	.15	.12	.15-.20		.15
	28-31			.12-.15			
April	1-7	.10-.24			.10-.15	.12	
	8-14		.15	.13	.08-.15	.12-.14	
	15-21		.13		.10-.15		
	22-28		.12		.08-.16	.12-.15	.17
	29-30					.12	.15-.17
May	1-7		.15		.15-.18		.15-.18
	8-14		.15		.15	.12	
	15-21	.10	.14-.15		.10-.15	.12	.15-.20
	22-28	.10	.15-.18	.16	.12-.15	.12	.15-.18
	29-30				.12-.20		
June	1-7	.10		.18	.12-.18	.12-.16	.15
	8-14	.10	.17-.20			.17	
	15-21	.18		.16	.12-.20		.18-.25
	22-28	.17			.15-.20	.12-.15	
	29-30						
July	1-7	.17		.20-.22			
	8-14	.15-.17		.18-.30	.15-.20		.25-.35
	15-21	.27-.33			.15-.20	.20	
	22-28		.18		.15-.20		.20-.40
	29-31				.18-.20	.20-.25	
Aug.	2-7	.24-.31	.15-.18	.18-.25	.15-.18	.18-.22	.20-.30
	8-14				.15-.20		
	15-21		.18			.20-.22	
	22-28			.18-.20			
	29-31			.20-.25			
Sept.	1-7				.14-.20	.15-.20	
	8-14			.18-.20		.10-.20	
	15-21		.25				
	22-28						
	29-30						
Oct.	1-7	.22-.25			.14-.16		
	8-14					.18-.20	
	15-21	.20-.23					
	22-28	.22			.12-.17	.14-.20	
	29-31						

TABLE XX.—Continued—Retail prices per dozen lemons, Minneapolis, Minn. From January 1, 1905, to December, 1910.

Month	Week	1905	1906	1907	1908	1909	1910	
Nov.	1-6	\$0.19-.20				\$0.12-.17		
	7-13	.20	.10-.24	.20			.25	
	14-20	.18-.20	.20-.25	.20				
	21-27	.10	.20		.12		.20	
	28-30		.18		.15			
Dec.	1-7	.10	.15	.18	.15	.12	10-.20	
	8-14	.15-.18			.14			
	15-21	.10-.15		.20	.15		.18	
	22-28	.10	.15	.10				
		29-31	.10-.12					.14-.17

THE RETAIL PRICE OF LEMONS IN KANSAS CITY, MISSOURI

The table following shows the variation in the retail prices of lemons in Kansas City, Missouri, from January 1, 1905, to May, 1911, inclusive, as shown in the city newspapers.

TABLE XXI.—Retail prices per dozen lemons, Kansas City, Mo.

Month	Week	1905	1906	1907	1908	1909	1910	1911
Jan.	1-7			\$0.15	\$0.15	\$0.15		\$0.15
	8-14		\$0.10	.15	.10			
	15-21		.15	.15	.10	.10		.15
	22-28			.15	.15			.10
	29-31							
Feb.	2-7		.10		.10	.10	\$0.13	\$0.15
	8-14		.09		.15	.10		.15
	15-21		.10		.08	.10		.15
	22-28		.10			.10		.15
March	1-6		.12			.10		
	7-13		.12		.10	.10		
	14-20		.12		.10	.10		
	21-27		.12	.20	.10	.10	.13	
	28-31					.10		
April	1-7					.10		
	8-14			.18		.10	.10	.15
	15-21		.10	.18	.10	.10		
	22-28	.12	.10	.18	.10	.10		.15
	29-30							
May	1-7	.12		.18	.10	.10		
	8-14	.12		.18	.10	.10		
	15-21	.10	.12	.20	.10	.10		
	22-28	.10	.15	.20	.10	.10		
	29-31							
June	1-7	.10	.18	.18	.12			
	8-14	.10	.18	.18	.10	.10		
	15-21	.10	.18	.18	.12	.10	.17	
	22-28	.15	.18	.18	.12	.12		
	29-30							
July	1-7	.12	.20	.17	.12	.20	.23	
	8-14	.15	.20	.18	.12	.20	.23	
	15-21	.15	.20	.18	.12	.18	.23	
	22-28	.18	.20	.18	.12	.20	.20	
	29-31							

TABLE XXI.—Continued—Retail price per dozen lemons, Kansas City, Mo.

Month	Week	1905	1906	1907	1908	1900	1910	1911
August	2-7	\$0.18	\$0.15	\$0.18	\$0.12	\$0.12	\$0.20	.....
	8-14	.20	.15	.18	.15	.13	.20	.....
	15-21	.20	.23	.....	.15	.12	.20	.....
	22-28	.20	.20	.20	.15	.13	.13	.....
	29-31	.....	.....	.....	.....	.....	.....	.....
Sept.	1-7	.20	.25	.25	.12	.12	.10	.....
	8-14	.20	.23	.13	.15	.13	.10	.....
	15-21	.25	.25	.....	.12	.12	.10	.....
	22-28	.20	.15	.....	.12	.12	.....	.....
	29-30	.....	.....	.....	.....	.....	.....	.....
Oct.	1-7	.....	.....	.20	.12	.12	.....	.....
	8-14	.20	.....	.20	.12	.13	.....	.....
	15-21	.....	.....	.....	.10	.10	.....	.....
	22-28	.....	.....	.....	.10	.10	.....	.....
	29-31	.....	.....	.....	.....	.....	.....	.....
Nov.	1-6	.....	.17	.....	.10	.10	.....	.....
	7-13	.....	.15	.....	.10	.12	.....	.....
	14-20	.....	.15	.13	.10	.12	.....	.....
	21-27	.....	.15	.....	.10	.10	.....	.....
	28-30	.....	.....	.....	.....	.....	.....	.....
Dec.	1-7	.....	.13	.....	.....	.....	.....	.....
	8-14	.....	.15	.....	.....	.10	.15	.....
	15-21	.....	.....	.....	.10	.17	.....	.....
	22-28	.15	.15	.18	.10	.15	.15	.....
	29-31	.....	.....	.....	.....	.....	.....	.....

THE RETAIL PRICE OF LEMONS IN WASHINGTON, D. C.

The table following shows the variation in the retail price of lemons in Washington, D. C. from April, 1906, to November, 1910, inclusive, as shown by the city newspapers.

TABLE XXII.—Retail prices per dozen lemons, Washington, D. C. April, 1906, to November, 1910.

Month	Week	1906	1907	1908	1909	1910
Jan.	1-7	.....	.....	.....	.....	.....
	8-14	.....	.....	.....	\$0.20	\$0.25
	15-21	.....	.....	.....	.20	.....
	22-28	.....	\$0.25	.....	.20	.....
	29-31	.....	.....	.....	.....	.....
Feb.	2-7	.....	.25	.....	.....	.....
	8-14	.....	.20-.25	.....	.....	.....
	15-21	.....	.....	.....	.....	.16
	22-28	.....	.25	.....	.....	.....

March	1-6	.....	.25	.....	.....	.16
	7-13	.....	.25	.....	.....	.17
	14-20	.....	.20	.....	.17-.25	.....
	21-27	.....	.20-.25	.....	.....	.17
	28-31	.....	.....	.....	.....	.17-.20
April	1-7	.....	.25	.....	.....	.17
	8-14	.....	.25	\$0.16	.....	.....
	15-21	\$0.18	.25	.....	.....	.17
	22-28	.18	.25	.....	.15	.18
	29-30	.....	.....	.16	.....	.....
.....	.....	.....	.....	.18	.....

TABLE XXII.—Continued—Retail prices per dozen lemons, Washington, D. C. April, 1906, to November, 1910.

Month	Week	1906	1907	1908	1909	1910
May	1-7	.....	\$0.25	\$0.15	\$0.17-.20	\$0.15
	8-14	.....	.25	.15	.....	.18
	15-21	.....	.25	.15	.....	.15
	22-28	.22	.25	.17	.22	.....
	29-30	.....	.25	.....	.....	.....
June	1-7	.22	.25	.17	.....	.....
	8-14	.22	.25	.17	.....	.....
	15-21	.20-.25	.25	.17-.20	.....	.....
	22-28	.20-.25	.16	.18	.....	.17
	29-30	.....	.....	.....	.....	.....
July	1-7	.20	.25	.....	.....	.17
	8-14	.20-.25	.25	.....	.....	.20
	15-21	.20-.25	.25	.....	.....	.23
	22-28	.20-.25	.20-.30	.....	.....	.....
	29-31	.....	.....	.....	.....	.....
Aug.	2-7	.20-.25	.....	.15-.18	.....	.20
	8-14	.20	.....	.....	.....	.....
	15-21	.....	.....	.....	.....	.....
	22-28	.15-.25	.....	.....	.....	.....
	29-31	.15-.30	.....	.....	.....	.....
Sept.	1-7	.....	.....	.....	.....	.....
	8-14	.....	.....	.....	.....	.....
	15-21	.....	.10-.30	.....	.....	.....
	22-28	.....	.10-.30	.....	.....	.....
	29-30	.....	.....	.....	.....	.....
Oct.	1-7	.....	.25-.30	.....	.20	.....
	8-14	.....	.20-.25	.....	.....	.....
	15-21	.35	.20-.25	.....	.....	.....
	22-28	.30-.35	.20-.25	.....	.....	.....
	29-31	.....	.....	.....	.....	.....
Nov.	1-6	.30	.25	.....	.....	.....
	7-13	.....	.25	.....	.35	.....
	14-20	.25-.30	.....	.....	.15	.....
	21-27	.25-.30	.....	.....	.25-.30	.....
	28-30	.25-.30	.....	.....	.....	.22
Dec.	1-7	.23	.....	.....	.....	.....
	8-14	.....	.....	.25	.....	.....
	15-21	.....	.20	.25	.....	.....
	22-28	.....	.....	.24	.....	.....
	29-31	.....	.....	.18	.....	.....

THE RETAIL PRICE OF LEMONS IN BOSTON

The table following shows the variation in the retail price of lemons in Boston from January, 1905, to May 12, 1911.

TABLE XXIII.—Retail price per dozen lemons, Boston, Mass. From January 5, 1905, to May 12, 1911.

Month	Week	1905	1906	1907	1908	1909	1910	1911
Jan.	1-7	\$0.15-.25	\$0.20-.30	\$0.25-.35	\$0.20-.30	\$0.25-.30	\$0.20-.35	\$0.20-.30
	8-14	.25	.15-.30	.20-.35	.20-.30	.25-.30	.20-.35	.20-.35
	15-21	.20-.25	.20-.30	.25-.35	.15-.25	.20-.30	.25-.35	.20-.30
	22-28	.20-.30	.20-.30	.20-.35	.20-.30	.20-.30	.25-.35	.20-.30
	29-31	.....	.....	.....	.15-.30	.20-.30	.....	.....

TABLE XXIII.—Continued—Retail price per dozen lemons, Boston, Mass.
From January 5, 1905, to May 12, 1911.

Month	Week	1905	1906	1907	1908	1909	1910	1911
Feb.	2-7	\$0.20-.30	\$0.20-.30	\$0.20-.35	\$0.15-.30	\$0.20-.30	\$0.25-.35	\$0.20-.30
	8-14	.25	.25	.20-.30	.20-.30	.20-.30	.25-.35	.20-.35
	15-21	.20-.25	.20-.30	.20-.30	.15-.30	.20-.30	.25-.35	.20-.35
	22-28	.20-.25	.20-.30	.....	.10-.25	.20-.30	.20-.30	.20-.35
March	1-6	.25	.20-.30	.20-.30	.20-.25	.20-.30	.20-.35	.20-.35
	7-13	.20-.25	.20-.30	.20-.25	.20-.25	.20-.30	.20-.35	.20-.35
	14-20	.20-.25	.20-.25	.20-.30	.15-.25	.20-.30	.20-.35	.20-.30
	21-27	.20-.25	.30	.20-.30	.15-.25	.20-.25	.20-.35	.20-.30
	28-31	.15	.20-.30	.15-.25	.....	.....	.....	.20-.30
April	1-7	.15-.25	.20-.30	.20-.30	.20-.30	.20-.30	.20-.30	.20-.35
	8-14	.15-.25	.20-.30	.15-.25	.20-.30	.20-.30	.20-.30	.20-.35
	15-21	.15-.25	.25-.30	.....	.20-.30	.20-.30	.20-.25	.20-.35
	22-28	.15-.25	.25-.30	.10-.25	.15-.25	.20-.30	.20-.25	.20-.35
	29-30	.....	.....	.....	.....	.20-.25	.20-.25	.....
May	1-7	.15-.25	.20-.25	.10-.20	.15-.25	.20-.25	.20-.25	.20-.35
	8-14	.15-.25	.20-.25	.20-.25	.10-.25	.15-.20	.20-.25	.20-.35
	15-21	.10-.25	.20-.30	.20-.25	.10-.20	.15-.25	.20-.25	.....
	22-28	.15-.25	.20-.30	.20-.25	.15-.20	.20	.20-.25	.....
	29-31	.....	.....	.20-.25	.15-.20	.....	.....	.....
June	1-7	.20-.30	.20-.30	.20-.30	.20-.30	.20-.25	.20-.25	.....
	8-14	.15-.25	.25-.30	.20-.25	.20-.30	.15-.20	.20-.25	.....
	15-21	.15-.20	.20-.30	.20-.25	.20-.30	.20	.....	.....
	22-28	.15-.25	.20-.30	.20-.25	.20-.25	.20-.30	.25-.40	.....
	29-30	.10-.20	.25-.30	.....	.....	.....	.....	.....
July	1-7	.10-.20	.25-.30	.20-.25	.20-.25	.30-.40	.30-.40	.....
	8-14	.10-.20	.20-.30	.20-.25	.25-.30	.30-.40	.25-.45	.....
	15-21	.10-.20	.20-.25	.15-.25	.25-.30	.30-.40	.30-.40	.....
	22-28	.25-.35	.20-.25	.15-.25	.20-.30	.40	.30-.40	.....
	29-31	.....	.....	.25-.30	.25-.30	.30-.40	.30-.40	.....
Aug.	2-7	.25-.30	.20-.30	.25-.30	.20-.30	.25-.35	.30-.40	.....
	8-14	.35	.20-.30	.25-.30	.20-.30	.25-.35	.30-.40	.....
	15-21	.40	.25-.30	.25-.30	.20-.30	.25-.35	.20-.40	.....
	22-28	.35	.25-.30	.25-.30	.25-.30	.30-.40	.20-.35	.....
	29-31	.....	.35	.25-.30	.....	.....	.....	.....
Sept.	1-7	.30-.35	.35	.30-.35	.25-.30	.20-.30	.20-.35	.....
	8-14	.30-.35	.30	.25-.30	.25-.30	.20-.30	.25-.35	.....
	15-21	.30	.30	.....	.20-.30	.20-.35	.20-.35	.....
	22-28	.30-.40	.25-.40	.25	.25-.30	.25-.35	.20-.35	.....
	29-30	.30	.....	.25	.....	.....	.20-.35	.....
Oct.	1-7	.30	.25-.40	.30	.25-.30	.20-.25	.25-.35	.....
	8-14	.25-.35	.25-.40	.30	.20-.30	.20-.30	.25-.35	.....
	15-21	.20-.30	.35-.50	.25-.30	.25-.30	.20-.25	.25-.40	.....
	22-28	.20-.30	.25-.50	.25-.30	.25-.30	.20-.30	.25-.50	.....
	29-31	.....	.....	.....	.15-.30	.20-.30	.....	.....
Nov.	1-6	.30	.20-.40	.25-.30	.20-.30	.25-.35	.30-.50	.....
	7-13	.30	.20-.40	.20-.35	.20-.30	.25-.35	.25-.50	.....
	14-20	.25-.30	.25-.50	.20-.30	.15-.25	.35-.50	.25-.40	.....
	21-27	.25-.30	.10-.25	.20-.25	.15-.25	.35-.50	.25-.40	.....
	28	.....	.20-.25	.....	.....	.....	.....	.....
Dec.	1-7	.25-.30	.25-.40	.20	.15-.20	.35-.50	.25-.35	.....
	8-14	.25-.30	.25-.40	.20-.30	.20-.30	.35-.50	.25-.35	.....
	15-21	.25-.30	.25-.40	.20-.30	.15-.30	.35-.40	.25-.35	.....
	22-28	.25-.30	.10-.20	.20-.30	.15-.25	.30-.40	.20-.35	.....
	29-31	.25-.30	.....	.....	.....	.....	.20-.35	.....

THE RETAIL PRICE OF LEMONS IN NEW YORK

The data following taken from the files of the New York Evening Sun show the variation in the retail price of lemons in New York from March, 1904 to December, 1912, inclusive.

TABLE XXIV.—Retail price per dozen lemons, New York City, March, 1904, to December, 1912, inclusive.

Month-Week-Year	1904	1905	1906	1907	1908	1909	1910	1911	1912
Jan. 1
2	\$0.20-.25	.....	.....	.....	.....	.....	.....	.....
320	.....	.....	.....	.....	.....	.....	.....
420	.....	.....	.....	.....	.....	.....	.....
520	.....	.....	.....	.....	.....	.....	.....
620	.....	.....	.....	.....	.....	.....	.....
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26

TABLE XXIV.—Continued—Retail price per dozen lemons, New York City, March, 1904, to December, 1911, inclusive.

Mo.	Wk.	Yr.	1904	1905	1906	1907	1908	1909	1910	1911	1912
July	27		\$0.25	\$0.25	\$0.25	\$0.25	\$0.25	\$0.20		\$0.25-.35	\$0.20
	28		.20	.25	.25	.25	.25	.20		.25	.20
	29		.20	.25-.30	.25	.25	.25	.20		.25	.20
	30		.20	.30	.25	.25-.30	.25	.20		.25	.20-.25
Aug.	31		.20	.30	.30	.30	.25	.20		.25	.25
	32		.20	.30	.30	.30	.25	.20		.25	.25
	33		.20	.30	.30	.20-.30	.25	.20		.25	.25
	34		.20	.30	.30	.20-.30	.25	.20		.25	.25
	35		.20	.30	.30	.20-.30	.25	.20		.25	.25
Sept.	36		.20	.30	.30	.25-.35	.25	.20	\$0.20	.25	.25
	37		.20	.30	.35	.25-.35	.25	.20	.20-.30	.25	.25
	38		.20	.30	.35	.25-.35	.25	.20	.80	.30	.30
	39		.20	.30	.35	.25-.35	.25	.20	.80	.30	.30
Oct.	40		.20	.30	.30-.40	.25-.35	.25	.20	.80	.30	.30
	41		.20	.30	.40	.25-.35	.25	.20	.80	.30	.30
	42		.20	.30	.30-.40	.25	.25	.20	.80	.30	.30
	43		.25	.30	.30-.35	.25	.25	.20	.80	.30	.30
Nov.	44		.20-.25	.30	.30-.40	.25	.25	.20	.80-.40	.30	.35
	45		.20-.25	.35	.30-.40	.25	.25	.20	.30-.40	.30	.30
	46		.20-.25	.35	.35	.25	.25	.20	.30-.40	.30	.30
	47		.25	.30	.35	.25	.25	.20	.30-.40	.30	.25
	48		.25	.30	.35	.25	.25	.20	.30-.40	.30	.25
Dec.	49		.25	.35	.35	.25	.25-.40	.20	.30-.40	.30	.30
	50		.25	.35	.35	.25	.40	.20	.30-.50	.30	.30
	51		.25	.35	.35	.25	.40	.20	.30-.50	.30	.30
	52		.25	.35	.35	.25	.40	.20	.95-.50	.30	.30

THE AVERAGE RETAIL PRICE OF LEMONS CHARGED BY A NEW YORK GROCERYMAN

The table following shows the variation in the average retail price of lemons in New York City from January, 1904, to April, 1911, inclusive, compiled from data furnished by a leading groceryman.

TABLE XXV.—Retail prices per dozen lemons, New York City, January, 1904, to April, 1911, inclusive.

Month	1904	1905	1906	1907	1908	1909	1910	1911
January	13	12	12	18	13	15	16	13
February	12	11	11	17	11	14	13	16
March	15	12½	19	16	13	13½	14½	15
April	13	12	15	22	11	.....	15	16
May	12	13	20	21	12	12	.....	.....
June	14	15	21	28	16	19	14	.....
July	16	25	20	.....	15	26	26	.....
August	18	36	19	11	15	14	24	.....
September	19½	.....	32	18	18	19	27	.....
October	24	33	47	19	24	15½	27	.....
November	17	24	26	19	19	22	27	.....
December	14	14	22	13	15	21	18	.....

THE RETAIL PRICE OF LEMONS IN BALTIMORE, MARYLAND

The data following shows the variation in the retail price of lemons in Baltimore, Maryland, from January 1, 1905, to May 12, 1911.

TABLE XXVI.—Retail prices per dozen lemons, Baltimore, Md. (From City Newspapers.) January 1, 1905, to May 20, 1911.

Month	Week	1905	1906	1907	1908	1909	1910	1911
Jan.	1-7	\$0.12-.15	\$0.15-.25	\$0.15-.20	\$0.15-.20	\$0.15-.20	\$0.20-.25	\$0.15-.20
	8-14	.12-.15	.10-.20	.15-.20	.15-.20	.15-.20	.20-.25	.15-.20
	15-21	.12-.15	.10-.20	.15-.20	.15-.20	.15-.20	.20-.25	.15-.20
	22-28	.12-.15	.10-.20	.15-.20	.15-.20	.15-.20	.20-.25	.15-.20
	29-31	.....	.....	.....	.15-.20	.15-.20	.....	.....
Feb.	2-7	.12-.15	.10-.15	.15-.20	.15-.20	.15-.20	.20-.25	.15-.20
	8-14	.12-.15	.10-.15	.15-.20	.15-.20	.15-.20	.20-.25	.15-.20
	15-21	.12-.15	.10-.15	.15-.20	.15-.20	.15-.20	.20-.25	.15-.20
	22-28	.12-.15	.10-.15	.15-.20	.15-.20	.15-.20	.20-.25	.15-.20
March	1-6	.12-.15	.10-.15	.15-.20	.15-.20	.15-.20	.15-.20	.15-.20
	7-13	.12-.15	.10-.15	.15-.20	.15-.20	.15-.20	.15-.20	.15-.20
	14-20	.12-.15	.10-.15	.15-.20	.15-.20	.15-.20	.15-.20	.15-.20
	21-27	.12-.15	.10-.15	.15-.20	.15-.20	.15-.20	.15-.20	.15-.20
	28-31	.....	.10-.15	.15-.20	.....	.....	.....	.....
April	1-7	.12-.15	.10-.15	.15-.20	.15-.20	.15-.20	.15-.20	.15-.20
	8-14	.12-.15	.10-.15	.15-.20	.15-.20	.15-.20	.15-.20	.15-.20
	15-21	.12-.15	.10-.15	.15-.20	.15-.20	.10-.15	.15-.20	.15-.20
	22-28	.10-.12	.10-.15	.20-.25	.15-.20	.10-.15	.15-.20	.15-.20
	29-30	.10-.12	.....	.....	.....	.....	.15-.20	.15-.20
May	1-7	.10-.12	.10-.15	.20-.25	.15-.20	.10-.15	.15-.20	.15-.20
	8-14	.10-.12	.10-.15	.20-.25	.15-.20	.10-.15	.15-.20	.15-.20
	15-21	.10-.12	.10-.15	.20-.25	.15-.20	.15-.15	.15-.20	.15-.20
	22-28	.10-.12	.15-.20	.20-.25	.15-.20	.10-.15	.15-.20	.....
	29-31	.....	.....	.....	.15-.20	.10-.15	.....	.....
June	1-7	.12-.15	.15-.20	.20-.25	.15-.20	.10-.15	.15-.20	.....
	8-14	.12-.15	.15-.20	.20-.25	.15-.20	.10-.15	.15-.20	.....
	15-21	.12-.15	.15-.20	.20-.25	.15-.20	.10-.15	.15-.20	.....
	22-28	.18-.20	.15-.20	.20-.25	.15-.20	.10-.15	.15-.20	.....
	29-30	.....	.15-.20	.20-.25	.....	.....	.....	.....

TABLE XXVI.—Continued—Retail prices per dozen lemons, Baltimore, Md.
(From City Newspapers.)
January 1, 1905, to May 20, 1911.

Month	Week	1905	1906	1907	1908	1909	1910	1911
July	1-7	\$0.18-.20	\$0.15-.20	\$0.20-.25	\$0.15-.20	\$0.10-.15	\$0.20-.25	
	8-14	.18-.20	.15-.20	.20-.25	.15-.20	.20-.25	.20-.25	
	15-21	.18-.20	.15-.20	.20-.25	.15-.20	.20-.25	.20-.25	
	22-28	.18-.20	.15-.20	.20-.25	.10-.15	.20-.25	.20-.25	
	29-31	.18-.20				.20-.25	.20-.25	
Aug.	2-7	.18-.20	.15-.20	.20-.25	.10-.15	.20-.25	.20-.25	
	8-14	.18-.20	.15-.20	.20-.25	.10-.15	.15-.20	.20-.25	
	15-21	.18-.20	.15-.20	.20-.25	.10-.15	.15-.20	.20-.25	
	22-28	.18-.20	.15-.20	.20-.25	.10-.15	.15-.20	.20-.25	
	29-31			.20-.25	.10-.15		.20-.25	
Sept.	1-7	.18-.20	.15-.20	.15-.20	.10-.15	.15-.20	.20-.25	
	8-14	.18-.20	.20-.30	.15-.20	.10-.15	.15-.20	.20-.25	
	15-21	.20-.40	.30-.40	.15-.20	.10-.15	.15-.20	.20-.25	
	22-28	.20-.30	.30-.40	.15-.20	.10-.15	.15-.20	.20-.25	
	29-30	.20-.30	.30-.40					
Oct.	1-7	.20-.30	.30-.40	.15-.20	.10-.15	.15-.20	.20-.25	
	8-14	.20-.30	.30-.40	.15-.20	.10-.15	.15-.20	.20-.25	
	15-21	.20-.30	.30-.40	.15-.20	.10-.15	.15-.20	.20-.25	
	22-28	.20-.30	.30-.40	.15-.20	.10-.15	.15-.20	.20-.25	
	29-31				.20-.25	.15-.20	.20-.25	
Nov.	1-6	.20-.30	.30-.40	.15-.20	.20-.25	.15-.20	.20-.25	
	7-13	.20-.30	.30-.40	.15-.20	.20-.25	.15-.20	.20-.25	
	14-20	.20-.30	.30-.40	.15-.20	.20-.25	.15-.20	.20-.25	
	21-27	.20-.30	.30-.40	.15-.20	.15-.20	.20-.25	.20-.25	
	28-30			.15-.20			.20-.25	
Dec.	1-7	.20-.30	.30-.40	.15-.20	.15-.20	.20-.25	.20-.25	
	8-14	.20-.30	.30-.40	.15-.20	.15-.20	.20-.25	.20-.25	
	15-21	.20-.25	.30-.40	.15-.20	.15-.20	.20-.25	.15-.20	
	22-28	.20-.25	.30-.40	.15-.20	.15-.20	.20-.25	.15-.20	
	29-31	.20-.25	.30-.40				.15-.20	

THE RETAIL PRICE OF LEMONS IN EASTERN CANADA AND IN THE EASTERN UNITED STATES

Lemons enter Canada duty free. Practically all of the lemons used in Eastern Canada are shipped from Italy at a cost of 30 cents per box. The lemons used in the eastern United States are principally from Italy paying a duty of 1½ cents per pound and a freight rate of 30 cents per box on lots of less than 1,000 boxes and 25 cents per box on lots of 1,000 boxes or more. There are also some California lemons used in the eastern United States.

The tables following show the retail prices of lemons in Boston, New York, Baltimore, Washington, Buffalo, Pittsburg, Cincinnati, and Indianapolis, from May 15, 1911, and in Toronto, Montreal, and St. John, Canada, for the same dates. The retail prices have been obtained by the District Managers of the California Fruit Growers' Exchange and are the average prices charged by leading grocerymen in each place, the number of grocerymen ranging from three to eight. A comparison of these tables will show that there is practically no difference in the retail price of lemons entering Canada duty free and lemons entering the United States under a duty of 1½ cents per pound.

TABLE XXVII.—Retail prices of lemons in Eastern United States and Eastern Canada.
300 size. In cents per dozen

Date	Boston	New York	Baltimore	Washington	Buffalo	Pittsburg	Cincinnati	Indianapolis	Toronto	Montreal	St. John
1911											
May 15.....	23c.	27c.	16c.	25c.	23c.	20c.	23c.	25c.	20c.	20c.	20c.
June 1.....	28	26	30	34	28	33	35	30	28	25	28
June 15.....	28	27	25	35	30	33	28	24	34	25	27
July 1.....	27	27	21	30	31	33	25	23	30	25	28
July 15.....	37	27	24	35	35	35	25	30	31	25	29
August 1.....	31	32	M	25	32	18	20	M	30	25	32
August 15.....	27	26	18	25	28	18	30	25	29	20	32
Sept. 1.....	28	24	M	30	26	23	30	20	28	30	32
Sept. 15.....	34	21	19	29	28	19	..	18	29	30	31
Oct. 1.....	35	22	23	30	34	20	..	M	28	30	30
Oct. 15.....	30	28	27	30	46	22	..	28	30	30	30
Nov. 1.....	38	27	25	35	29	26	..	28	30	30	30
Nov. 15.....	27	26	25	35	29	21	30	26	M	30	28
Dec. 1.....	28	28	19	30	25	18	25	M	20	35	28
Dec. 15.....	22	28	19	23	25	16	20	22	20	35	30
1912											
Jan. 1.....	16	25	20	23	22	16	25	18	26	30	30
Jan. 15.....	22	26	20	23	23	23	27	22	28	30	30
Feb. 1.....	25	26	19	25	21	22	27	28	30	35	30
Feb. 15.....	25	26	22	30	31	23	30	27	30	25	30
March 1.....	30	26	20	29	22	21	30	22	30	M	30
March 15.....	22	25	19	24	26	26	30	24	20	M	30
April 1.....	20	25	20	25	22	24	27	24	24	M	30
April 15.....	23	23	20	25	23	23	30	24	23	M	30
May 1.....	20	25	20	24	19	23	..	23	20	M	30
May 15.....	21	23	18	25	23	16	40	22	30	M	30
June 1.....	20	23	19	30	16	18	30	24	23	M	30
June 15.....	24	24	20	30	26	28	40	22	20	M	30
July 1.....	23	25	20	..	21	28	..	21	25	M	30
July 15.....	18	27	22	..	29	22	..	21	29	35	30
August 1.....	22	27	19	..	23	16	30	23	30	30	30
August 15.....	25	28	21	..	26	29	30	21	30	M	30
Sept. 1.....	29	27	24	..	21	29	40	32	40	20	30
Sept. 15.....	46	51	45	..	38	37	60	40	40	20	30
Oct. 1.....	31	41	35	35	36	28	40	28	30	25	30
Oct. 15.....	33	42	..	33	28	25	30	M	37	25	30
Nov. 1.....	34	34	30	35	22	30	40	30	39	25	32
Nov. 15.....	36	29	30	..	31	32	40	28	24	25	28
Dec. 1.....	34	30	28	..	27	37	30	28	30	20	..

M — Missing.

THE RETAIL PRICE OF APPLES IN NEW YORK

In order to show the wide variation that has occurred in the retail price of another fruit the retail price of apples from March, 1904, to August, 1911, as given by the New York Evening Sun is given in the table following.

TABLE XXVIII.—Retail prices per dozen apples, New York City, from files of New York Evening Sun, 1904, to September, 1911.

Month-Week-Year	1904	1905	1906	1907	1908	1909	1910	1911
Jan. 1		\$.25-.50		\$.40-.60	\$.50-.75	\$.50-1.00		\$.25-1.00
2		.25-.50	\$.50-.75	.60	.50-.75	.50-1.00		.25-1.00
3		.25-.50		.60	.50-.75	.50-1.00		.25-1.00
4		.25-.50	.50-.75	.60	.50-.75	.50-1.00		.25-1.00
Feb. 5		.25-.50		.60	.50-.75	.50-1.00		.25-1.00
6		.50		.60	.50-.75	.50-1.00		.25-1.00
7			bbl.	.60	.50-.75	.50-1.00		.25-1.00
8		.50		.60	.50-.75	.50-1.00		.25-1.00
March 9	\$.50-.75	.50		.60	.50-.75	.50-1.00		.25-1.00
10	.50-.75	.50		.60	.50-.75	.50-1.00		.25-1.00
11	.50-.60	.50		.60	.50-.75	.60-1.50		.25-1.00
12	.50-.75	.50		.60	.50-.75	.60-1.50		.25-1.00
13	.60	.50		.60	.50-.75	.60-1.50		.25-1.00
April 14	.60	.50		.60	.50-.75	.40-.75		.25-1.00
15	.60	.50		.60	.50-.75	.40-.75		.25-.75
16	.60	.50		.60	.50-.75	.40-.75		.25-.75
17	.60	.50		.60	.50-.75	.40-.75		.25-.90
May 18	.60	.50		.60-.75	.50-.75	.40-.75		.25-.90
19		.50			.50-.75	.40-.75		.25-.90
20	.60	.50		.60-.75	.50-.75	.40-.75		.75-.90
21	.50-.60	.50			.50-.75	.40-.75		.75-.90
June 22	.50	.50		.75	.50-.75	.40-.75		.75-.90
23	.50	.35-.50		.75	.50-.75	.75		.75-.90
24	.50	.35-.50			.50-.75	.75		.75-.90
25	.50	.35-.50		.60-1.00	.50-.75	.75		.75-.90
26	.50	.35-.50		.60-1.00	.50-.75	.75		.75-1.00
				1.00-1.50	.50-.75			.75-.90

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TABLE XXVIII.—Continued. Retail prices per dozen apples, New York City, from files of New York Evening Sun, 1904, to September, 1911.

Month-Week-Year	1904	1905	1906	1907	1908	1909	1910	1911
July 27	.50	.35-.50		1.00-1.50	.50-.75	.75		.75-.90
28		.35-.50		1.00-1.50	.50-.75	.75		.75-.90
29		.35-.50		1.00-1.50	.50-.75	.75		.75-.90
30		.35-.50		.50-1.50	.60	.75		.75-1.00
Aug. 31		.35-.50		.50-1.00	.60	.75		.75-1.00
32	.25-.50	.35-.50		.50-1.00	.60	.75		1.00
33	.35	.35-.50		.30-.50	.60-.75	.75		1.00
34	.50	.35-.50		.30-.50	.60-.75	.75		.40-1.00
35	.50	.35-.50		.30-.50	.50-1.00	.75	.75	.40
Sept. 36	.50	.35-.50		.30-.50	.50-1.00	.75	.50-.75	.40
37	.50	.35-.50		.30-.50	.50-1.00	.75	.50-.75	
38	.50	.35-.50					.50-.75	
39	.50	.35-.50		.30-.50	.50-.75		.50-.75	
Oct. 40	.50	.35-.50		.30-.50	.50-.75		.60-1.00	
41	.50	.35-.50		.50	.50		.60-1.00	
42	.50	.35-.50		.60	.50		.60-1.00	
43	.50	.35-.50		.50-1.00	.50		.40-1.00	
44	.40-.75			.50-1.00	.50-.75		.40-1.00	
45		.50-.60		.50-1.00	.50-.75		.40-1.00	
46	.40-.75	.50-.60		.50-1.00	.50-.75		.40-1.00	
47	.40-.75	.50-.60		.50-.75	.50-.75		.25-1.00	
48	.40-.75	.30-.60		.50-.75	.30-.50		.25-1.00	
Dec. 49	.40-.80		.40-.60	.50-.75	.30-.50		.25-1.00	
50	.60		.40-.60		.30-.50		.25-1.00	
51	.25-.60		.40-.60	.50-.75	.30-.50		.25-1.00	
52	.25-.50	.50-.75	.40-.60	.50-.75	.50-1.00		.25-1.00	

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