

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

PUBLICATIONS OF THE
DIVISION OF WATER RESOURCES
EDWARD HYATT, State Engineer

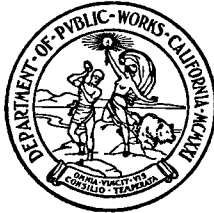
Reports on State Water Plan Prepared Pursuant to
Chapter 832, Statutes of 1929

BULLETIN No. 35

PERMISSIBLE ECONOMIC RATE
OF
IRRIGATION DEVELOPMENT
IN CALIFORNIA

A Cooperative Report by the College of Agriculture,
University of California.

1930



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LETTER OF TRANSMITTAL

MR. EDWARD HYATT,
State Engineer,
Sacramento, California.

DEAR SIR: I transmit herewith a manuscript entitled "Permissible Economic Rate of Irrigation Development in California," by David Weeks.

This is one of the reports which you requested the College of Agriculture to prepare for you dealing with certain economic aspects of the state water plan.

You will recall that I appointed a committee from our staff to confer with you in connection with outlining this work, it being understood that this committee would also review the report prior to its being forwarded to you.

This committee has carefully reviewed this manuscript and recommends its transmittal to you. It approves the manuscript as presenting a reasonable analysis of the factors governing trends in our agricultural development and our needs for agricultural land, particularly intensively cultivated irrigated land.

I trust that the report will be found to cover the ground you had in mind when referring the matter to the College of Agriculture.

Very sincerely yours,



Dean, College of Agriculture.

Berkeley, California,
October 30, 1930.

ACKNOWLEDGMENT

A work of this kind covering such a wide scope naturally could not be that of a single individual. The staffs of the Division of Water Resources of the State Department of Public Works, the Agricultural Economics and Extension Divisions of the University of California and of the Giannini Foundation have generously contributed valuable information. Especial mention should be made of the contribution of certain individuals without which the report could not have been written. These include data compiled especially for this investigation by E. E. Kaufman and Geo. A. Scott, the Cost of Production Studies by Professor R. L. Adams and L. W. Fluharty, the Studies of Fruit Production by Dr. S. W. Shear, and the Economic Studies of the Live Stock Situation by Professor E. C. Voorhies. The active cooperation of Edward Hyatt, State Engineer, and Dean C. B. Hutchison of the College of Agriculture of the University of California, represents a new step of progress in placing the research facilities of the University at the disposal of those responsible for determining state policy. The assistance rendered by the State Engineer's office made possible the analysis in Chapter VIII and the preparation of the drawings of the entire report. The assistants of the College of Agriculture who have been employed directly in the investigation should also receive recognition for important contributions. Harold Hoflich assisted in determining land requirements for the live stock industry, Frederick Church on the population problem, Lorna Finch on the index of agricultural production and the predictions of future requirements, and Edna Fisher in the land utilization analysis.

ORGANIZATION

STATE DEPARTMENT OF PUBLIC WORKS

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ORGANIZATION

UNIVERSITY OF CALIFORNIA, COLLEGE OF AGRICULTURE

Cooperating in

Water Resources Investigation

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This report was prepared by

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CHAPTER 832, STATUTES OF 1929

An act making an appropriation for work of exploration, investigation and preliminary plans in furtherance of a coordinated plan for the conservation, development, and utilization of the water resources of California including the Santa Ana river, Mojave river and all water resources of southern California.

[I object to the item of \$450,000.00 in section 1 and reduce the amount to \$390,000.00. With this reduction I approve the bill. Dated June 17, 1929. C. C. YOUNG, Governor.]

The people of the State of California do enact as follows:

SECTION 1. Out of any money in the state treasury not otherwise appropriated, the sum of four hundred fifty thousand dollars, or so much thereof as may be necessary, is hereby appropriated to be expended by the state department of public works in accordance with law in conducting work of exploration, investigation and preliminary plans in furtherance of a coordinated plan for the conservation, development and utilization of the water resources of California including the Santa Ana river and its tributaries, the Mojave river and its tributaries, and all other water resources of southern California.

SEC. 2. The department of public works, subject to the other provisions of this act, is empowered to expend any portion of the appropriation herein provided for the purposes of this act, in cooperation with the government of the United States of America or in cooperation with political subdivisions of the State of California; and for the purpose of such cooperation is hereby authorized to draw its claim upon said appropriation in favor of the United States of America or the appropriate agency thereof for the payment of the cost of such portion of said cooperative work as may be determined by the department of public works.

SEC. 3. Upon the sale of any bonds of this state hereafter authorized to be issued to be expended for any one or more of the purposes for which any part of the appropriation herein provided may have been expended, the amount so expended from the appropriation herein provided shall be returned into the general fund of the state treasury out of the proceeds first derived from the sale of said bonds.

FOREWORD

This report is one of a series of bulletins on the State Water Plan issued by the Division of Water Resources pursuant to the provisions of Chapter 832, Statutes of 1929, directing further investigations of the water resources of California. The series includes Bulletin Nos. 25 to 36, inclusive. Bulletin No. 25, "Report to Legislature of 1931 on State Water Plan," is a summary report of the entire investigation.

Prior to the studies carried out under this act, the water resources investigation had been in progress more or less continuously since 1921 under several statutory enactments. The results of the earlier work have been published as Bulletin Nos. 3, 4, 5, 6, 9, 11, 12, 13, 14, 19 and 20 of the former Division of Engineering and Irrigation, Nos. 5, 6 and 7 of the former Division of Water Rights and Nos. 22 and 24 of the Division of Water Resources.

This bulletin is one of two reports dealing with certain economic aspects of the State Water Plan prepared by the College of Agriculture, University of California.

The rate at which additional supplies of water will be needed for the irrigation of California lands is an important matter and has been the subject of an intensive study during the present investigation. Present and future construction of irrigation works should be planned so that California agriculture would be safeguarded against over-expansion. This report presents an analysis of past and future demands for California agricultural products, taking into consideration the past and probable future growth of population of both the State and United States, and an estimate of the requirements for irrigated lands in California in the next four decades.

APPENDIX A

APPENDIX A

Tables 1A to 9A give estimates of net effective immigration showing details of computation.

In each of the tables except for the decade 1920-1930 columns 2 and 6 give population by age, sex and nativity obtained by adjusting populations for the respective age groups from the U. S. Department of Commerce, Bureau of the Census, Census of Population for 1880, 1890, 1900, 1910 and 1920. This adjustment was made by distributing numbers of persons of unknown age among specified age groups.

For Tables 1A to 6A, inclusive, survivors per 100,000 given in column 3 for decades 1880 to 1890, 1890 to 1900, 1900 to 1910, were computed from Glover, James W., Department of Commerce, Bureau of the Census, U. S. Life Tables 1890, 1901, 1910 and 1901 to 1910, Table 19, page 88; Table 21, page 92; Table 23, page 96; Table 25, page 100. United States Government Printing Office, 1921.

In each of the above cited life tables column 2, giving values for *I*_x, have been used. Data for computing survivors for the age group 0-4, foreign, not being available, the same factor was used for this group as for native born. This applies also to the decade 1910 to 1920.

In Tables 7A and 8A, survivors per 100,000 for the decade 1910 to 1920 were computed from the Life Tables cited, Table 20, page 90; Table 22, page 94; Table 24, page 98; Table 26, page 102. Survivors per 100,000 for the decade 1920 to 1930, as shown in Table 9A, were computed from Foudray, Elbertie, Department of Commerce, Bureau of the Census, U. S. Abridged Life Tables 1919-1920, Table 5, page 16; Life Table 5 for California, Table 6, page 18; Life Table 6 for California. Given in Column 3 survivors per 100,000 represent the numbers living at the end of a decade out of 100,000 at the beginning of the decade. Net effective immigration given in Column 7 has been computed by subtracting the survivors in each particular age group from the total recorded census population for that age group at the end of the decade.

TABLE 1A

NET EFFECTIVE IMMIGRATION OF NATIVE-BORN PERSONS INTO CALIFORNIA, COMPUTED ACCORDING TO AGE, SEX AND NATIVITY, 1880-1890

1 Age in 1880	2 Population in 1880		3 Survivors per 100,000		4 Age in 1890	5 Survivors in 1890 from 1880 population		6 Population in 1890 ¹		7 Net effective immigration 1880 to 1890 ¹	
	Male	Female	Male	Female		Male	Female	Male	Female	Male	Female
0-4	46,975	45,637	90,612	91,563	10-14	42,565	41,787	53,426	52,088	10,861	10,301
5-9	44,393	43,438	96,777	96,909	15-19	42,962	42,095	51,416	49,603	8,454	7,508
10-14	38,585	37,916	95,845	95,891	20-24	36,982	36,358	53,105	44,817	16,123	8,459
15-19	39,209	33,531	93,988	94,139	25-29	36,844	31,566	51,966	35,285	16,122	3,719
20-24	41,082	27,638	92,679	93,003	30-34	38,074	25,704	47,093	28,415	9,019	2,711
25-29	35,696	18,235	91,825	92,463	35-39	32,778	16,859	36,217	20,214	3,439	3,355
30-34	30,998	14,005	91,066	92,056	40-44	28,229	12,892	30,240	15,935	2,011	3,043
35-39	23,348	11,976	90,099	91,276	45-49	21,036	10,831	21,296	12,926	260	1,935
40-44	22,516	9,890	89,627	89,919	50-54	20,221	8,863	18,716	10,912	1,506	2,019
45-49	18,053	7,840	86,208	87,683	55-59	15,563	6,697	15,077	7,547	486	850
50-54	17,280	6,056	81,986	84,077	60-64	14,151	5,092	15,114	6,169	963	1,077
55-59	9,031	3,487	75,012	78,351	65-69	6,774	2,732	7,708	3,721	934	989
60-64	7,389	2,629	64,832	69,390	70-74	4,790	1,824	4,224	2,386	566	562
65-69	3,195	1,594	51,518	56,646	75-79	1,646	903	1,917	1,264	271	361
70-74	1,826	1,112	35,605	40,515	80-84	650	450	825	669	175	219
75-79	796	606	20,493	24,615	85-89	163	149	260	256	97	107
80-84	366	322	9,728	12,365	90-94	35	40	84	91	49	51
85-89	80	82	3,694	4,542	95-99	8	4	15	20	12	16
90-94	38	40	1,003	1,005	100+	0	0	24	30	24	30
95-99	12	9	132	724							
100+	29	22	0	0							
Totals	381,177	265,865				343,466	244,976	408,723	292,348	65,257	47,372
Total net effective immigration of native-born persons ¹											112,629

Sources of information and bases of estimate:

For details see discussion and footnote on page 37. Items in column 2 are census figures. Column 3 was computed by method given in footnote on page 37. Column 5 = column 2 x column 3 ÷ 100,000. Items in column 6 are census figures adjusted. Column 7 = Column 6 - column 5. Figures in bold face represent net decrease for the decade.

¹ Children under 10 years of age not included.

TABLE 2A

NET EFFECTIVE IMMIGRATION OF FOREIGN-BORN PERSONS INTO CALIFORNIA, COMPUTED ACCORDING TO AGE, SEX AND NATIVITY, 1880-1890

1 Age in 1880	2 Population in 1880		3 Survivors per 100,000		4 Age in 1890	5 Survivors in 1890 from 1880 population		6 Population in 1890 ¹		7 Net effective immigration 1880 to 1890 ¹	
	Male	Female	Male	Female		Male	Female	Male	Female	Male	Female
0-4	394	420	90,612	91,563	10-14	357	385	3,250	3,132	2,893	2,747
5-9	1,244	1,131	95,595	95,855	15-19	1,202	1,096	6,417	4,924	5,215	3,828
10-14	2,130	2,178	95,753	95,320	20-24	2,040	2,098	15,733	10,285	13,693	8,187
15-19	4,098	3,518	94,902	94,909	25-29	3,864	3,339	22,097	12,201	13,203	8,862
20-24	9,445	6,247	93,373	93,621	30-34	8,819	5,848	21,725	11,231	12,906	5,383
25-29	16,840	9,379	92,076	92,250	35-39	15,508	8,652	21,522	12,157	6,016	3,505
30-34	19,780	11,414	90,109	90,790	40-44	17,824	10,362	21,045	12,835	3,221	2,473
35-39	19,638	12,265	87,806	89,392	45-49	17,243	10,964	18,093	11,527	850	563
40-44	17,898	11,246	84,884	87,171	50-54	15,192	9,803	15,523	10,695	331	892
45-49	15,253	8,367	80,287	82,678	55-59	12,246	6,918	11,305	6,781	941	137
50-54	13,291	6,332	73,893	76,287	60-64	9,821	4,830	11,803	5,762	1,982	932
55-59	6,846	3,064	66,181	68,633	65-69	4,531	2,103	5,977	2,926	1,446	823
60-64	5,956	2,382	56,986	58,518	70-74	3,393	1,394	3,063	1,717	330	323
65-69	2,247	1,231	45,497	45,968	75-79	1,022	566	1,177	849	155	283
70-74	1,083	775	31,561	32,612	80-84	335	253	496	414	161	161
75-79	530	385	18,545	20,001	85-89	98	77	133	154	35	77
80-84	229	216	9,261	10,214	90-94	21	22	46	25	33	33
85-89	75	59	3,770	4,284	95-99	3	3	15	15	12	12
90-94	30	27	1,079	1,300	100+	0	0	10	7	10	7
95-99	5	8		119							
100+	7	9		0							
Totals	136,999	80,653				113,517	68,713	179,400	107,667	65,883	38,954
Total net effective immigration of foreign-born persons ¹											104,837

Sources of information and bases of estimate:

For details see discussion and footnote on page 37. Items in column 2 are census figures. Column 3 was computed by method given in footnote on page 37. Column 5 = column 2 x column 3 ÷ 100,000. Items in column 6 are census figures adjusted. Column 7 = column 6 - column 5. Figures in bold face represent net decrease for the decade.

¹ Children under 10 years of age not included.

TABLE 3A

NET EFFECTIVE IMMIGRATION OF NATIVE-BORN PERSONS INTO CALIFORNIA, COMPUTED ACCORDING TO AGE, SEX AND NATIVITY, 1890-1900

1 Age in 1890	2 Population in 1890		3 Survivors per 100,000		4 Age in 1900	5 Survivors in 1900 from 1890 population		6 Population in 1900 ¹		7 Net effective immigration 1890 to 1900 ¹	
	Male	Female	Male	Female		Male	Female	Male	Female	Male	Female
0-4	53,934	51,707	90,612	91,563	10-14	48,871	47,344	61,778	60,436	12,907	13,092
5-9	54,831	53,028	96,777	96,909	15-19	53,064	51,389	57,642	58,257	4,578	6,868
10-14	53,426	52,083	95,845	95,891	20-24	51,206	49,948	57,185	58,027	5,979	8,079
15-19	51,416	49,603	93,968	94,139	25-29	48,315	46,606	51,578	50,511	3,263	3,815
20-24	53,105	44,817	92,679	93,003	30-34	49,217	41,681	45,846	41,720	3,371	39
25-29	51,866	35,285	91,825	92,453	35-39	47,718	32,622	41,014	35,701	6,704	3,079
30-34	47,093	28,415	91,066	92,056	40-44	42,896	28,158	34,546	28,464	3,340	2,306
35-39	36,317	20,214	90,099	91,276	45-49	32,631	18,450	24,145	20,168	6,466	1,718
40-44	30,240	15,935	89,627	89,919	50-54	26,801	14,329	19,080	16,022	7,721	1,693
45-49	21,298	12,926	86,206	87,683	55-59	18,359	11,331	14,540	12,386	3,819	1,053
50-54	18,716	10,912	81,988	84,077	60-64	15,344	9,174	13,908	10,265	1,438	1,091
55-59	15,077	7,547	75,012	78,351	65-69	11,310	5,913	11,904	7,311	594	1,398
60-64	15,114	6,169	64,832	69,390	70-74	9,799	4,281	8,387	4,765	1,412	484
65-69	7,708	3,721	51,518	56,646	75-79	3,971	2,108	4,201	2,512	230	404
70-74	4,224	2,386	35,605	40,515	80-84	1,504	967	1,680	1,250	176	283
75-79	1,917	1,264	20,493	24,615	85-89	393	311	480	383	87	127
80-84	825	669	9,728	12,365	90-94	80	83	125	128	45	45
85-89	260	256	3,694	4,542	95-99	10	12	29	23	19	11
90-94	84	91	1,003	1,005	100+	1	1	18	21	17	20
95-99	15	20	132	724							
100+	24	30	0								
Total	517,488	397,083				461,480	362,798	448,084	408,405	13,396	45,607
Total net effective immigration of native-born persons ¹											32,211

Sources of information and bases of estimate:
 For details see discussion and footnote on page 37. Items in column 2 are census figures adjusted. Column 3 was computed by method given in footnote on page 37. Column 5 = column 2 x column 3 + 100,000. Items in column 6 are census figures adjusted. Column 7 = column 6 - column 5. Figures in boldface represent net decrease for the decade.
¹Children under 10 years of age not included.

TABLE 4A

NET EFFECTIVE IMMIGRATION OF FOREIGN-BORN PERSONS INTO CALIFORNIA, COMPUTED ACCORDING TO AGE, SEX AND NATIVITY, 1890-1900

Age in 1890	2 Population in 1890		3 Survivors per 100,000		4 Age in 1900	5 Survivors in 1900 from 1890 population		6 Population in 1900 ¹		7 Net effective immigration 1890 to 1900 ¹	
	Male	Female	Male	Female		Male	Female	Male	Female	Male	Female
0-4	808	768	90,612	91,563	10-14	732	703	2,823	2,622	2,091	1,619
5-9	2,366	2,218	96,595	96,865	15-19	2,285	2,148	8,111	4,876	5,828	2,728
10-14	3,250	3,132	95,753	96,320	20-24	3,112	3,017	13,458	8,756	10,348	5,739
15-19	6,417	4,924	94,302	94,909	25-29	6,051	4,673	20,807	12,279	14,756	7,606
20-24	16,733	10,285	93,373	93,621	30-34	14,660	9,629	28,088	14,379	13,398	4,741
25-29	22,067	12,201	92,076	92,250	35-39	20,318	11,255	32,801	14,521	12,483	3,266
30-34	21,725	11,231	90,109	90,790	40-44	19,576	10,197	29,493	12,499	9,917	2,302
35-39	21,522	12,157	87,806	89,392	45-49	18,899	10,867	26,089	12,159	7,201	1,292
40-44	21,045	12,305	84,884	87,171	50-54	17,864	11,188	22,557	12,306	4,693	1,116
45-49	18,093	11,527	80,287	82,378	55-59	14,526	9,530	16,330	9,648	1,804	119
50-54	15,523	10,695	73,893	76,287	60-64	11,470	8,159	13,368	8,731	4,598	572
55-59	11,305	6,781	66,181	68,833	65-69	7,482	4,654	10,397	5,865	2,915	1,211
60-64	11,803	5,762	66,966	68,618	70-74	6,723	3,372	6,505	3,713	218	341
65-69	5,977	2,926	45,497	45,968	75-79	2,719	1,345	3,123	1,853	404	608
70-74	3,063	1,717	31,561	32,612	80-84	967	660	1,110	824	143	264
75-79	1,177	849	18,545	20,001	85-89	218	170	311	251	93	81
80-84	496	414	9,261	10,214	90-94	48	42	73	67	27	25
85-89	133	164	3,770	4,284	95-99	5	7	17	23	12	16
90-94	46	65	1,079	1,300	100+	0	1	14	15	14	14
95-99	15	7									
100+	10	7	0	0							
Total	182,574	110,653				147,682	91,517	238,485	125,378	90,803	33,861
Total net effective immigration of foreign-born persons ¹											124,664

Sources of information and bases of estimate:

For details see discussion and footnote on page 37. Items in column 2 are census figures adjusted. Column 3 was computed by method given in footnote on page 37. Column 5 = column 2 x column 3 ÷ 100,000. Items in column 6 are census figures adjusted. Column 7 = column 6 - column 5. Figures in boldface represent net decrease for the decade.

¹ Children under 10 years of age not included.

RATE OF IRRIGATION DEVELOPMENT

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TABLE 5A

NET EFFECTIVE IMMIGRATION OF NATIVE-BORN PERSONS INTO CALIFORNIA, COMPUTED ACCORDING TO AGE, SEX AND NATIVITY, 1900-1910

1 Age in 1900	2 Population in 1900		3 Survivors per 100,000		4 Age in 1910	5 Survivors in 1910 from 1900 population		6 Population in 1910 ¹		7 Net effective immi- gration 1900 to 1910 ¹	
	Male	Female	Male	Female		Male	Female	Male	Female	Male	Female
0-4	63,307	62,039	90,612	91,563	10-14	57,364	56,805	81,300	79,908	23,936	23,103
5-9	68,362	67,068	96,777	96,909	15-19	66,159	64,995	86,433	85,982	20,274	20,987
10-14	61,778	60,436	95,845	95,891	20-24	59,211	57,953	91,206	85,977	31,995	28,024
15-19	57,642	58,257	93,968	94,139	25-29	54,165	54,843	89,287	80,785	35,122	25,942
20-24	57,185	58,027	92,679	93,003	30-34	52,998	53,967	80,802	72,506	27,804	18,539
25-29	51,578	50,511	91,825	92,453	35-39	47,361	46,699	72,000	64,952	24,639	18,253
30-34	45,846	41,720	91,066	92,056	40-44	41,750	38,406	60,336	51,947	16,586	13,541
35-39	41,014	35,701	90,099	91,276	45-49	36,953	32,566	49,972	42,501	13,019	10,015
40-44	34,546	28,464	88,627	89,919	50-54	30,617	25,595	40,909	34,509	10,292	8,914
45-49	24,145	20,168	86,206	87,663	55-59	20,815	17,680	26,395	22,842	5,580	5,162
50-54	19,080	16,022	81,986	84,077	60-64	15,843	13,471	22,637	18,685	6,994	5,214
55-59	14,540	12,386	75,012	78,351	65-69	10,907	9,704	16,433	13,632	5,528	3,928
60-64	13,906	10,265	64,832	69,390	70-74	9,015	7,123	11,512	9,045	2,497	1,922
65-69	11,904	7,311	51,518	56,646	75-79	6,133	4,141	7,417	5,593	1,284	1,452
70-74	8,387	4,765	35,605	40,515	80-84	2,986	1,931	3,544	2,596	558	665
75-79	4,201	2,512	20,493	24,612	85-89	861	618	1,140	911	279	293
80-84	1,680	1,260	9,728	12,365	90-94	163	155	235	224	72	69
85-89	480	438	3,694	4,542	95-99	18	20	50	43	32	23
90-94	125	128	1,003	1,005	100+	1	1	9	6	8	6
95-99	29	23	132	724							
100+	18	21	0	0							
Totals	579,758	537,612				513,120	486,693	741,617	672,744	228,497	186,051
Total net effective immigration of native-born persons ¹											414,548

Sources of information and bases of estimate:

For details see discussion and footnote on page 37. Items in column 2 are census figures adjusted. Column 3 was computed by method given in footnote on page 37. Column 5 = column 2 x column 3 ÷ 100,000. Items in column 6 are census figures adjusted. Column 7 = column 6 - column 5. Figures in boldface represent net decrease for decade.

¹ Children under 10 years of age not included.

NET EFFECTIVE IMMIGRATION OF FOREIGN-BORN PERSONS INTO CALIFORNIA, COMPUTED ACCORDING TO AGE, SEX AND NATIVITY, 1900-1910

1 Age in 1900	2 Population in 1900		3 Survivors per 100,000		4 Age in 1910	5 Survivors in 1910 from 1900 population		6 Population in 1910 ¹		7 Net effective immigration 1900 to 1910 ¹	
	Male	Female	Male	Female		Male	Female	Male	Female	Male	Female
0-4	413	427	90,612	91,563	10-14	374	390	6,988	6,279	6,614	5,889
5-9	1,204	1,194	96,595	96,865	15-19	1,163	1,157	16,055	8,204	14,892	7,047
10-14	2,823	2,622	95,763	96,320	20-24	2,703	2,526	40,568	17,252	37,865	14,727
15-19	8,111	4,876	94,302	94,909	25-29	7,649	4,628	54,363	22,982	46,714	18,354
20-24	13,458	8,756	93,373	93,621	30-34	12,566	8,197	51,001	22,218	38,435	14,021
25-29	20,807	12,279	92,076	92,250	35-39	19,158	11,327	42,844	21,824	23,686	10,497
30-34	28,089	14,370	90,109	90,790	40-44	25,310	13,046	41,687	21,035	16,377	7,989
35-39	32,801	14,521	87,806	89,392	45-49	28,801	12,981	36,716	18,204	7,815	5,223
40-44	29,493	12,499	84,884	87,171	50-54	25,035	10,895	29,242	15,159	4,207	4,234
45-49	26,099	12,159	80,287	82,678	55-59	20,954	10,053	21,178	12,025	224	1,972
50-54	22,557	12,306	73,893	76,287	60-64	16,668	9,387	21,473	12,008	4,805	2,709
55-59	16,330	9,648	66,181	68,633	65-69	10,807	6,622	13,587	9,134	2,780	2,512
60-64	10,368	8,731	56,966	58,518	70-74	9,324	5,109	8,947	6,310	477	1,201
65-69	10,397	5,865	45,497	45,968	75-79	4,720	2,697	5,347	3,878	617	1,181
70-74	6,505	3,713	31,561	32,612	80-84	2,053	1,211	2,423	1,821	370	610
75-79	3,123	1,853	18,545	20,001	85-89	579	371	608	673	229	302
80-84	1,110	824	9,261	10,214	90-94	103	84	225	191	122	107
85-89	311	251	3,770	4,284	95-99	12	11	53	45	41	34
90-94	73	67	1,079	1,300	100+	1	1	26	25	25	24
95-99	17	23	0	119							
100+	14	15	0	0							
Totals	240,102	126,999				187,990	100,692	393,431	199,325	205,441	98,633
Total net effective immigration of foreign-born persons ¹											304,074

Sources of information and bases of estimate :

For details see discussion and footnote on page 37. Items in column 2 are census figures adjusted. Column 3 was computed by method given in footnote on page 37. Column 5=column 2 x column 3 ÷ 100,000. Items in column 6 are census figures adjusted. Column 7=column 6—column 5. Figures in boldface represent net decrease for the decade

¹ Children under 10 years of age not included.

TABLE 7A

NET EFFECTIVE IMMIGRATION OF NATIVE-BORN PERSONS INTO CALIFORNIA, COMPUTED ACCORDING TO AGE, SEX AND NATIVITY, 1910-1920

1 Age in 1910	2 Population in 1910		3 Survivors per 100,000		4 Age in 1920	5 Survivors in 1920 from 1910 population		6 Population in 1920 ¹		7 Net effective immigration 1910 to 1920 ¹	
	Male	Female	Male	Female		Male	Female	Male	Female	Male	Female
0-4	94,092	91,182	92,080	92,994	10-14	86,639	84,794	119,110	117,504	32,471	32,710
5-9	83,150	81,266	97,270	97,524	15-19	80,379	79,254	107,598	104,417	26,704	25,163
10-14	81,300	79,908	96,545	96,817	20-24	78,491	77,365	111,050	112,338	32,559	34,973
15-19	86,433	85,983	95,097	95,478	25-29	82,195	82,095	114,310	119,352	32,115	37,257
20-24	91,206	85,977	93,888	94,513	30-34	85,631	81,260	107,378	108,501	21,745	27,241
25-29	89,287	80,785	92,618	93,778	35-39	82,694	75,759	107,768	102,670	25,074	26,911
30-34	80,802	72,506	91,260	93,010	40-44	73,740	67,438	91,484	88,798	17,744	21,360
35-39	72,000	64,952	89,920	91,987	45-49	64,742	59,747	83,952	75,587	19,210	15,840
40-44	60,336	51,947	85,137	90,317	50-54	53,179	46,917	67,085	62,317	13,908	15,400
45-49	49,972	42,601	85,108	87,549	55-59	42,530	37,296	51,164	47,707	8,634	10,411
50-54	40,909	34,509	80,067	83,308	60-64	32,754	28,749	41,898	39,064	9,144	10,315
55-59	26,395	22,842	72,790	77,125	65-69	19,213	17,617	26,821	25,716	7,608	8,099
60-64	22,637	18,685	63,012	67,713	70-74	14,264	12,653	18,409	17,425	4,145	4,772
65-69	16,433	13,632	49,839	54,787	75-79	8,190	7,469	11,587	10,741	3,397	3,272
70-74	11,612	9,045	34,314	38,949	80-84	3,950	3,523	5,265	5,062	1,315	1,539
75-79	7,417	5,593	20,092	23,313	85-89	1,490	1,304	2,080	1,958	590	681
80-84	3,544	2,590	10,115	11,876	90-94	358	308	424	476	66	167
85-89	1,140	911	4,223	4,532	95-99	48	41	92	79	44	38
90-94	235	224	968	944	100+	3	2	14	12	11	10
95-99	50	43	0	0							
100+	9	6	0	0							
Totals	918,859	845,192				810,990	763,591	1,067,472	1,039,750	256,482	276,159
Total net effective immigration of native-born persons ¹											532,641

Sources of information and bases of estimates:

For details see discussion and footnote on page 37. Items in columns 2 are census figures adjusted. Column 3 was computed by method given in footnote on page 37. Column 5=column 2 x column 3 ÷ 100,000. Items in column 6 are census figures. Column 7=column 6—column 5.

¹ Children under 10 years of age not included.

TABLE 8A

NET EFFECTIVE IMMIGRATION OF FOREIGN-BORN PERSONS INTO CALIFORNIA, COMPUTED ACCORDING TO AGE, SEX AND NATIVITY, 1910-1920

1 Age in 1910	2 Population in 1910		3 Survivors per 100,000		4 Age in 1920	5 Survivors in 1920 from 1910 population		6 Population in 1920 ^a		7 Net effective immi- gration 1910 to 1920 ^a	
	Male	Female	Male	Female		Male	Female	Male	Female	Male	Female
0-4	4,298	4,087	91,973	92,940	10-14	3,953	3,799	12,183	11,162	8,230	7,363
5-9	6,343	5,967	97,064	97,461	15-19	6,156	5,815	17,439	14,548	11,283	8,733
10-14	6,988	6,279	96,317	97,036	20-24	6,730	6,093	29,891	22,231	23,161	16,138
15-19	16,066	8,204	96,062	95,232	25-29	15,289	7,880	43,478	31,133	28,189	23,253
20-24	40,568	17,252	94,729	95,028	30-34	38,430	16,594	56,880	34,680	18,450	18,286
25-29	54,363	22,682	93,571	93,830	35-39	50,868	21,564	64,172	36,328	13,304	14,704
30-34	51,001	22,218	91,511	92,555	40-44	46,672	20,564	52,152	30,661	5,480	10,097
35-39	42,844	21,824	88,932	91,009	45-49	38,102	19,862	46,762	26,523	8,660	6,661
40-44	41,687	21,035	85,778	88,565	50-54	35,758	18,630	40,666	24,926	4,908	6,298
45-49	36,716	18,204	81,287	84,349	55-59	29,845	15,355	31,752	19,017	1,907	3,662
50-54	29,242	15,129	74,397	77,548	60-64	21,755	11,732	25,134	15,768	3,379	4,039
55-59	21,178	12,025	65,653	68,516	65-69	13,904	8,239	17,877	12,045	3,973	3,906
60-64	21,473	12,086	55,636	57,656	70-74	11,925	6,974	12,398	9,319	473	2,345
65-69	13,587	9,134	43,728	45,527	75-79	5,942	4,159	7,471	5,841	1,529	1,652
70-74	8,847	6,310	30,670	32,574	80-84	2,713	2,055	3,371	2,961	658	936
75-79	5,347	3,878	18,437	19,793	85-89	986	768	1,278	1,206	292	438
80-84	2,423	1,821	9,572	10,194	90-94	232	186	328	329	66	143
85-89	808	673	4,484	4,702	95-99	32	32	81	77	45	45
90-94	225	191	1,746	2,312	100+	4	4	33	44	29	40
95-99	53	45	0	0							
100+	26	25	0	0							
Totals	404,072	209,379				329,300	170,105	463,346	298,829	134,046	128,724
Total net effective immigration of foreign-born persons ^a											262,770

Sources of information and bases of estimates:

For details see discussion and footnote on page 37. Items in column 2 are census figures adjusted. Column 3 was computed by method given in footnote on page 37. Column 5=column 2 x column 3÷100,000. Items in column 6 are census figures. Column 7=column 6-column 5.

^a Children under 10 years of age not included.

TABLE 9A
NET EFFECTIVE IMMIGRATION INTO CALIFORNIA, COMPUTED ACCORDING TO AGE AND SEX, 1920-1930

1 Age in 1920	2 Population in 1920		3 Survivors per 100,000		4 Age in 1930	5 Survivors in 1930 from 1920 population		6 Population in 1930 ¹		7 Net effective immi- gration 1920 to 1930 ¹	
	Male	Female	Male	Female		Male	Female	Male	Female	Male	Female
0-4	140,376	135,351	96,180	96,520	10-14	135,014	130,641	212,300	196,574	77,286	65,933
5-9	141,117	138,862	96,950	97,610	15-19	136,813	135,543	196,175	174,767	59,362	39,224
10-14	130,826	128,450	95,700	96,400	20-24	125,200	123,826	233,872	200,233	108,672	76,407
15-19	124,564	118,762	94,320	94,720	25-29	117,489	112,491	294,316	236,639	176,827	124,148
20-24	140,432	134,336	93,170	93,680	30-34	130,840	125,846	326,568	263,361	195,728	137,515
25-29	157,214	150,221	92,020	93,250	35-39	144,868	140,081	244,875	217,198	100,207	77,117
30-34	163,653	142,935	90,930	93,110	40-44	148,810	133,087	223,265	192,302	74,455	59,715
35-39	171,308	138,749	89,940	92,620	45-49	154,074	128,509	232,181	178,539	79,107	50,030
40-44	143,108	119,245	88,460	91,190	50-54	126,593	108,740	197,767	156,481	71,174	47,721
45-49	130,234	101,827	85,250	88,800	55-59	111,024	90,511	122,949	118,680	11,925	28,169
50-54	107,354	87,086	80,150	85,060	60-64	86,044	74,075	91,646	81,320	5,002	17,245
55-59	82,311	66,602	73,280	79,180	65-69	60,537	52,735	66,839	70,411	6,402	17,376
60-64	66,786	54,732	64,320	70,540	70-74	42,957	38,608	42,360	44,589	587	5,981
65-69	44,533	37,692	52,900	58,200	75-79	23,558	21,937	32,261	33,969	3,703	12,023
70-74	30,983	26,695	38,510	42,110	80-84	11,932	11,241	10,346	11,040	1,576	201
75-79	18,989	16,550	22,440	25,000	85-89	4,261	4,137	11,053	11,024	5,792	6,887
80-84	8,605	8,038	9,270	11,260	90+	970	1,120	7,943	8,826	6,973	7,706
85-89	3,346	3,185	5,000	6,000							
90-94	750	803	2,000	3,000							
95-99	173	156									
100+	47	56									
Unknown	6,582	2,837									
Totals	1,813,591	1,613,270				1,560,784	1,433,128	2,545,226	2,206,424	984,442	773,280
Total net effective immigration into California ¹											1,757,738

Sources of information and bases of estimates:

For details see discussion and footnote on page 37. Items in column 2 are census figures. Column 3 was computed by method given in footnote on page 37. Column 5=column 2 x column 3 ÷ 100,000. Items in column 6 are estimates of populations of given age groups based upon preliminary census returns on 1930 population and trends in the percentage age and sex distribution in California population over several decades. Column 7=column 6-column 5. Figures in boldface represent net decrease for the decade.

¹ Children under 10 years of age not included.

APPENDIX B

TABLE 1B
INDEX NUMBERS OF AGRICULTURAL PRODUCTION IN CALIFORNIA, 1909-1929

Base period 1910-1914 average production=100

Year	Index numbers	Year	Index numbers
1909.....	75	1920.....	132
1910.....	91	1921.....	131
1911.....	100	1922.....	145
1912.....	102	1923.....	160
1913.....	89	1924.....	138
1914.....	119	1925.....	168
1915.....	123	1926.....	181
1916.....	119	1927.....	189
1917.....	143	1928.....	206
1918.....	121	1929.....	180
1919.....	142		

Sources of data:

Fruits and nuts include oranges, lemons, grapefruit, grapes, olives, figs, cherries, pears, apricots, apples, peaches, prunes, plums, almonds and walnuts. For sources of data see tables 2B to 5B, inclusive.

Cereals include corn, wheat, oats, barley, rice and grain sorghum. Production for 1909-1918 from Agricultural Yearbooks, U. S. Dept. of Agr., 1909-1918; for 1913-1923 from Kaufman, E. E., California Crop Report 1925; for 1924-1928 from Kaufman, E. E., California Crop Report 1928; for 1929 from mimeographed sheet of California Crop Reporting Service, January 2, 1930. In the case of grain sorghums, production was estimated for the years 1910-1918, inclusive, on the basis of 1909 California production from the Thirteenth Census of the United States, and production for 1919-1929, inclusive, was taken from the above sources. This grain constitutes a small percentage of the total. Each cereal was converted into pounds and combined into one series.

Miscellaneous field crops include potatoes, beans (dried), cotton and sugar beets. Potato production for 1909-1918 from Agricultural Yearbooks, U. S. Dept. of Agr., 1909-1918; for 1919-1929 from Kaufman, E. E., California Crop Reports 1925, 1927, 1928, and mimeographed sheet dated January 2, 1930. Bean production for 1909-1926 was taken from Wellman, H. R., and E. R. Braun, Beans Bul. 444, California Agr. Exp. Sta., December, 1927; for 1927-1929, inclusive, from Kaufman, E. E., California Crop Report 1928, and mimeographed sheet dated January 2, 1930. Cotton production for 1909 from the Fourteenth United States Census, Statistics for California, 1920; for 1910-1918 from Agricultural Yearbooks, U. S. Dept. of Agr., 1917 and 1920; 1919-1924 from Kaufman, E. E., California Crop Reports 1925-1928 and mimeographed sheet dated January 2, 1930. Sugar beet production for 1909-1916 computed by multiplying area by average production per acre given in Agricultural Yearbooks, U. S. Dept. of Agr., 1909-1916. Production for 1917-1918 from Agricultural Yearbook, U. S. Dept. of Agr., 1920; for 1919-1929, inclusive, from Kaufman, E. E., California Crop Reports 1925-1928 and mimeographed statement dated January 2, 1930.

Vegetables include asparagus, cantaloupes, cauliflower, celery, lettuce, peas, spinach, tomatoes and watermelons. Production for 1922-1923 based upon relative acreage in vegetables determined from Table 14; for 1924-1929 from Kaufman, E. E., California Crop Reports 1926, 1928 and data not published.

Under live stock products egg production for 1922-1929 was computed as follows: California per capita consumption for 1924 was computed on the basis of 1924 egg production from U. S. Census of Agriculture, 1925, minus shipments out of California. This per capita consumption, together with population figures, forms the basis of California consumption 1922-1929. To this was added out of state shipments. Wool production for 1922-1929 was taken from Voorhies, Edwin C., Economic Aspects of the Sheep Industry, California Agr. Exp. Sta. Bul. 473: 142, 1929. Butterfat production for 1922-1924, also from Voorhies, Edwin C., Economic Aspects of the Dairy Industry, California Agr. Exp. Bul. 437: 38, 1927. Production for 1925-1929, is from McDonald, M. A., Statistical Report of California Dairy Production 1928, and unpublished report of 1929.

Meat production includes that portion of California slaughter of pork, lamb and mutton, beef and veal produced in California live stock enterprises and excludes that portion of weight gained by animals before shipment into California. See Tables 45 to 56, inclusive.

Method of calculation:

Fruit production in pounds, as given in Table 65 were converted to relatives on the basis of the 1925-1929 average production. Nuts include all kinds and walnuts and were treated in a similar manner. Cereals, likewise, were converted to pounds and the whole groups to a relative series on the same base period. In the case of livestock products separate series of relatives were prepared for eggs, wool, butterfat and all meats combined. For vegetables, production statistics being available only for the years 1924-1929, inclusive, two series of relatives were prepared on the same base period as for the other commodities; one for acreage and the other for production, and the relative acreage for 1922 and 1923 was used in lieu of relatives of production. A separate relative series was computed for each of the miscellaneous field crops. Two series of index numbers were computed, one for the years 1922-1929 based upon 32 commodities, the other from 1909-1929, based upon 26 commodities. Each of these series was computed by calculating a weighted geometric mean for each of the relatives mentioned above. Weights used were the average values of the groups for the five year period 1925-1929, inclusive. The longer series of the two is deficient in live stock production. Only wool and butterfat are represented from this group. Vegetables also are not included in the longer series. In the shorter series, however, careful analysis of California produced live stock products has been made and explained in detail in other sections of this report. The two series were combined into one index by using the more complete series from 1922-1929 and the less complete series from 1909-1921 inclusive. This resulting series was converted to the base period, 1910-1914, by dividing by the average of the index numbers for this five-year period.

TABLE 2B
ACREAGES AND TRENDS IN THE ACREAGES OF NON-BEARING FRUIT
IN THE SAN JOAQUIN VALLEY, 1919-1929

Year	Non-bearing acreage				Total non-bearing acreage	
	Sub tropical fruits		Temperate zone fruits		Acreage	Trend
	Acreage	Trend	Acreage	Trend		
1919	76,818	74,900	17,211	17,130	94,029	92,030
1920		84,543		19,420		103,963
1921		98,380		21,790		120,170
1922		107,865		24,152		132,017
1923		111,358		26,555		137,923
1924	131,159	100,800	28,908	31,250	160,066	132,050
1925	76,724	78,638	39,295	33,692	116,019	112,328
1926	42,033	51,056	39,478	31,800	81,511	82,856
1927	27,723	29,831	23,607	26,047	51,330	55,878
1928	18,211	19,228	15,023	19,240	33,234	38,468
1929	14,350	15,327	14,985	15,440	29,335	30,767

Sources of data:

Yearly Crop Reports of the California Crop Reporting Service.

TABLE 3B
ACREAGES AND TREND OF THE TOTAL ACREAGE OF THE NON-BEARING SUB-TROPICAL AND TEMPERATE ZONE FRUITS IN CALIFORNIA, 1919-1929

Year	Sub-tropical fruits acreage	Temperate fruits acreage	Total	
			Acreage	Trend
1909				240,900
1910				243,700
1911				246,650
1912				249,800
1913				253,200
1914				257,500
1915				262,050
1916				268,300
1917				276,200
1918				286,150
1919	169,287	123,189	292,476	297,600
1920				314,800
1921				337,700
1922				365,000
1923				389,050
1924	254,162	151,464	405,626	406,900
1925	203,508	206,622	410,130	405,500
1926	148,719	177,720	326,439	328,300
1927	138,798	145,668	284,464	277,500
1928	124,085	110,249	235,234	234,800
1929	111,974	82,168	194,142	194,200

Sources of data:

1924-1929, California Co-operative Crop Reporting Service, California Crop Reports; 1909-1919, Fourteenth Census of the United States, Statistics for California, 1920-71. (Numbers of trees and vines were converted to acres.)

TABLE 4B
ACREAGES AND TRENDS IN THE ACREAGES OF THE BEARING SUB-TROPICAL FRUITS IN CALIFORNIA, 1909-1929
 In thousands of acres

Year	Lemons		Oranges		Grapefruit		Walnuts		Almonds		Grapes		Olives		Figs		Total	
	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend
1909	12	11	74	72	0.5	.2	24	24	20	20	343	319	14	14	5	5	492.5	465
1910	12	12	73	73		.3	24	24	20	20	325	325	14	14	5	5	473	473
1911	13	13	81	81		.5	28	28	19	19	324	324	14	14	6	6	482	482
1912	14	14	88	88		.5	28	28	18	18	322	322	14	14	6	6	489.4	489.4
1913	16	16	96	96		.6	29	29	17	17	320	320	14	14	6	6	498.6	498.6
1914	19	18	107	103	1.0	.7	34	32	15	18	319	319	13	15	6	6	514	511.7
1915	20	20	113	110	1.0	1.0	34	34	19	19	318	318	16	16	6	6	527	524
1916	22	22	115	116	1.0	1.0	35	38	20	23	316	316	17	17	6	6	532	530
1917	23	24	124	123	2.0	1.0	45	43	23	26	316	316	18	18	6	7	562	558
1918	27	28	131	131	2.0	2.0	48	48	29	30	320	320	19	19	9	9	585	587
1919	36	34	145	146	2.0	2.0	51	52	30	32	323	327	19	20	10	10	616	623
1920	41	39	162	157	3.0	3.0	59	56	35	38	346	344	20	21	11	11	677	669
1921	42	42	172	166	4.0	4.0	62	61	41	42	363	372	23	23	11	11	718	721
1922	42	42	175	173	4.0	4.0	66	65	51	49	407	410	24	24	13	14	783	781
1923	43	43	177	177	4.0	4.0	67	67	57	56	433	452	26	26	17	16	824	841
1924	43	43	178	178	4.0	4.0	68	68	61	62	517	516	27	27	21	20	919	918
1925	44	44	181	181	4.0	4.0	70	70	68	68	598	580	28	28	23	25	1,016	1,000
1926	44	44	184	184	5.0	5.0	72	73	74	74	646	626	28	28	30	30	1,083	1,064
1927	43	44	186	186	6.0	6.0	75	76	85	82	660	652	28	29	37	36	1,120	1,111
1928	43	43	187	187	8.0	8.0	83	82	89	88	654	652	29	29	42	42	1,135	1,131
1929	43	43	191	189	9.0	9.0	88	86	92	98	640	635	29	29	47	47	1,139	1,131

Source of data:

Lemons, oranges, grapefruit, grapes, olives and figs for 1909, Dept. of Com., Bur. of Census, Fourteenth Census of the U. S., 1920: 869, 872, 873. Walnuts and almond acreages for 1909 were estimated by dividing the 1909 production by the average production per acre for the years 1924-1929; 1914-1919, California Co-operative Crop Reporting Service, California Crop Report, 1927: 39; 1919-1929, California Co-operative Crop Reporting Service, California Crop Report, 1928:45.

TABLE 5B
ACREAGES AND TRENDS IN THE ACREAGES OF THE BEARING TEMPERATE ZONE FRUITS IN CALIFORNIA, 1909-1929

In thousands of acres

Year	Cherries		Pears		Apricots		Apples		Peaches		Prunes and plums		Totals	
	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend
1909.....	5	5	14	14	37	38	35	35	79	62	72	66	242	220
1910.....		6		14		37		35		78		71		241
1911.....		7		14		36		36		93		77		263
1912.....		7		15		36		37		104		84		283
1913.....		8		10		36		38		112		90		300
1914.....	8	8	16	17	34	36	38	38	116	115	99	98	311	312
1915.....	8	8	18	18	41	38	39	39	114	114	108	107	328	324
1916.....	8	8	18	19	40	40	40	40	114	113	119	114	339	334
1917.....	8	8	20	20	40	41	42	41	114	110	120	118	344	338
1918.....	9	9	22	22	41	42	44	43	107	108	120	120	343	344
1919.....	9	9	23	24	46	46	47	45	103	104	121	121	349	349
1920.....	9	9	29	28	48	49	47	48	103	102	123	123	359	357
1921.....	9	9	31	32	56	54	50	48	101	104	126	128	373	375
1922.....	9	9	38	35	61	59	52	50	106	106	134	134	400	393
1923.....	10	10	41	39	62	62	53	52	109	109	143	143	418	415
1924.....	10	10	43	43	64	65	54	53	112	113	154	154	437	438
1925.....	10	10	47	47	67	68	55	54	119	120	168	167	466	466
1926.....	11	11	52	51	72	72	56	55	126	128	187	182	504	499
1927.....	12	11	56	56	75	76	57	56	142	140	199	195	541	534
1928.....	12	12	62	62	80	79	57	57	154	142	208	205	573	557
1929.....	13	13	69	69	82	82	57	57	137	136	212	212	570	569

Sources of data:

1909, Dept. of Com., Bur. of Census, Census of the U. S., Statistics for California, 1920: 863-869. Cherries and apricots for 1914-1918, California Co-operative Crop Reporting Service, California Crop Report, 1927: 39; 1919-1929, California Co-operative Crop Reporting Service, California Crop Report, 1928: 45. Pears, apples, peaches, prunes and plums for 1914-1928, California Co-operative Crop Reporting Service, California Crop Report, 1927: 39; 1929, California Co-operative Crop Reporting Service, California Crop Report, 1928: 45.

ACREAGES AND TRENDS IN THE ACREAGES OF VEGETABLES IN CALIFORNIA, 1909-1929

In thousands of acres

Year	Celery		Onions		Cantaloupes		Cauliflower		Lettuce		Peas		White potatoes	
	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend
1909														
1910														
1911														
1912														
1913														
1914														
1915														
1916														
1917														
1918														
1919	5	4	8	9	26	25	7	7	8	10	9	8	66	77
1920	5	5	12	10	28	27	7	7	18	13	9	9	70	73
1921	5	5	10	10	26	30	6	7	15	16	8	10	74	70
1922	6	6	10	10	39	33	7	7	18	21	12	11	76	85
1923	6	6	8	8	34	35	7	7	25	28	14	12	52	58
1924	6	6	6	8	40	38	7	7	38	36	11	13	46	50
1925	6	7	7	8	38	40	7	8	48	50	11	15	44	48
1926	8	8	9	9	44	42	10	9	65	61	10	10	44	46
1927	8	8	10	10	46	45	9	11	76	70	28	24	52	50
1928	9	9	10	10	44	46	13	12	72	79	27	28	56	55
1929	9	9	10	10	50	48	14	12	87	84	32	32	56	60

RATE OF IRRIGATION DEVELOPMENT

TABLE 6B—Continued
ACREAGES AND TRENDS IN THE ACREAGES OF VEGETABLES IN CALIFORNIA, 1909-1929

In thousands of acres

Year	Asparagus		Sweet potatoes		Tomatoes		Spinach		Watermelons		All others		Total	
	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend
1909													152	152
1910														160
1911														170
1912														180
1913														190
1914														200
1915														210
1916														220
1917														230
1918														240
1919	17	17	8	8	54	36	4	4	6	6	31	31	249	242
1920	20	19	8	8	40	34	4	4	6	7	33	33	260	249
1921	21	21	8	8	14	31	6	6	9	8	35	36	237	255
1922	22	22	8	8	31	31	7	7	10	9	38	38	284	269
1923	28	28	6	7	44	35	10	8	8	10	38	39	280	281
1924	30	33	6	8	38	39	7	6	12	10	39	41	286	298
1925	41	40	9	9	42	43	12	10	10	11	45	44	320	331
1926	56	48	12	11	45	46	12	12	13	12	45	45	382	368
1927	58	56	12	12	52	48	12	13	10	12	48	47	421	406
1928	60	59	12	12	48	51	13	14	12	12	49	49	425	436
1929	60	60	12	12	53	52	17	16	14	12	57	53	471	460

Sources of data:

Potatoes and sweet potatoes, 1919-1921, California Co-operative Crop Reporting Service, California Crop Report 1925: 8-9; 1922, California Co-operative Crop Reporting Service, California Crop Report 1926: 7-8; 1923, California Co-operative Crop Reporting Service, California Crop Report, 1927: 8; 1924-1928, California Co-operative Crop Reporting Service, California Crop Report 1928: 10; 1929, California Co-operative Crop Reporting Service, Summary of California Annual Field Crop Report, Nov. 13, 1929.

Vegetables, other than potatoes, 1919, California Co-operative Crop Reporting Service, California Crop Report 1923:14; 1920, California Co-operative Crop Reporting Service, California Crop Report, 1924: 19; 1921-1923, California Co-operative Crop Reporting Service, California Crop Report 1925: 29; 1924, California Co-operative Crop Reporting Service, California Crop Report, 1926: 13-14; 1925-1927, California Co-operative Crop Reporting Service, California Crop Report, 1928: 20-22; 1928-1929, California Co-operative Crop Reporting Service, mimeographed report of Jan. 2, 1930; 1909, Dept. of Com., Bur. of Census, Thirteenth Census of the U. S., Statistics for California 1910: 650. (Potatoes and sweet potatoes and yams were added to "all other vegetables.")

TABLE 7B

ACREAGES AND TRENDS IN THE ACREAGES OF MISCELLANEOUS FIELD CROPS, INCLUDING SUGAR BEETS, COTTON AND BEANS, HARVESTED IN CALIFORNIA, 1909-1929

In thousands of acres

Year	Sugar beets		Cotton		Beans		Total	
	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend
1909	83	83			270	278	353	361
1910	83	88	9	8	240	266	332	362
1911	99	100	12	10	322	264	433	374
1912	111	107	9	16	228	260	348	383
1913	128	115	14	24	197	300	339	439
1914	104	118	47	36	344	358	495	542
1915	123	134	39	61	458	424	620	619
1916	159	146	52	80	433	486	644	712
1917	190	149	136	126	589	520	915	795
1918	120	136	181	171	592	512	892	819
1919	107	123	185	198	472	440	764	761
1920	123	110	275	210	300	368	698	688
1921	121	97	140	206	272	320	533	623
1922	57	81	202	200	324	286	583	567
1923	61	71	233	188	299	268	593	527
1924	84	68	129	174	206	260	419	502
1925	78	66	172	169	240	250	488	495
1926	46	58	162	168	305	276	513	502
1927	59	54	128	176	296	297	483	527
1928	49	50	218	200	307	316	574	566
1929	48	48	309	224	334	328	691	600

Sources of data:

Sugar beets, 1909-1918, Yearbooks of the U. S. Dept. of Agr.; 1919-1923, California Co-operative Crop Reporting Service, California Crop Report 1924: 10-11; 1924-1927, California Co-operative Crop Reporting Service, California Crop Report 1928: 9-10; 1928-1929, California Co-operative Crop Reporting Service, Summary of California Annual Field Crop Report, January 2, 1930.

Cotton, 1910-1918, Yearbook of the U. S. Dept. of Agr. 1918: 532; 1919-1923, California Co-operative Crop Reporting Service, California Crop Report 1924: 10-11; 1924-1927, California Co-operative Crop Reporting Service, California Crop Report 1928: 9-10.

Beans, 1909-1917, estimated on basis of average yield per acre for the years 1918-1926, divided into total production for the years 1909-1917; 1918, Yearbook of the U. S. Dept. of Agr. 1918: 558; 1919-1923, California Co-operative Crop Reporting Service, California Crop Report 1924: 10-11; 1924-1927, California Co-operative Crop Reporting Service, California Crop Report 1928: 9; 1928-1929, California Co-operative Crop Reporting Service, Summary of California Annual Field Crop Report, January 2, 1930.

TABLE 8B
ACREAGES AND TREND OF THE TOTAL ACREAGE OF HAY CROPS HARVESTED IN
CALIFORNIA, 1909-1929

In thousands of acres

Year	Alfalfa acreage	Grain hay acreage	Other tame hay acreage	Wild hay acreage	Total	
					Acreage	Trend
1909						2,492
1910						2,411
1911						2,415
1912						2,376
1913						2,345
1914						2,308
1915						2,274
1916						2,238
1917						2,205
1918						2,160
1919	719	1,085	156	178	2,138	2,161
1920						2,148
1921						2,155
1922						2,155
1923						2,075
1924	984	892	118	114	2,088	2,072
1925	971	694	112	148	1,925	1,975
1926	981	616	102	150	1,849	1,904
1927	1,001	546	102	147	1,796	1,850
1928	1,011	546	97	150	1,804	1,893
1929	991	759	102	150	2,002	1,948

Sources of data:

1909, 1919, Dept. of Com., Bur. of Census, Fourteenth Census of the United States 1920: 807; 1924, California Crop Report 1926: 9; 1925, California Crop Report 1927: 9; 1926, 1927, 1928, California Crop Report 1928: 12; 1929, California Co-operative Crop Reporting Service, California Crop Report, August 1, 1929.

TABLE 9B
ACREAGES AND TREND OF THE TOTAL ACREAGE OF THE CEREAL CROPS HARVESTED
IN CALIFORNIA, 1909-1929

In thousands of acres

Year	Rice acreage	Corn acreage	Sorghum grains acreage	Wheat acreage	Barley acreage	Oats acreage	Total	
							Acreage	Trend
1909		50	44	426	1,195	200	1,915	2,281
1910		50		550	1,500	200		2,238
1911		51		480	1,450	210		2,221
1912	2	52		370	1,392	200		2,218
1913	6	55		300	1,275	210		2,213
1914	34	60		400	1,402	220		2,222
1915	34	64		440	1,360	211		2,214
1916	55	64		350	1,190	200		2,210
1917	80	75		375	1,350	196		2,226
1918	106	85		506	1,320	175		2,235
1919	155	149	168	1,087	987	147	2,693	2,230
1920	162	139	150	714	1,250	155	2,570	2,215
1921	135	116	140	557	1,188	140	2,276	2,197
1922	140	116	130	712	1,129	150	2,377	2,176
1923	106	128	135	748	1,095	162	2,374	2,157
1924	90	82	84	377	698	86	1,417	2,140
1925	103	81	88	603	1,040	151	2,066	2,132
1926	149	77	96	653	1,080	156	2,211	2,115
1927	160	77	130	812	994	147	2,320	2,125
1928	132	75	125	780	1,044	154	2,310	2,123
1929	95	82	115	680	992	145	2,109	2,131

Sources of data:

Rice, corn, sorghum grains and oats for 1909-1918, Yearbook of the U. S. Dept. of Agr. for the various years; 1919-1923, California Co-operative Crop Reporting Service, California Crop Report 1924: 10-11; 1924-1927, California Co-operative Crop Reporting Service, California Crop Report 1928: 9-10; 1928, 1929, California Co-operative Crop Reporting Service, Summary of California Annual Field Crop Report, January 2, 1930.

Wheat and barley for 1909-1925, California Co-operative Crop Reporting Service, California Crop Report 1925: 11; 1926, 1927, California Co-operative Crop Reporting Service, California Crop Report 1927: 7; 1928, 1929, California Co-operative Crop Reporting Service, Summary of California Annual Field Crop Report, January 2, 1930.

TABLE 10B
ACREAGES AND TRENDS IN THE ACREAGES OF ALL LAND IN FARMS IN THE SAN JOAQUIN VALLEY, 1909-1929

Years	Crop land harvested		Non-bearing orchard		Other improved land		Woodland in farms		Other land in farms		Total land in farms	
	Acreage	Trend	Acreage	Trend	Acreage	Trend ¹	Acreage	Trend ¹	Acreage	Trend ¹	Acreage	Trend
1909.....	1,636,690	1,692,300			2,095,274	2,034,190	641,865	641,865	2,732,461	3,183,135	7,106,290	7,551,490
1910.....		1,675,700				2,027,600		638,862		3,186,138		7,529,300
1911.....		1,675,800				2,004,325		635,859		3,188,141		7,504,125
1912.....		1,684,700				1,946,776		632,856		3,217,144		7,481,475
1913.....		1,700,600				1,907,200		629,853		3,220,147		7,457,800
1914.....		1,723,500				1,835,335		626,850		3,248,150		7,433,835
1915.....		1,751,000				1,773,010		623,847		3,236,153		7,395,010
1916.....		1,792,400				1,718,250		620,844		3,229,156		7,360,650
1917.....		1,832,300				1,654,315		617,841		3,247,159		7,351,615
1918.....		1,884,200				1,562,145		614,838		3,263,162		7,324,345
1919.....	2,078,754	1,948,800	94,029	92,030	1,541,804	1,367,985	588,352	611,835	3,217,666	3,288,165	7,520,605	7,308,815
1920.....		1,997,000		103,963		1,253,084		608,332		3,301,168		7,284,047
1921.....		2,019,700		120,170		1,176,095		605,829		3,329,171		7,250,965
1922.....		2,034,500		132,017		1,109,573		602,826		3,347,174		7,226,090
1923.....		2,043,800		137,923		1,070,027		599,823		3,350,177		7,201,750
1924.....	1,774,918	2,075,700	160,066	132,050	1,315,016	993,260	596,813	596,820	3,097,297	3,353,180	6,944,110	7,161,010
1925.....	2,187,996	2,136,400	116,019	112,328		923,000		572,000		3,380,000		7,125,728
1926.....	2,184,045	2,204,100	81,511	82,856		845,000		572,000		3,380,000		7,083,956
1927.....	2,359,832	2,275,100	51,330	55,878		770,000		559,000		3,419,000		7,078,878
1928.....	2,402,984	2,336,200	33,234	38,468		715,000		559,000		3,432,000		7,080,668
1929.....	2,376,899	2,384,200	28,335	30,767		637,000		546,000		3,432,000		7,029,967

¹ For the years 1925-1929, acreage figures were not available, but the trend in acreage was extended over these years.

Sources of data:

Figures for crop land harvested and non-bearing orchard were obtained from Tables 23 and 2B. Other improved land, woodland in farms, and other land in farms for the years 1909, 1919 and 1925 were obtained from Dept. of Com., Bur. of Census, Census of the U. S., Statistics for California, 1910, 1920 and 1925.

TABLE 11B
ACREAGES AND TRENDS IN THE ACREAGES OF THE BEARING SUB-TROPICAL FRUITS IN THE SAN JOAQUIN VALLEY, 1909-1929

Years	Lemons		Oranges		Grapefruit		Walnuts		Almonds		Grapes		Olives		Figs		Total	
	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend
1909.....	679	675	10,913	10,700	517	510	352	350	2,747	2,700	100,246	160,000	2,154	2,100	4,841	4,750	182,449	181,785
1910.....		760		11,000		555		460		3,500		165,000		2,550		5,500		189,315
1911.....		850		13,500		600		550		4,500		170,000		3,000		6,500		199,250
1912.....		950		15,000		650		650		5,000		177,500		3,450		7,500		210,700
1913.....		1,035		16,500		690		750		5,800		182,500		3,900		8,750		219,925
1914.....		1,125		17,800		740		850		6,575		189,000		4,400		9,750		230,240
1915.....		1,225		19,250		790		975		7,300		195,000		4,825		10,750		240,115
1916.....		1,325		20,800		830		1,100		8,100		202,500		5,300		12,000		251,955
1917.....		1,425		22,250		885		1,200		8,900		209,000		5,750		13,000		262,410
1918.....		1,575		23,750		980		1,300		9,650		217,500		6,200		14,000		274,905
1919.....	1,605	1,730	25,131	26,000		980	1,434	1,325		10,400	223,395	235,000		6,700		15,250	284,885	297,685
1920.....		1,900		28,450		1,028		2,200		11,200		257,500		7,125		15,500		325,903
1921.....		2,175		31,150		1,070		2,850		12,000		285,000		7,600		17,500		359,345
1922.....		2,410		33,750		1,120		3,575		12,775		320,000		8,050		18,500		400,185
1923.....		2,630		36,500		1,170		4,350		13,400		361,500		8,500		20,000		448,050
1924.....	2,914	2,825	39,231	39,000	1,215	1,195	5,058	5,000	14,325	14,000	369,888	407,300	9,158	9,100	20,880	22,500	462,669	500,920
1925.....	3,015	2,925	40,193	40,250	1,209	1,210	5,624	5,500	14,231	14,700	460,495	440,000	9,617	9,125	23,538	26,500	557,922	540,210
1926.....	2,970	2,975	42,192	41,500	1,209	1,210	5,883	6,050	15,136	15,500	488,353	466,000	9,766	8,900	31,897	34,000	597,406	576,135
1927.....	2,997	2,990	42,380	42,000	1,211	1,210	6,206	6,800	16,861	16,000	493,493	480,000	7,538	8,800	41,259	40,500	611,945	598,300
1928.....	2,994	3,000	42,583	42,500	1,203	1,210	8,159	7,700	17,203	15,800	483,659	475,000	7,945	9,500	58,217	45,000	621,963	599,710
1929.....	2,964	3,030	42,497	42,450	1,215	1,200	8,661	8,500	14,841	15,200	467,429	461,500	11,667	11,600	43,163	46,250	592,437	589,700

Sources of data:

1909, Dept. of Com., Bur. of Census, Thirteenth Census of the U. S., Statistics for California, 1910: 650-655; 1919-1929, Yearly Crop Reports of the California Co-operative Crop Reporting Service.

TABLE 12B
ACREAGES AND TREND OF THE TOTAL ACREAGE OF THE BEARING TEMPERATE ZONE
FRUITS IN THE SAN JOAQUIN VALLEY, 1909-1929

Year	Cherries acreage	Pears acreage	Apricots acreage	Apples acreage	Peaches acreage	Prunes and plums acreage	Total	
							Acreage	Trend
1909	263	502	6,044	1,537	43,204	6,242	57,792	57,400
1910								58,400
1911								59,400
1912								60,600
1913								62,100
1914								63,200
1915								64,300
1916								65,700
1917								67,100
1918								69,800
1919	245	1,279	6,287	4,905	49,301	7,352	69,369	73,300
1920								78,100
1921								84,100
1922								91,300
1923								99,500
1924	275	2,802	12,897	3,682	62,214	24,829	106,499	107,200
1925	290	3,317	14,919	4,431	67,084	28,433	118,474	114,500
1926	310	5,084	16,625	4,505	65,006	30,059	121,589	120,400
1927	330	3,771	19,743	3,712	81,168	25,163	133,887	124,000
1928	200	3,926	21,400	3,647	74,831	26,327	130,331	125,300
1929	250	3,998	19,827	3,632	60,000	26,255	113,962	125,200

Sources of data:

1909, Dept. of Com., Bur. of Census, Thirteenth Census of the U. S., Statistics for California, 1910: 650-655; 1919, Dept. of Com., Bur. of Census, Fourteenth Census of the U. S., Statistics for California, 1920: 87-92; 1924-1929, Yearly Crop Reports of the California Co-operative Crop Reporting Service.

TABLE 13B
ACREAGES AND TREND OF THE TOTAL ACREAGE OF THE MAJOR GROUPS OF VEGETABLES HARVESTED IN THE SAN JOAQUIN VALLEY, 1909-1929

Year	Potatoes acreage	Sweet potatoes acreage	Truck crops acreage	Total	
				Acreage	Trend
1909	23,269	3,935	14,189	41,393	42,874
1910					45,750
1911					48,750
1912					51,425
1913					54,100
1914					56,600
1915					58,825
1916					60,750
1917					62,750
1918					64,100
1919	24,000	4,800	25,500	54,300	64,900
1920	29,000	5,300			65,150
1921	32,000	6,400			66,006
1922	33,000	5,800			64,875
1923	22,000	4,600			64,950
1924	24,000	4,600			64,750
1925	21,000	7,100			66,700
1926	21,000	10,000	37,300	68,300	65,900
1927	25,000	9,500	34,300	68,800	65,550
1928	26,000	9,900	34,600	70,500	65,725
1929	16,000	8,900	38,700	63,600	67,050

Sources of data:

1909, Dept. of Com., Bur. of Census, Thirteenth Census of the U. S., Statistics for California, 1910: 650-655; 1919-1929, Yearly Crop Reports of the California Co-operative Crop Reporting Service.

TABLE 14B

ACREAGES AND TRENDS IN THE ACREAGES IN THE MISCELLANEOUS FIELD CROPS,
INCLUDING SUGAR BEETS, BEANS AND COTTON, HARVESTED IN
THE SAN JOAQUIN VALLEY, 1909-1929

Years	Sugar beets		Beans		Cotton		Total	
	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend
1909.....	2,105	2,105	14,942	14,942			17,047	17,047
1910.....		2,175		18,000				20,175
1911.....		2,250		21,500				23,750
1912.....		2,325		24,750				27,075
1913.....		2,400		28,000				30,400
1914.....		2,500		31,400				33,900
1915.....		2,600		34,750				37,350
1916.....		2,700		38,000				40,700
1917.....		2,800		41,250				44,050
1918.....		2,900		42,000				44,900
1919.....	3,000	2,850	48,000	40,000	5,500	11,000	56,500	53,850
1920.....		2,700	28,000	36,000	21,000	10,000		48,700
1921.....		2,500	29,000	36,000	3,500	10,000		48,500
1922.....		2,300	40,000	39,000	2,500	12,000		53,300
1923.....		2,200	51,000	45,500	9,000	25,000		72,700
1924.....	1,800	2,500	41,000	55,750	37,800	50,000	80,600	108,250
1925.....		3,000	69,000	62,000	96,600	76,500		141,500
1926.....		3,650	76,000	66,000	109,300	98,000		167,650
1927.....		4,300	64,000	66,000	79,800	122,000		192,300
1928.....		5,050	61,000	65,900	151,900	148,000		218,900
1929.....	8,000	5,900	61,000	65,750	250,000	174,000	319,000	245,650

Sources of data:

1909, Dept. of Com., Bur. of Census, Thirteenth Census of the U. S., Statistics for California, 1910: 650-655; 1910-1929, Yearly Crop Reports of the California Co-operative Crop Reporting Service.

TABLE 15B

ACREAGES AND TRENDS IN THE ACREAGES OF HAY CROPS HARVESTED IN THE SAN JOAQUIN VALLEY, 1909-1929

Year	Alfalfa		Grain hay		Other tame hay		Wild hay		Total	
	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend
1909.....	239,109	239,000	265,447	265,447	12,347	12,347	39,402	39,402	556,305	556,106
1910.....		260,000		254,000		12,000		36,500		562,500
1911.....		280,000		245,000		11,625		33,600		570,225
1912.....		300,000		234,500		11,300		30,750		578,550
1913.....		321,500		225,000		10,950		27,800		585,250
1914.....		340,000		215,000		10,600		25,000		590,600
1915.....		364,000		205,000		10,250		22,300		601,550
1916.....		384,000		195,500		9,900		19,300		608,700
1917.....		405,000		186,000		9,550		16,500		617,050
1918.....		425,000		176,000		9,250		13,750		624,000
1919.....	447,000	440,000	166,000	166,000	8,900	9,125	10,800	11,800	632,700	628,925
1920.....	453,000	452,500	159,000	160,000	9,000	9,100	10,300	10,750	631,300	632,350
1921.....	456,000	455,000	153,000	162,000	9,200	8,990	10,000	9,800	628,200	625,790
1922.....	455,000	460,000	148,000	146,000	9,300	9,050	10,000	8,600	622,300	623,650
1923.....	459,000	452,500	139,000	139,000	7,800	9,400	8,000	7,500	613,800	608,400
1924.....	447,000	450,000	131,000	129,000	11,000	9,800	2,900	7,000	591,900	595,800
1925.....	453,000	450,000	117,000	114,000	11,500	9,475	9,800	8,000	591,300	581,475
1926.....	449,000	455,000	94,000	100,000	7,300	8,600	9,700	8,450	560,000	572,050
1927.....	459,000	457,500	87,000	100,000	7,400	7,900	8,500	8,500	561,900	573,900
1928.....	464,000	454,000	84,000	114,000	7,500	7,700	7,400	8,250	562,900	583,950
1929.....	436,000	445,000	171,000	136,000	8,500	7,990	7,400	7,750	622,900	596,740

Sources of data:

1909, Dept. of Com., Bur. of Census, Thirteenth Census of the U. S., Statistics for California, 1910: 650-655; 1919-1929, Yearly Crop Reports of the California Co-operative Crop Reporting Service.

TABLE 16B
ACREAGES AND TRENDS IN THE ACREAGES OF THE CEREAL CROP HARVESTED IN THE SAN JOAQUIN VALLEY, 1909-1929

Year	Corn		Sorghums		Wheat		Barley		Oats		Rice		Total	
	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend
1909	11,978	11,978	29,385	29,385	192,725	248,000	452,489	452,489	95,129	95,129			781,704	836,970
1910		16,000		33,500		215,000		445,000		90,000				799,500
1911		20,500		37,750		192,500		439,000		84,500				744,250
1912		25,000		42,250		179,000		433,000		79,000				758,250
1913		29,250		46,500		172,500		427,000		73,500				748,750
1914		33,750		50,750		174,000		422,500		68,000				749,000
1915		38,000		55,250		180,000		419,000		62,500				754,750
1916		42,000		59,500		191,000		415,000		57,000				764,500
1917		47,000		64,000		206,000		410,000		51,750				778,750
1918		50,500		67,500		226,000		415,000		47,500				806,500
1919	55,500	50,500	72,500	69,000	407,000	243,000	399,000	420,000	41,000	44,000	6,000	5,550	981,000	832,050
1920	52,000	47,000	68,500	68,500	294,000	253,000	465,000	430,000	45,000	43,500	6,000	4,700	900,500	846,700
1921	37,000	40,250	65,500	67,500	175,000	255,000	427,000	427,000	41,000	44,000	2,300	3,250	748,800	837,000
1922	30,000	36,250	63,000	63,500	297,000	255,000	422,000	400,000	46,000	44,500	1,600	1,800	859,600	801,050
1923	37,000	32,250	69,000	67,500	328,000	247,000	399,000	367,500	50,000	44,750	1,300	1,100	884,300	750,100
1924	36,000	34,250	49,000	46,500	127,000	240,000	333,000	330,000	34,000	44,000	100	900	470,100	698,650
1925	33,000	33,000	42,000	47,000	230,000	242,500	357,000	325,000	52,000	45,000	300	2,450	714,300	694,950
1926	30,000	31,000	43,000	49,500	217,000	250,000	330,000	320,000	46,000	45,500	3,100	5,900	669,100	701,900
1927	30,000	30,500	64,000	52,500	333,000	262,500	307,000	320,000	44,000	46,000	13,000	9,500	791,000	721,000
1928	28,000	30,750	62,000	55,250	315,000	280,000	332,000	319,000	48,000	45,500	13,300	11,950	798,300	742,450
1929	33,000	31,000	44,000	58,000	250,000	300,000	283,000	312,500	42,000	45,000	13,000	13,300	665,000	759,800

Sources of data:

1909, Dept. of Com., Bur. of Census, Thirteenth Census of the U. S., Statistics for California, 1910: 650-655; 1919-1929, Yearly Crop Reports of the California Co-operative Crop Reporting Service.

TABLE 17B

ACREAGES AND TRENDS IN THE ACREAGES OF THE BEARING SUB-TROPICAL FRUITS IN THE SACRAMENTO VALLEY, 1909-1929

Year	Lemons		Oranges		Grapefruit		Walnuts		Almonds		Grapes		Olives		Figs		Total	
	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend
1909.....	85	85	2,442	2,442	10	10	471	471	8,954	8,954	33,612	33,612	2,351	2,351	976	976	48,901	48,901
1910.....	100	100	2,442	2,442	10	10	525	525	9,800	9,800	33,050	33,050	2,700	2,700	1,000	1,000	49,627	49,627
1911.....	175	175	2,442	2,442	10	10	600	600	10,800	10,800	32,450	32,450	3,125	3,125	1,100	1,100	50,702	50,702
1912.....	200	200	2,442	2,442	10	10	700	700	11,800	11,800	31,800	31,800	3,525	3,525	1,175	1,175	51,652	51,652
1913.....	275	275	2,450	2,450	10	10	800	800	12,800	12,800	31,300	31,300	3,950	3,950	1,250	1,250	52,835	52,835
1914.....	325	325	2,455	2,455	10	10	900	900	13,800	13,800	30,700	30,700	4,375	4,375	1,325	1,325	53,890	53,890
1915.....	400	400	2,460	2,460	10	10	1,000	1,000	14,750	14,750	30,100	30,100	4,800	4,800	1,400	1,400	54,920	54,920
1916.....	450	450	2,475	2,475	11	11	1,100	1,100	15,700	15,700	29,550	29,550	5,200	5,200	1,500	1,500	55,986	55,986
1917.....	500	500	2,500	2,500	11	11	1,200	1,200	16,700	16,700	28,950	28,950	5,625	5,625	1,500	1,500	57,086	57,086
1918.....	580	580	2,525	2,525	11	11	1,300	1,300	17,700	17,700	28,600	28,600	6,025	6,025	1,700	1,700	58,441	58,441
1919.....	643	643	2,500	2,700	12	12	1,406	1,350	18,700	18,700	27,841	28,600	6,450	6,450	1,775	1,775	60,230	60,230
1920.....	700	700	2,950	2,950	50	50	1,300	1,300	19,700	19,700	29,300	29,300	6,875	6,875	1,850	1,850	62,725	62,725
1921.....	725	725	3,300	3,300	60	60	1,300	1,300	20,700	20,700	30,300	30,300	7,300	7,300	1,925	1,925	65,610	65,610
1922.....	750	750	3,650	3,650	75	75	1,300	1,300	21,700	21,700	31,550	31,550	7,700	7,700	2,000	2,000	68,725	68,725
1923.....	800	800	3,950	3,950	75	75	1,300	1,300	23,000	23,000	33,000	33,000	8,100	8,100	2,100	2,100	72,325	72,325
1924.....	846	846	4,480	4,125	76	76	1,120	1,300	23,784	24,900	34,053	34,800	8,598	8,350	2,202	2,150	76,159	76,547
1925.....	844	844	4,240	4,100	75	75	1,455	1,400	28,358	27,450	37,772	36,600	8,495	8,650	2,121	2,200	83,360	81,319
1926.....	875	875	3,816	3,950	95	95	1,632	1,632	32,549	30,800	38,430	38,000	9,017	9,000	2,144	2,250	88,558	86,602
1927.....	866	866	3,667	3,825	98	98	1,830	1,830	35,926	33,800	38,139	39,200	9,169	9,500	2,462	2,300	90,185	91,417
1928.....	843	843	3,839	3,700	86	86	2,139	2,075	35,182	35,182	40,535	40,100	10,661	9,675	2,442	2,400	95,727	94,361
1929.....	843	843	3,858	3,600	86	86	2,322	2,300	35,893	35,893	41,674	40,950	10,246	10,400	2,587	2,587	97,509	96,659

Sources of data:

1909, Dept. of Com., Bur. of Census, Census of the U. S., Statistics for California, 1910: 650-655, Table 4; 1919-1929, data furnished by office of Agricultural Statistician, California Co-operative Crop Reporting Service.

TABLE 18B
ACREAGES AND TRENDS IN THE ACREAGES OF THE BEARING TEMPERATE ZONE FRUITS IN THE SACRAMENTO VALLEY, 1909-1929

Year	Cherries		Pears		Apricots		Apples		Peaches		Plums and prunes		Total	
	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend
1909	826	826	4,774	4,774	6,199	6,199	1,242	1,242	12,404	12,404	11,397	11,397	36,842	36,842
1910		900		4,800		5,950		1,250		12,550		11,950		37,400
1911		1,000		5,000		5,800		1,250		12,650		12,300		38,000
1912		1,050		5,200		5,600		1,275		12,800		12,800		38,725
1913		1,100		5,400		5,450		1,300		12,950		13,300		39,500
1914		1,200		5,600		5,300		1,350		13,050		13,900		40,400
1915		1,250		5,800		5,100		1,400		13,200		14,400		41,150
1916		1,400		6,000		5,000		1,450		13,400		14,950		42,200
1917		1,450		6,200		4,800		1,475		13,500		15,600		43,025
1918		1,550		6,800		4,600		1,500		13,800		16,400		44,500
1919		1,800	6,640	7,200	4,458	4,700	1,573	13,832	14,300	16,644	18,600		47,973	
1920		1,700		8,350		4,800		1,595		16,200		22,000		53,645
1921		1,800		9,800		5,150		1,600		16,250		26,600		61,200
1922		1,900		11,450		5,500		1,625		17,500		31,400		69,375
1923		2,000		12,750		5,800		1,700		19,000		36,000		77,250
1924	2,021	2,000	14,746	13,750	6,289	6,250	1,793	1,550	19,959	20,600	41,659	40,300	86,467	84,450
1925	2,144	1,900	14,040	14,200	6,767	6,600	1,215	1,400	23,166	23,300	42,592	42,700	89,924	90,100
1926	1,749	1,900	13,882	14,550	7,077	7,200	1,269	1,269	25,316	27,000	46,148	44,300	95,441	96,219
1927	1,869	1,950	15,012	15,200	7,947	8,000	1,360	1,360	32,520	31,600	44,471	45,600	103,179	103,710
1928	2,081	2,050	16,277	16,277	9,245	8,950	1,454	1,360	37,931	36,600	47,384	46,500	114,372	111,637
1929	2,161	2,250	17,770	17,770	9,669	9,900	1,398	1,450	39,781	39,500	49,117	47,300	119,898	118,170

Sources of data:

1909, Dept. of Com., Bur. of Census, Census of the U. S., Statistics for California, 1910: 650-655, Table 4; 1919-1929, data furnished by office of Agricultural Statistician, California Co-operative Crop Reporting Service.

TABLE 19B
ACREAGES AND TRENDS IN THE ACREAGES OF VEGETABLE CROPS IN THE SACRAMENTO VALLEY, 1909-1929

Year	Potatoes		Truck crops		Total	
	Acreage	Trend	Acreage	Trend	Acreage	Trend
1909						
1910	3,207	3,200	9,721	9,700	12,928	12,900
1911		3,300		11,000		14,300
1912		3,400		12,500		15,900
1913		3,500		14,000		17,500
1914		3,579		15,500		19,075
1915		3,675		17,000		20,675
1916		3,760		18,500		22,260
1917		3,850		20,000		23,850
1918		3,950		21,500		25,450
1919	4,125	4,000		23,000		27,000
1920	3,900	4,025	23,571	26,000	27,696	30,025
1921	4,000	3,975		30,000		34,025
1922	4,500	3,700		35,000		38,975
1923	3,200	2,950		40,000		43,700
1924	1,300	2,100		45,200		48,150
1925	1,300	1,625		50,500		52,600
1926	1,400	1,500	60,585	55,000	61,965	56,625
1927	1,900	1,650	60,969	59,000	62,869	60,500
1928	1,800	1,750	60,489	61,000	62,869	62,650
1929	1,500	1,750	65,461	62,500	66,961	64,250
				63,500		65,250

Sources of data:

1909, Dept. of Com., Bur. of Census, Census of the U. S., Statistics for California, 1910: 650-655. Table 4; 1919-1929, data furnished by office of Agricultural Statistician, California Co-operative Crop Reporting Service.

TABLE 20B
ACREAGES AND TRENDS IN THE ACREAGES OF MISCELLANEOUS FIELD CROPS, INCLUDING SUGAR BEETS, COTTON AND BEANS, IN THE SACRAMENTO VALLEY, 1909-1929

Years	Sugar beets		Cotton		Beans		Total	
	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend
1909								
1910	7,938	7,900			16,138	16,100	24,076	24,000
1911		7,200				20,500		27,700
1912		6,800				25,000		31,800
1913		6,000				29,250		35,250
1914		5,400				33,500		38,900
1915		4,800				38,000		42,800
1916		4,200				42,500		46,700
1917		3,800				47,750		51,350
1918		3,000				50,500		53,500
1919		2,800				50,000		52,600
1920	1,625	2,800			59,950	46,000	61,575	48,800
1921		4,600			23,300	38,000		42,600
1922		6,800			30,300	35,250		42,050
1923		9,800			40,400	34,500		44,300
1924		12,600			49,900	34,250		46,850
1925	15,200	15,600			25,700	32,000	40,900	47,600
1926		19,000	3,500	2,800	27,800	32,250		54,050
1927		22,800	3,300	3,700	36,000	34,500		61,000
1928		26,400	2,000	4,800	40,000	38,250		69,450
1929		30,200	9,500	6,100	41,000	42,000		78,300
1930	37,810	37,800		7,600	45,000	45,000		84,600

- Estimated on the basis of reports furnished by the Spreckles Sugar Company and the Holly Sugar Company of California.

Sources of data:

1909, Dept. of Com., Bur. of Census, Census of the U. S., Statistics for California, 1910: 650-655. Table 4; 1919-1929, data furnished by office of Agricultural Statistician, California Co-operative Crop Reporting Service.

TABLE 21B
ACREAGES AND TRENDS IN THE ACREAGES OF HAY CROPS IN THE SACRAMENTO VALLEY, 1909-1929

Years	Alfalfa		Grain hay		Other tame hay		Wild hay		Total	
	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend
1909.....	57,527	57,500	225,378	225,300	18,334	18,300	17,772	17,700	319,011	318,800
1910.....		63,000		216,000		17,500		17,200		313,700
1911.....		68,000		206,200		16,600		16,600		307,400
1912.....		73,000		197,000		15,800		16,000		301,800
1913.....		78,000		188,000		14,900		15,400		296,300
1914.....		83,000		179,000		14,000		14,900		290,900
1915.....		88,000		170,000		13,200		14,400		285,600
1916.....		93,000		160,000		12,500		13,800		279,300
1917.....		98,000		152,000		12,000		13,300		275,300
1918.....		102,000		142,000		11,600		12,700		268,300
1919.....	108,000	106,000	133,000	136,000	9,713	11,400	12,100	12,100	262,813	265,500
1920.....	108,000	109,000	133,000	128,000	10,000	11,100	11,500	11,600	262,500	257,700
1921.....	110,000	111,500	127,000	117,000	10,000	10,000	11,400	11,000	258,400	250,500
1922.....	109,000	114,000	117,000	108,000	10,000	10,600	10,500	10,400	246,500	243,000
1923.....	117,000	116,000	95,000	100,000	10,100	10,600	9,500	10,000	231,600	236,600
1924.....	119,000	118,000	102,000	92,000	16,300	10,400	5,000	29,400	242,300	229,800
1925.....	120,000	121,000	63,000	84,000	13,700	10,300	10,500	9,100	207,200	224,400
1926.....	122,000	123,000	76,000	76,000	9,600	10,100	10,800	8,900	218,400	218,000
1927.....	126,000	125,000	68,000	70,000	9,200	10,000	10,000	8,700	213,200	213,700
1928.....	132,000	127,500	66,000	66,000	8,000	9,900	9,500	8,500	215,500	211,900
1929.....	128,000	131,000	72,000	64,000	11,000	9,700	10,000	8,300	221,000	213,000

Sources of data:

1909, Dept. of Com., Bur. of Census, Census of the U. S., Statistics for California, 1910: 650-655, Table 4; 1919-1929, data furnished by office of Agricultural Statistician, California Co-operative Crop Reporting Service.

TABLE 22B
ACREAGES AND TRENDS IN THE ACREAGES OF CEREAL CROPS IN THE SACRAMENTO VALLEY, 1909-1929

Years	Rice		Corn		Sorghum grain		Wheat		Barley		Oats		Total	
	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend	Acreage	Trend
1909			4,044	4,044	3,544	3,500	125,686	147,500	298,639	298,000	15,821	15,500	447,734	468,544
1910				4,100		4,000		142,500		300,000		17,000		767,600
1911				4,200		4,400		140,000		305,000		18,000		471,600
1912	1,400	1,400		4,300		4,600		140,000		310,000		20,000		480,300
1913	6,100	7,000		4,400		5,100		140,000		315,000		23,000		494,500
1914	14,670	19,000		4,800		5,400		145,000		317,500		25,000		516,700
1915	33,100	36,000		5,300		5,800		150,125		320,000		27,000		544,225
1916	53,000	56,000		6,200		6,100		160,000		325,000		30,000		553,300
1917	77,000	80,000		7,400		6,400		170,000		335,000		33,000		591,800
1918	105,000	103,000		8,800		8,800		182,500		345,000		37,000		683,100
1919	147,500	114,000	13,300	10,200	10,700	7,200	352,000	195,000	338,000	360,000	41,000	39,000	902,500	725,400
1920	165,100	119,500	11,700	10,600	7,800	7,600	216,000	205,000	421,000	375,000	44,000	40,000	855,600	757,700
1921	132,500	121,000	9,600	10,200	8,300	8,300	181,000	212,500	404,000	390,000	37,000	39,000	772,400	781,000
1922	138,400	121,500	9,600	9,600	7,500	9,000	185,000	217,500	380,000	402,500	41,000	37,000	760,800	797,100
1923	104,700	120,000	8,900	9,800	10,300	10,300	196,000	220,000	381,000	410,000	40,000	35,000	740,900	805,100
1924	89,900	118,500	7,700	9,200	12,300	11,800	171,000	222,500	403,000	415,000	21,000	34,000	704,900	811,000
1925	102,700	116,500	7,500	7,750	12,900	14,800	219,000	225,000	453,000	417,500	41,000	33,000	886,100	814,350
1926	145,900	114,000	7,300	7,400	15,500	18,000	227,000	227,500	480,000	415,000	35,000	39,000	860,700	814,900
1927	145,000	111,500	7,600	7,400	26,000	22,600	232,000	230,000	374,000	405,000	31,000	33,000	845,500	809,500
1928	119,000	109,000	7,000	7,300	25,000	26,300	253,000	232,500	404,000	400,000	33,000	33,000	840,000	808,000
1929	82,000	106,500	7,500	7,100	30,000	29,600	247,000	235,000	424,000	390,000	33,000	33,000	823,500	801,200

Sources of data:

1909, Dept. of Com., Bur. of Census, Census of the U. S., Statistics for California, 1910: 650-655, Table 4; 1919-1929, data furnished by office of Agricultural Statistician, California Co-operative Crop Reporting Service.

PUBLICATIONS OF THE
DIVISION OF WATER RESOURCES
DEPARTMENT OF PUBLIC WORKS
STATE OF CALIFORNIA

When the Department of Public Works was created in July, 1921, the State Water Commission was succeeded by the Division of Water Rights, and the Department of Engineering was succeeded by the Division Engineering and Irrigation in all duties except those pertaining to State Architect. Both the Division Water Rights and the Division of Engineering and Irrigation functioned until August, 1929, when they were consolidated to form the Division of Water Resources.

STATE WATER COMMISSION

- First Report, State Water Commission, March 24 to November 1, 1912.
- Second Report, State Water Commission, November 1, 1912, to April 1, 1914.
- *Biennial Report, State Water Commission, March 1, 1915, to December 1, 1916.
- Biennial Report, State Water Commission, December 1, 1916, to September 1, 1917.
- Biennial Report, State Water Commission, September 1, 1918, to September 1, 1919.

DIVISION OF WATER RIGHTS

- *Bulletin No. 1—Hydrographic Investigation of San Joaquin River, 1920-1923.
- *Bulletin No. 2—Kings River Investigation, Water Master's Reports, 1918-1923.
- *Bulletin No. 3—Proceedings First Sacramento-San Joaquin River Problems Conference, 1924.
- *Bulletin No. 4—Proceedings Second Sacramento-San Joaquin River Problems Conference, and Water Supervisor's Report, 1924.
- Bulletin No. 5—San Gabriel Investigation—Basic Data, 1923-1926.
- Bulletin No. 6—San Gabriel Investigation—Basic Data, 1926-1928.
- Bulletin No. 7—San Gabriel Investigation—Analysis and Conclusions, 1929.
- *Biennial Report, Division of Water Rights, 1920-1922.
- *Biennial Report, Division of Water Rights, 1922-1924.
- Biennial Report, Division of Water Rights, 1924-1926.
- Biennial Report, Division of Water Rights, 1926-1928.

DEPARTMENT OF ENGINEERING

- *Bulletin No. 1—Cooperative Irrigation Investigations in California, 1912-1914.
- *Bulletin No. 2—Irrigation Districts in California, 1887-1915.
- Bulletin No. 3—Investigations of Economic Duty of Water for Alfalfa in Sacramento Valley, California, 1915.
- *Bulletin No. 4—Preliminary Report on Conservation and Control of Flood Waters in Coachella Valley, California, 1917.
- *Bulletin No. 5—Report on the Utilization of Mojave River for Irrigation in Victor Valley, California, 1918.
- *Bulletin No. 6—California Irrigation District Laws, 1919 (now obsolete).
- Bulletin No. 7—Use of water from Kings River, California, 1918.
- *Bulletin No. 8—Flood Problems of the Calaveras River, 1919.
- Bulletin No. 9—Water Resources of Kern River and Adjacent Streams and Their Utilization, 1920.
- *Biennial Report, Department of Engineering, 1907-1908.
- *Biennial Report, Department of Engineering, 1908-1910.
- *Biennial Report, Department of Engineering, 1910-1912.
- *Biennial Report, Department of Engineering, 1912-1914.
- *Biennial Report, Department of Engineering, 1914-1916.
- *Biennial Report, Department of Engineering, 1916-1918.
- *Biennial Report, Department of Engineering, 1918-1920.

* Reports and Bulletins out of print. These may be borrowed by your local library from the California State Library at Sacramento, California.

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DIVISION OF WATER RESOURCES

Including Reports of the Former Division of Engineering and Irrigation

- *Bulletin No. 1—California Irrigation District Laws, 1921 (now obsolete).
- *Bulletin No. 2—Formation of Irrigation Districts, Issuance of Bonds, etc., 1922.
- Bulletin No. 3—Water Resources of Tulare County and Their Utilization, 1922.
- Bulletin No. 4—Water Resources of California, 1923.
- Bulletin No. 5—Flow in California Streams, 1923.
- Bulletin No. 6—Irrigation Requirements of California Lands, 1923.
- *Bulletin No. 7—California Irrigation District Laws, 1923 (now obsolete).
- *Bulletin No. 8—Cost of Water to Irrigators in California, 1925.
- Bulletin No. 9—Supplemental Report on Water Resources of California, 1925.
- *Bulletin No. 10—California Irrigation District Laws, 1925 (now obsolete).
- Bulletin No. 11—Ground Water Resources of Southern San Joaquin Valley, 1927.
- Bulletin No. 12—Summary Report on the Water Resources of California and a Coordinated Plan for Their Development, 1927.
- Bulletin No. 13—The Development of the Upper Sacramento River, containing U. S. R. S. Cooperative Report on Iron Canyon Project, 1927.
- Bulletin No. 14—The Control of Floods by Reservoirs, 1928.
- *Bulletin No. 18—California Irrigation District Laws, 1927 (now obsolete).
- Bulletin No. 18—California Irrigation District Laws, 1929 Revision.
- Bulletin No. 19—Santa Ana Investigation, Flood Control and Conservation (with packet of maps), 1928.
- Bulletin No. 20—Kennett Reservoir Development, an Analysis of Methods and Extent of Financing by Electric Power Revenue, 1929.
- *Bulletin No. 21—Irrigation Districts in California, 1929.
- Bulletin No. 21-A—Report on Irrigation Districts in California for the Year 1929, 1930.
- Bulletin No. 22—Report on Salt Water Barrier (two volumes), 1929.
- Bulletin No. 23—Report of Sacramento-San Joaquin Water Supervisor, 1924–1928.
- Bulletin No. 24—A Proposed Major Development on American River, 1929.
- Bulletin No. 28-A—Industrial Survey of Upper San Francisco Bay Area, 1930.
- Bulletin No. 31—Santa Ana River Basin, 1930.
- Bulletin No. 32—South Coastal Basin, a Cooperative Symposium, 1930.
- Bulletin No. 34—Permissible Annual Charges for Irrigation Water in Upper San Joaquin Valley, 1930.
- Bulletin No. 35—Permissible Economic Rate of Irrigation Development in California, 1930.
- Biennial Report, Division of Engineering and Irrigation, 1920–1922.
- Biennial Report, Division of Engineering and Irrigation, 1922–1924.
- Biennial Report, Division of Engineering and Irrigation, 1924–1926.

COOPERATIVE AND MISCELLANEOUS REPORTS

- *Report of the Conservation Commission of California, 1912.
- *Irrigation Resources of California and Their Utilization (Bul. 254, Office of Exp. U. S. D. A.) 1913.
- *Report, State Water Problems Conference, November 25, 1916.
- *Report on Pit River Basin, April, 1915.
- *Report on Lower Pit River Project, July, 1915.
- *Report on Iron Canyon Project, 1914.
- *Report on Iron Canyon Project, California, May, 1920.
- *Sacramento Flood Control Project (Revised Plans), 1925.
- Report of Commission Appointed to Investigate Causes Leading to the Failure of St. Francis Dam, 1928.
- Report of the Joint Committee of the Senate and Assembly Dealing With the Water Problems of the State, 1929.

* Reports and Bulletins out of print. These may be borrowed by your local library from the California State Library at Sacramento, California.

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PAMPHLETS

Rules and Regulations Governing the Supervision of Dams in California, 1929
Water Commission Act with Latest Amendments Thereto, 1929.
Rules and Regulations Governing the Appropriation of Water in California, 1925
Rules and Regulations Governing the Determination of Rights to Use of Water
Accordance with the Water Commission Act, 1925.
Tables of Discharge for Parshall Measuring Flumes, 1928.
General Plans, Specifications and Bills of Material for Six and Nine Inch Parshall
Measuring Flumes, 1930.