

Analysis  
of  
Census records  
of  
Alvarado

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## **Introduction**

Most historical use of census data is aimed at the information in individual records, usually to look up persons and families for information about them in that time frame. The census records can also be used as a data set for analysis of people in a certain area, over time. By aggregating census data over years, trends can be seen providing insight into the past.

This paper details the analysis of the Alvarado census records over a number of years. The analysis is done at the year level, looking at different sets of data collected in each census.

The census records available run every 10 years, from 1860 to 1930, except for 1890, where the records were destroyed years ago, before they could be digitized.

## **Methodology**

The Alvarado census records were provided as spreadsheets, formatted to look like the original census forms. To do proper analysis of the data, the spreadsheets need to be converted into a database, one for each year. Before this was done, a review was made of the census data and minor “fixes” were done. Birth dates of less than a year, shown as “x/12” with x being months, were converted to the single digit, one. Misspellings of countries was corrected, etc. Any fields that were mostly blank or did not have valuable information were removed.

Extraneous information on the spreadsheets was deleted and the data saved as a comma-separated variable (CSV) format file. These files were then imported into a table in an SQL database.

The information on each census form varied by year. The more recent censuses had more data than the very early censuses. Each table in the database was tailored to each specific year and data it contained.

Given the type of data in the censuses, a number of questions were generated that were used to create queries on the data. The queries were modified for each census, since each census had slightly different data and format.

## **The Data**

Below is a number of questions that were created to base data queries on the census data. Each question is detailed and the resultant data is shown.

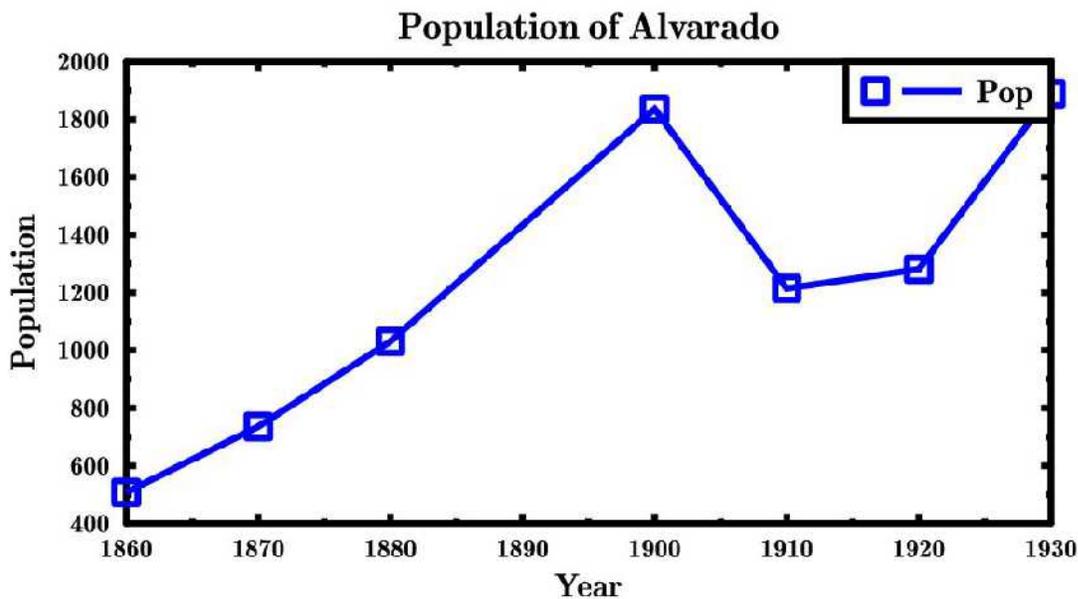
Note: The “% Pop” in the table is the percentage of the query in relation to the overall population.

## General Population

*What is the population of Alvarado over the years?*

This query is a simple count of all records in the census for each year.

Year	1860	1870	1880	1900	1910	1920	1930
	508	736	1,031	1,836	1,214	1,281	1,889



## Male Population

*What percentage of the population were male and how much does it change over time?*

The census has a field for sex, with two possible values; male and female. This query is based on counting all fields that have Sex set to Male.

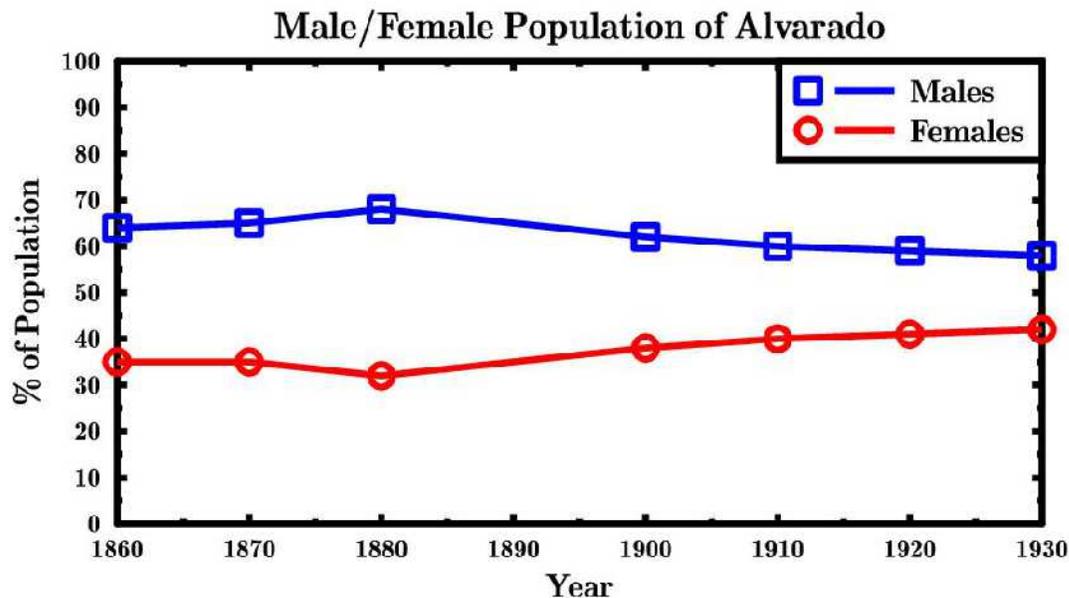
Year	1860	1870	1880	1900	1910	1920	1930
Males	327	478	699	1,142	729	751	1,090
% Pop.	64%	65%	68%	62%	60%	59%	58%

## Female Population

*What percentage of the population were female and how much does it change over time?*

This query is based on counting all fields that have Sex set to Female.

Year	1860	1870	1880	1900	1910	1920	1930
Females	178	255	331	690	483	527	798
% Pop.	35%	35%	32%	38%	40%	41%	42%



## Adult Population

*What percentage of the population were adult and how much does it change over time?*

The census has a field that lists the age of each person. This query is a count all of persons with age greater than or equal to 18.

Year	1860	1870	1880	1900	1910	1920	1930
Adults	341	487	676	1,240	844	868	1,275
% Pop.	67%	66%	66%	68%	70%	68%	67%

## Minor Population

*What percentage of the population were minors and how much does it change over time?*

This is a query is a count of all persons under the age of 18.

Year	1860	1870	1880	1900	1910	1920	1930
Children	167	249	355	592	370	413	614
% Pop.	33%	34%	34%	32%	30%	32%	33%

## Number of Families

*How many different families were there, and how did this change over time?*

This best way to determine a family is to find all persons who are listed as “keeping house” and for later census, listing the relationship of “wife”.

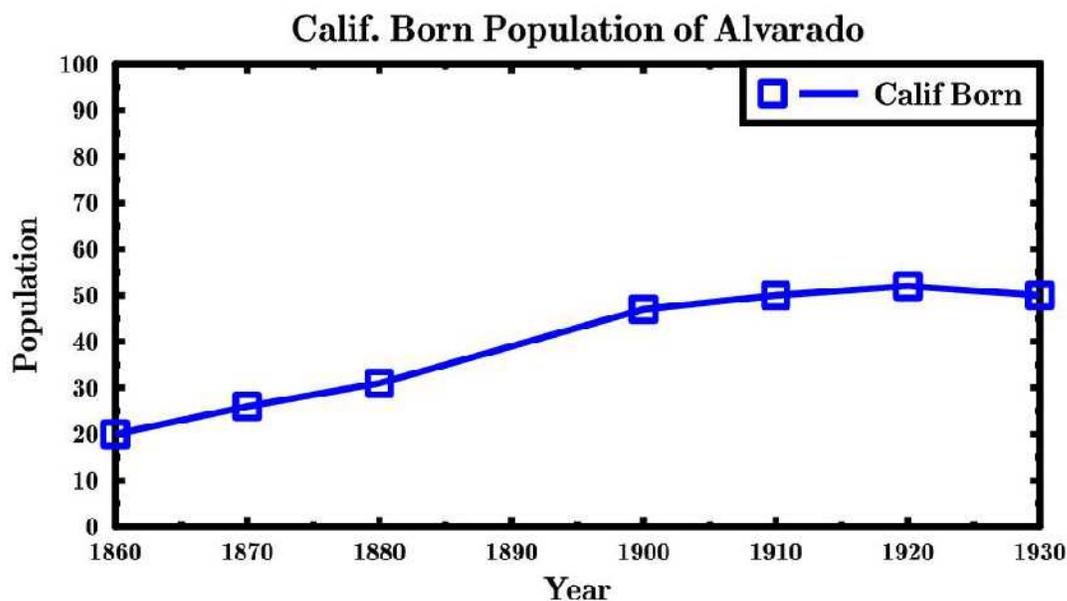
Year	1860	1870	1880	1900	1910	1920	1930
		103	133	253	183	237	340

## California Born

*What percent of the population were born in California, and how did it change over time?*

This is a query is a count of those persons with a nativity of California.

Year	1860	1870	1880	1900	1910	1920	1930
CA born	101	192	321	856	608	665	940
% Pop	20%	26%	31%	47%	50%	52%	50%

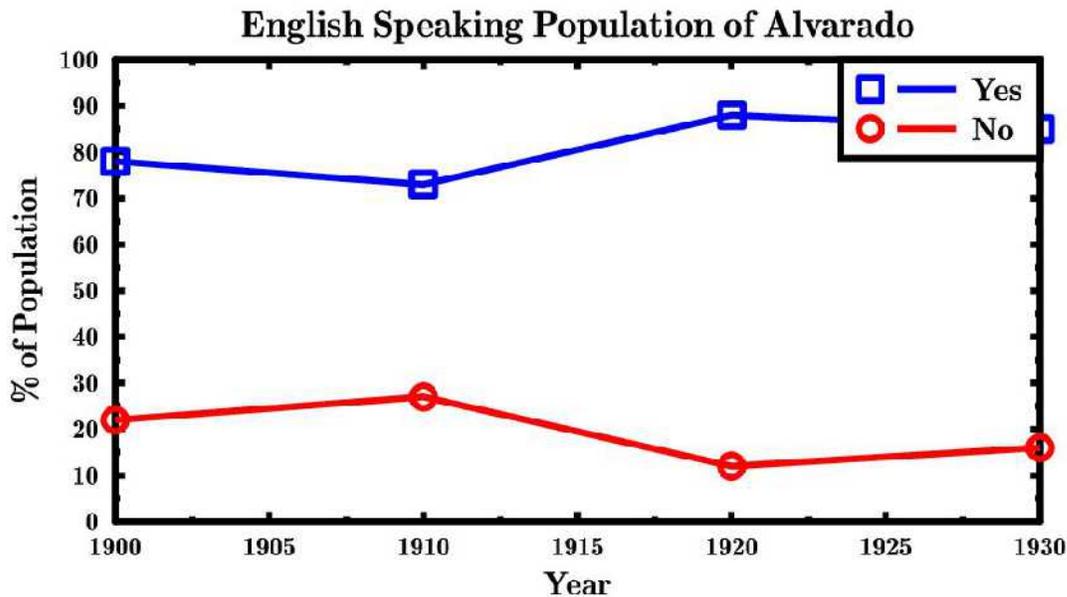


## English Speaking

*What percentage of the population spoke English and how did it change over time?*

From 1900 on, the census had a field for speaking English, with a value of Yes or No. This field was left blank for most persons under the age of 18. These queries are a count of persons with the value of “Yes” and “No” for speaking English.

Year	1860	1870	1880	1900	1910	1920	1930
Yes				1146	691	920	718
No				316	252	126	134
% Yes				78%	73%	88%	85%
% No				22%	27%	12%	16%



## Ethnic Groups

*What percentage of the population were from different ethnic groups and how much does it change over time?*

The census has a field for Race, but possible values for the field change over the years. In 1860, a person of Mexican ancestry is listed as white, but in 1910 they were listed as “Mex”. Except for Black, the ethnicity of a person is determined by their birth country, or the birth country of their father. For those ethnic groups listed below, most of the time the birth country of the father and mother are the same.

### Black

Year	1860	1870	1880	1900	1910	1920	1930
Black	0	0	0	3	0	0	4
% Pop.	0%	0%	0%	.16%	0%	0%	.21%

### Chinese

Year	1860	1870	1880	1900	1910	1920	1930
Chinese	0	106	261	157	66	14	10
% Pop.	0%	14%	25%	9%	5%	1%	1%

## Japanese

Year	1860	1870	1880	1900	1910	1920	1930
Japanese	0	0	0	169	103	154	138
% Pop.	0%	0%	0%	9%	8%	12%	7%

## Mexican

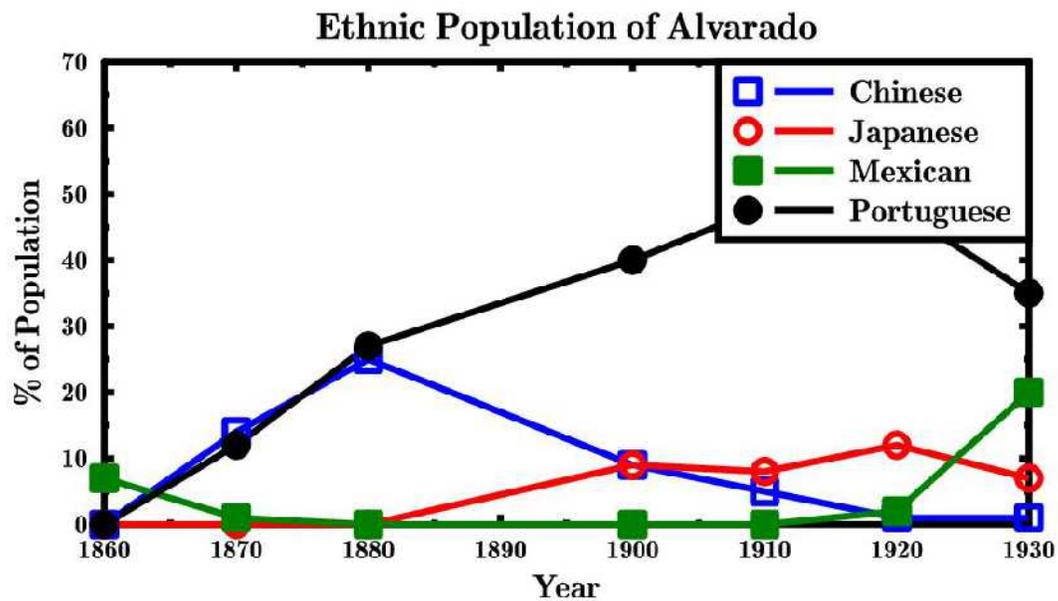
Year	1860	1870	1880	1900	1910	1920	1930
Mexican	35	9	0	4	1	21	379
% Pop.	7%	1%	0%	0%	0%	2%	20%

## Irish

Year	1860	1870	1880	1900	1910	1920	1930
Irish	46	33	74	97	47	36	15
% Pop.	9%	4%	7%	5%	4%	3%	1%

## Portuguese

Year	1860	1870	1880	1900	1910	1920	1930
Portuguese	1	89	277	726	580	615	665
% Pop.	0%	12%	27%	40%	48%	48%	35%



## Trade

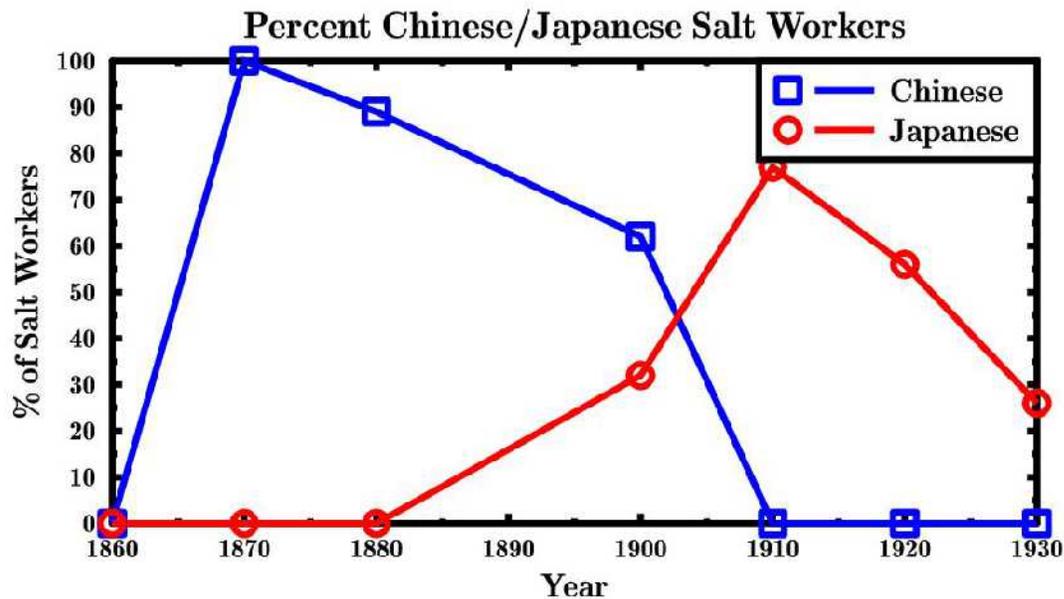
*What were the popular trades and how did they change over time?*

There was a field for Trade and then Industry.

Year	1860	1870	1880	1900	1910	1920	1930
Salt	0	9	57	40	64	110	65
Farm	49	153	138	456	179	165	270
Sugar	0	5	46	1	50	32	11
Dairy	1	0	0	3	62	46	36
Laborer	102	136	212	376	215	193	390

The three major industries in Alvarado were farming,

It is unclear why one person is listed in the Sugar industry in 1900, since the Alvarado Sugar factory was a major employer in Alvarado. It is possible that the local census takers listed the sugar workers as laborer and did not define the industry of the workers.



## Boarding Houses

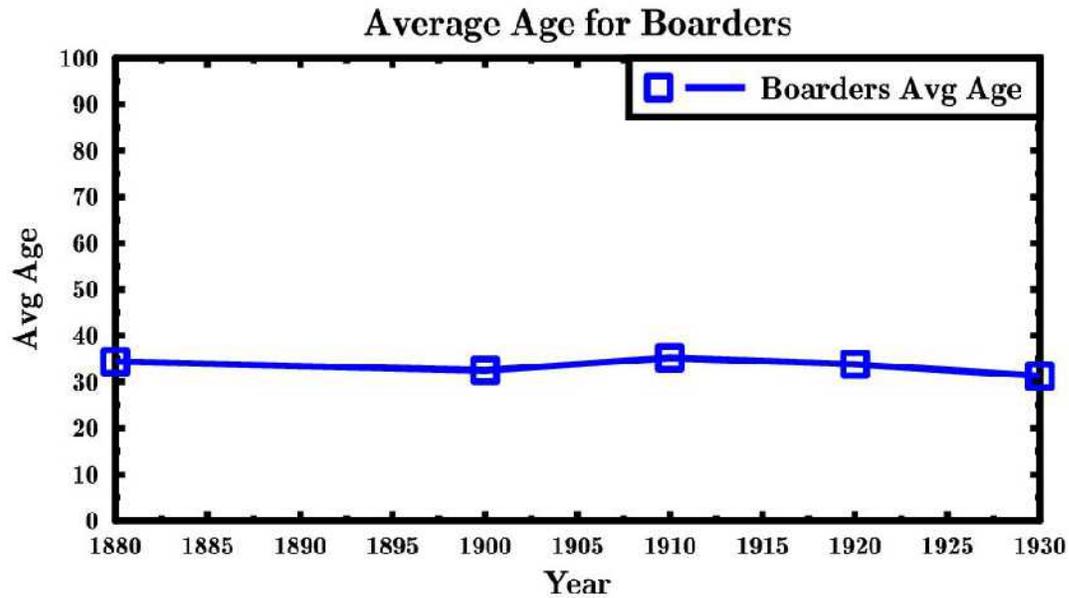
*How many boarding houses were there and how did it change over time?*

A boarding house is usually defined as a house whose primary business is rooms for boarders or lodgers. The census "relationship" field listed a person as "lodger". Where more than four people were listed as "lodger" the building was defined as a boarding house.

Year	1860	1870	1880	1900	1910	1920	1930
Boarding	8	14	19	23	13	12	9
Ethnic boarding	2	12	15	23	13	12	9
Greater than 20	0	0	4	4	2	1	1
Chinese	0	7	16	11	4	0	0
Japanese	0	0	0	11	6	6	0
Filipino	0	0	0	0	0	1	2
Mexican	2	0	0	0	0	0	4
Portuguese	0	0	0	0	1	1	1
Italian	0	0	0	0	0	1	2
Scandinavian	0	0	0	1	0	0	0

Year	1860	1870	1880	1900	1910	1920	1930
boarders	0	0	113	356	106	167	162
% of Pop	0%	0%	6%	19%	6%	9%	8%

Year	1860	1870	1880	1900	1910	1920	1930
Avg Age	0	0	34	32	35	34	31
Min Age	0	0	14	14	17	17	16
Max Age	0	0	65	70	79		70



## **The Analysis**

From the above data comes analysis. This section reviews the data in relation to what is known about Alvarado history, and makes some conclusions.

### **Boarding Houses**

The most interesting data to review is the boarding houses, as the data shows trends in two different aspects, the change in immigration into Alvarado and the increase and decrease in manual labor in Alvarado.

The ethnic breakdown of the boarding houses, over time, show that the first laborers were Chinese, then Japanese become the major labor force, then Filipinos and then finally Mexicans becoming the major labor force in the 1930 census. The change in Chinese is easily explained by the ban on all Chinese immigration from the Chinese Exclusion Act of 1883. As the Chinese population grew older, fewer were working in the labor force. As the Chinese declined, the Japanese population grew and they became a large part of the manual labor force. As the Japanese board houses decreased, the Filipino boarding houses increased.

The number of boarding houses shows an increase up to 1900 and then a decrease after that. The increase is probably explained by the different labor intensive industries growing larger and then the decrease in labor as the industries start to mechanize and need less workers to do the same amount of work. The two primary industries that used manual labor was farming and the salt works. The salt works consolidated in the 1920's and 30's. With fewer, but larger, salt plants, the number of workers was decreased. With the salt works being more mechanized, the knowledge level of the workers increased, eliminating the unskilled manual work force.

### **Ethnic Groups**

The results of these queries clearly show that different ethnic groups grew and decreased in population at different times. The Mexican population started at 7% and quickly declined to 0% for a number of years and then started an increase in 1920 and was significant in 1930.

The Chinese population started growing in 1870, peaked in 1880 and by 1900, was much less than the peak. Chinese were early immigrants to California, coming on the 1860's for the Gold Rush and the railroad work. In 1883, the Chinese Exclusion Act curtailed any further immigration. As the Chinese workers got older they were no longer part of the employment labor pool. This data also shows that older Chinese did leave the area, but it is unclear if they moved out of Alvarado or passed away.

The Japanese were not allowed to emigrate to America until about 1900. This is about the same time that the Japanese population of Alvarado goes from zero to 9 percent.

***Phillipino only 1% in 1920 and 2% in 1930.***

The data also shows the predominance of the Portuguese community. In 1920 and 1930, nearly half of

all people in Alvarado were Portuguese. The trend is very much the same for of Washington Township and some of the East Bay.

## **Population**

The population shows a steady growth from 1860 to 1900 and then a decline in 1910, with increases in 1920 and 1930. This decrease corresponds with the decrease in boarding houses and the number of manual laborers.

## **Males/Females**

The male population of Alvarado was always the larger than the female population. Males started out at 64 percent and ended at 58 percent. There was increase to 68 percent in 1880. This corresponds with an increase in the all-male manual labor force, as the boarding houses exclusively had male residents.

## **California Born**

Since California's population really started in 1849, the census of 1860 shows that most of the Alvarado population were not born in California. The number of California born increases over the years, but it seems to stay around 50 percent from 1900 on. This shows that there was a steady flow in immigrants to Alvarado.

## **Trade**

The numbers for the those working in the sugar industry show an odd drop in 1900. The previous year there are 46 workers and the following year there are 50 workers. Either the boundaries changed for the Alvarado census in 1900 to exclude the sugar workers, the boarding houses they worked in were not surveyed, or they were put down in a different category.

The salt industry shows a steady increase in workers and peaks in 1920. The early salt works were mostly smaller family businesses and the labor force did not take off until about the consolidation of the salts works into a just a few companies. By 1930, mechanization was having an affect on the number of workers needed.

The census data shows that dairy was a important industry in Alvarado after 1910. There is very little in the historical records that show that dairy was important to Alvarado. Alvarado was known for farming and ranching, but it was not clear that the ranching part included dairy.

## **Tools Used**

OpenOffice/LibreOffice Calc was used to edit the census records and convert them to .csv format. A perl script was used to convert the .csv files to SQL statements, that were then plugged into an SQLite database. Once all of the databases were created, perl scripts were used to run the different queries. From these queries, the data was entered into OpenOffice/LibreOffice Calc to get the percentage numbers. Graphs were created with GLE and saved as JPEG files. OpenOffice/LibreOffice Writer was used to create the final report. All of this was done under Lubuntu, a distribution of Linux.

OpenOffice/LibreOffice Base is a fine database program for editing databases and creating forms for using databases, but creating simple ad-hoc queries is rather simple, but laborious. It does have a downside of not using simple slightly non-standard SQL statements. SQLite is a command line driven tool that supports simple standard SQL statements and can be controlled by perl or shell scripts in a number of ways.