

133  
**UNITED STATES DEPARTMENT OF LABOR**  
**BULLETIN OF THE WOMEN'S BUREAU, NO. 82**

**THE EMPLOYMENT OF WOMEN  
IN THE PINEAPPLE CANNERIES  
OF HAWAII**

[PUBLIC—No. 259—66TH CONGRESS]

[H. R. 13229]

An Act To establish in the Department of Labor a bureau to be known as the Women's Bureau

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That there shall be established in the Department of Labor a bureau to be known as the Women's Bureau.

SEC. 2. That the said bureau shall be in charge of a director, a woman, to be appointed by the President, by and with the advice and consent of the Senate, who shall receive an annual compensation of \$5,000. It shall be the duty of said bureau to formulate standards and policies which shall promote the welfare of wage-earning women, improve their working conditions, increase their efficiency, and advance their opportunities for profitable employment. The said bureau shall have authority to investigate and report to the said department upon all matters pertaining to the welfare of women in industry. The director of said bureau may from time to time publish the results of these investigations in such a manner and to such extent as the Secretary of Labor may prescribe.

SEC. 3. That there shall be in said bureau an assistant director, to be appointed by the Secretary of Labor, who shall receive an annual compensation of \$3,500 and shall perform such duties as shall be prescribed by the director and approved by the Secretary of Labor.

SEC. 4. That there is hereby authorized to be employed by said bureau a chief clerk and such special agents, assistants, clerks, and other employees at such rates of compensation and in such numbers as Congress may from time to time provide by appropriations.

SEC. 5. That the Secretary of Labor is hereby directed to furnish sufficient quarters, office furniture, and equipment for the work of this bureau.

SEC. 6. That this act shall take effect and be in force from and after its passage.

Approved, June 5, 1920.

**UNITED STATES DEPARTMENT OF LABOR**

JAMES J. DAVIS, SECRETARY

**WOMEN'S BUREAU**

MARY ANDERSON, Director

**BULLETIN OF THE WOMEN'S BUREAU, NO. 82**

**THE EMPLOYMENT OF WOMEN  
IN THE PINEAPPLE CANNERIES  
OF HAWAII**

BY

**CAROLINE MANNING**



UNITED STATES  
GOVERNMENT PRINTING OFFICE  
WASHINGTON: 1930

For sale by the Superintendent of Documents, Washington, D. C. - - - Price 15 cents

UNITED STATES DEPARTMENT OF LABOR

WOMEN'S BUREAU

THE EMPLOYMENT OF WOMEN

IN THE CANNING INDUSTRY  
OF HAWAII



## CONTENTS

---

	Page
Letter of transmittal.....	v
Introduction.....	1
Development of the pineapple canning industry.....	4
Women in field work.....	4
Sources and scope of information.....	5
Personal data about the women.....	6
Race.....	6
United States citizenship.....	6
Age.....	7
Marital status.....	7
Schooling.....	8
Seasonal character of the industry.....	11
Irregularity in days operated per month.....	11
Irregularity in length of day.....	12
Irregularity in numbers employed.....	13
Occupations and conditions of work.....	15
Cannery structures.....	15
Service facilities.....	15
First aid.....	16
General welfare.....	16
Occupations and processes.....	16
Uniforms.....	18
Posture and seating.....	19
Wages.....	20
Hourly rates of pay.....	20
Incentive payments.....	21
Earnings not correlated with time worked.....	21
Earnings correlated with hours worked.....	22
Earnings correlated with days worked.....	23
Earnings for night work.....	24
Earnings and cost of living.....	24
Overtime.....	26
Usual hours.....	26
Extent of overtime in Honolulu.....	26
Extent of overtime in Maui.....	27

## ILLUSTRATIONS

	Facing page
Plate 1. A typical canning room.....	1
2. A trimming table.....	15
3. Packing the best slices.....	16
4. Packing small or imperfect slices.....	17
5. Packing the sliced cores.....	18
6. Removing bits of shell from crushed fruit.....	19

## CHARTS

	Page
Average days operated per month, five canneries, 1927.....	11
Number employed per month, four canneries, 1927.....	14

RECEIVED

## LETTER OF TRANSMITTAL

---

UNITED STATES DEPARTMENT OF LABOR,  
WOMEN'S BUREAU,  
*Washington, August 28, 1930.*

SIR: I have the honor to submit the report of a survey this bureau has made of the employment of women in the pineapple canneries of Hawaii, covering the hours, wages, and working conditions of the women at work in the peak season of the industry.

The importance of such a study is attested to by the fact that little information is available on the conditions of the employment of women in the Territory of Hawaii, and that canning, according to figures of the Bureau of the Census, is one of the two industries that employed the largest number of the women in Hawaii who were engaged in manufacturing in 1920.

I wish to take this opportunity to acknowledge the courteous co-operation of the employers in showing their canneries and fields and in furnishing plant records as to the workers and their wages and hours and as to fluctuations in the number of days operated from month to month throughout the year.

The survey was made and the report written by Miss Caroline Manning, industrial supervisor of the bureau.

MARY ANDERSON, *Director.*

Hon. JAMES J. DAVIS,  
*Secretary of Labor.*

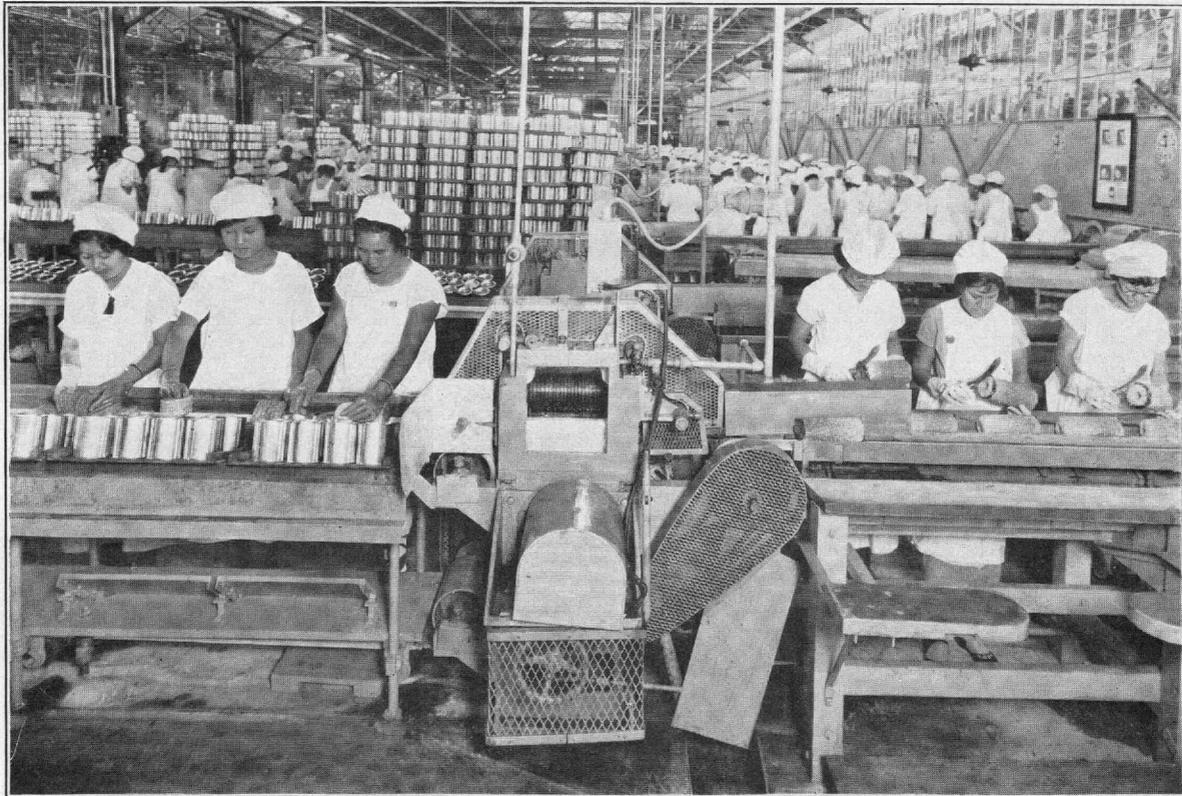


PLATE 1.—A TYPICAL CANNING ROOM

# THE EMPLOYMENT OF WOMEN IN THE PINEAPPLE CANNERIES OF HAWAII

## INTRODUCTION

With the exception of the reports of the United States Census little information is available about the employment of women in the Territory of Hawaii. This is not surprising, in view of the fact that industry is not highly organized and that only some 14,000 women are wage earners, a number exceeded in every State of the Union but Nevada and Wyoming.

Briefly, the census shows<sup>1</sup> that of the 14,263 women employed in Hawaii in 1920, almost half (45 per cent) were agricultural workers, chiefly on sugar plantations. The domestic and personal service group was next in size, followed by the professional group, largely teachers and nurses. Only about 700 were classed in trade, fewer than 600 in clerical occupations, and about 1,000 in manufacturing lines. Of the last named, the clothing trades, mainly dressmaking and tailoring, accounted for about 450 women, and the preparation of food products for 350 others.

Since the enumeration for this census was taken at a time when work was very dull in the pineapple canneries, hundreds of women who were seasonal workers in this industry were not included in the count; and there is no doubt but that for a few months of the year their number far exceeded the number in other manufacturing lines.

The census shows further that of all the women in the islands who were 10 years of age or more one-fifth were wage earners. More than three-fifths of the wage earners were as much as 25 years old, and three-fifths of those who were 15 or more were married. These high rates of mature and married women were due in large measure to the type found in agriculture and domestic service, the two kinds of work in which most women were engaged.

The unusual racial distribution of the 14,263 wage-earning women is particularly interesting. It is as follows:

Hawaiian.....	715	Chinese.....	493
Part Hawaiian.....	735	Japanese.....	9,233
Caucasian.....	2,658	All others.....	429
Portuguese.....	809	Filipino.....	305
Porto Rican.....	139	Korean.....	103
Spanish.....	72	Negro.....	16
Other Caucasian <sup>a</sup> .....	1,638	Other.....	5

<sup>1</sup> U. S. Bureau of the Census. Fourteenth Census: 1920, vol. 4, Population, Occupations, pp. 1270-1275.

<sup>a</sup> Chiefly professional and clerical workers.

In the absence of any published data, other than the figures quoted, upon the extent and kind of employment among the women in Hawaii, personal interviews with social workers and members of the industrial accident board of Honolulu proved very helpful in giving a background for this survey of the women in Hawaiian industries. The industrial accident board had first-hand knowledge of places of employment in the island of Oahu, on which Honolulu is situated, since it had inspected them during the year with a view to recommending to the management "practical and reasonable safety methods in connection with the employment, no safety legislation, as yet, having been enacted in the Territory."<sup>2</sup>

The consensus of opinion seemed to be that scattered here and there were a few factories, laundries, or stores managed in accordance with good working standards, but that for the most part work was disorganized and run on an exceedingly irregular basis. Although the Territory has enacted a child labor law with many of the standard provisions, there is no legislation regulating the employment of women, so the individual employer may operate his plant on a 10-hour or 12-hour schedule, or even longer, and on seven days a week if he thinks it desirable.

The arrival in port of a ship is likely to cause a mad rush in some of the commercial laundries. On such days work on the boat's linen supply not infrequently continues until 11 p. m. and, although the laundries have made an effort to organize a relief staff, may last from 7 a. m. until late in the evening day after day, with no compensating shorter hours during the week. However, at other times the girls frequently quit work before the end of the nine hours that constitute the standard day. Approximately 200 women, for the most part of Portuguese or Hawaiian descent, are employed in the commercial laundries in Honolulu.

Another important industrial group is that of the telephone operators, who are chiefly of Hawaiian or oriental extraction. The company employs only about 125 girls and there is great demand for these positions. From a list of some 200 eligible applicants on file, only 4 new appointments were made during the two years 1926 to 1928. While the operators had a grievance in the demands made by the company for excessive overtime, the standard 8-hour day sometimes being lengthened to 12 hours, the management in turn complained of the great irregularity of the workers, which made it impossible to keep within the standard schedule.

As important numerically as the telephone operators are the Japanese dressmakers. Small dressmaking shops dot almost every section of Honolulu and depend largely upon the labor of young apprentices, who work in crowded little rooms where no attention is given to proper lighting or seating and where none of the machines are motor driven. The apprenticeship continues for month after month of endlessly long days, during which the only return made by the employer is board, consisting chiefly of rice, dried fish or cabbage, and tea. The managing dressmaker, though depending

---

<sup>2</sup> City and County of Honolulu. Industrial Accident Board. Report of Secretary, Aug. 6, 1927.

largely upon these young apprentices, also employs home workers, who go back and forth daily between their homes and the shop with the embroidered garments.

The situation among the Chinese shirt makers, smaller in number than the dressmakers, is slightly better, for after their equally tedious apprenticeship they secure more lucrative positions, with some assurance of independence.

Numerous little oriental stores furnish employment for another representative group of girls who, like the others, know the meaning of long hours, in many cases beginning the day at 7 in the morning and continuing until 5 or 6, and if busy, especially in the tourist season, working until 9 at night. In rare instances they have been known to work seven days a week.

In sharp contrast to conditions of work in many of these oriental shops are department stores and various kinds of mercantile establishments whose labor policies are progressive and whose ideals compare favorably with many on the mainland. The 8-hour day and 44-hour week are common and the wage of experienced saleswomen is rarely below \$12 a week.

Although restaurants are numerous, few women are employed in them, and there are very limited opportunities for women in binderies and almost none in manufacturing lines other than clothing and food products. There is, however, one outstanding case of a tin-can factory that employs about 60 women, for the most part orientals but all English-speaking. A few work on punch presses, cutting out the ends of the cans, but many more are inspectors and packers. Hourly rates of pay supplanted piecework with the introduction of the automatic machine that sets the speed, and wage rates are said to be a little higher than is customary in many other establishments. The standard 8-hour day prevails here except in the busy summer months, when 10 hours a day is customary. The factory manufactures all the tin cans for the Hawaiian canneries and is practically a part of two establishments preserving fruit, since the cans are conveyed mechanically to the adjoining packing houses for immediate use.

In Honolulu, barbers are almost exclusively dainty little oriental girls, who in many cases are on duty from 7 or 8 in the morning until 8 in the evening, and even later on Saturdays. Like the dressmakers, their meals consist chiefly of rice, dried fish, and tea, often furnished by their employers. Tips play such a large part in the compensation of the barbers that it is impossible to estimate what the girls make at their trade.

There are no authentic data by which to check the impressions of those persons whose acquaintance with local conditions formed the basis of this bird's-eye view of women wage earners in Honolulu, but there seemed to be quite common agreement that in many cases the wages paid formed little incentive to effort. Extreme instances were cited of oriental girls earning no more than \$3.50 a week, but again the amount would be as much as \$8.50. The range in the shops probably was from \$30 to \$50 a month. The prevailing rate in some of the laundries was 16 cents an hour and in telephone exchanges it was between 19 and 20 cents.

In consideration of the limited time in which this study had to be made, it seemed best not to attempt to visit the small establishments, which would have resulted only in a repetition of the findings of the local group described here. Instead, since the pineapple canneries, the industry second in importance in the islands, were employing hundreds of women at the time of the proposed survey, it was decided to make a more intensive study of this one specialized industry.

#### DEVELOPMENT OF THE PINEAPPLE CANNING INDUSTRY

The first pineapple is said to have been planted in Hawaii by a Spaniard as early as 1813, but not until 1892 was there any commercial canning of the fruit and the phenomenal development of the industry has taken place entirely within the present century. Thirty years ago, a total pack amounted to only about 2,000 cases. By 1928 the pack that began the century with 2,000 cases had reached almost 9,000,000 cases, produced in several most sanitary canneries, with complete modern equipment and located on several of the islands.

In 1906 the American Can Co. established in Honolulu a factory for the manufacture of tin cans, and in the same year the Island Railroad completed a branch leading from that city into the pineapple fields. Within 5 years the railroad hauled 27,000 tons of pineapples in a season, and within 13 years the average haul of this same little railroad was 2,400 tons a day. Illustrative of this expansion is the story of one firm, a pioneer in the industry. In the season of 1903 its total output was less than 2,000 cases; by 1920 it was over 1,750,000 cases.

By 1908 Hawaiian-canned pineapple was no longer a novelty in the New York market and by 1910 it began to be popular in European capitals. By 1914, when an advertising campaign was put on to extend the market for the goods, the initial stages of development were well past. Not only have the methods of canning changed, but experiment has improved agricultural practices and ways have been found of eliminating all the cannery waste except water. The outer shell is dried and made into bran. Citric acid, alcohol, and vinegar are other by-products.

#### WOMEN IN FIELD WORK

Women who work in the pineapple fields are predominantly Japanese and invariably work with the men of their families. During the survey not more than a dozen were seen at work, and these few were engaged here and there at the side of the field cutting off the crowns of the pines that had just been harvested, and packing the fruit in shipping crates for the canneries. At other seasons women are engaged in comparatively small numbers trimming the suckers, slips, and crowns preparatory to planting. The earnings for this work rarely amount to over a dollar a day. But in addition to the money wage, plantation workers benefit from free rent, fuel, water, and sometimes light. Medical service is provided, garden space is available, and merchandise can be purchased at cost at plantation stores. Prof. Romanzo Adams, of the University of Hawaii, comparing the sugar and pineapple plantations, states that "the situation

on the pineapple plantations is more satisfactory. This may be explained in part by differences inherent in the industry, but perhaps of greater importance is the fact that pineapple production has not taken over the whole early tradition of plantation management. Of later development and coming after the abolition of indentured labor, its traditions are more favorable to labor. Apparently there is less race discrimination. They get along without a plantation policeman. The discipline is less rigid. The opportunities for promotion are better."<sup>3</sup>

#### SOURCES AND SCOPE OF INFORMATION

Three canneries in Honolulu and four on the island of Maui, which together canned about six-sevenths of the 1928 pack of Hawaiian pineapples, were included in the survey. The total employment in the seven canneries at the time of the visit was over 9,000, about half men and half women. The canneries varied in size. Two had about 500 employees each, three had about 1,000 each, and two had well over 2,000 each. Of the five other canneries operating that year, but not visited, some worked very spasmodically and with a very limited number of employees even during the peak season, and the others were located on more remote islands.

At the time of the bureau's survey, the canners extended courteous cooperation in showing their canneries and fields, and in furnishing plant records not only on the wages and working hours of about 4,000 women employed during the peak period but upon fluctuations in the number of days operated and the numbers employed from month to month throughout the year. The material so generously furnished was illustrative also of the racial distribution, age, marital status, and schooling of the women employees. In fact, the canners left nothing undone that would help in the preparation of this report. Although the type of records kept was not always uniform from plant to plant, sufficient data were at hand on every phase studied to make the results representative of the pineapple-canning industry as a whole.

---

<sup>3</sup> Adams, Romanzo and Kai, Dan Kane-Zo. *The Education of the Boys of Hawaii and Their Economic Outlook*. University of Hawaii Research Publications No. 4. January, 1928, pp. 43, 44.

## PERSONAL DATA ABOUT THE WOMEN

Some knowledge of the women who composed the working force of the canneries was obtained from the office employment records. In 5 canneries, facts about the race and age of the workers were obtained; in 4, their marital status; in 2, their schooling; and in 1, their citizenship.

### Race.

The influx of foreign races into Hawaii began with the large-scale development of the sugar industry about 1870. So necessary was outside labor at that time that immigration was encouraged by legislative act and later by the Planters' Association. For more than 50 years immigration has been practically the only source of labor for the growing industries. By 1920, native Hawaiians and Americans constituted only 19.8 per cent of the female population.<sup>4</sup> In view of these facts it is not surprising that half the cannery women reported upon were of Japanese or Chinese ancestry.<sup>5</sup> But whether born in Hawaii or in China or any other Pacific country, the effect upon a mainland visitor of the rank and file of cannery employees is that of a decidedly foreign group. The following distribution of the women in five plants visited indicates how very prevalent are the foreign races and how dependent upon them are the canners for labor in the industry:

Racial descent	Women reported	
	Number	Per cent
Total -----	3, 883	100. 0
Japanese -----	1, 248	32. 1
Hawaiian -----	810	} 26. 6
Part Hawaiian -----	221	
Chinese -----	723	18. 6
Portuguese -----	358	9. 2
Filipino -----	192	4. 9
Korean -----	148	3. 8
Porto Rican -----	55	1. 4
American -----	56	1. 4
Other races -----	72	1. 9

### United States citizenship.

Although one cannery kept a record of the citizenship of the various races in its employ, any analysis of data on this point is offered with hesitancy for the reason that the child born in Hawaii

<sup>4</sup> U. S. Bureau of the Census. Fourteenth Census: 1920, vol. 3, Population, p. 1172.

<sup>5</sup> The reason for using the phrase "racial descent" or "ancestry" instead of the word "race" is explained in the annual report of the Governor of the Territory of Hawaii: "Tables showing race proportions in the Territory are apt to be misleading in that they class under the various racial groups a large number of persons born in Hawaii and who are therefore entitled to all the rights of American citizenship."—U. S. Department of the Interior. Annual report of the Governor of Hawaii for fiscal year ending June 30, 1929, p. 46.

of Japanese parents is still called Japanese by Caucasians as well as by the orientals themselves. The following summary, showing to what extent the women in a few of the numerically most important races in this cannery were citizens of the United States, is included here because it emphasizes further the extent to which labor of foreign descent prevails in the canneries.

Racial descent	Number of women reported	Per cent who were citizens of the United States
Hawaiian and part Hawaiian	480	99.2
Portuguese	91	86.8
Chinese	426	67.6
Japanese	419	53.2
Korean	110	52.8
Filipino	62	11.3
Other <sup>1</sup>	53	( <sup>1</sup> )

<sup>1</sup> Too scattering to be representative. Includes 14 Americans.

These data showing the extent of "citizenship" may well be regarded as a very close indication of the proportion who, although Hawaiian born, are the children of foreign parents. Lost in the miscellaneous group of "other races" are 14 Americans, in striking contrast to the hundreds of orientals and other foreigners and typical of the racial distribution of American and foreign labor throughout the islands.

### Age.

That the women surveyed were a decidedly young group is evident in the following distribution from the records of five plants, which shows that half the women were under 20 years of age, a condition explained in the section on vacation work that follows. (See p. 9.)

Age	Women reported	
	Number	Per cent
Total	3,219	100.0
14 and under 16 years	113	3.5
16 and under 20 years	1,501	46.6
20 and under 30 years	608	18.9
30 and under 40 years	456	14.2
40 and under 50 years	383	11.9
50 years and over	158	4.9

### Marital status.

According to the records of four plants, the group was fairly evenly divided between single women and those who were or had been married: 52.5 per cent of the 2,657 women reporting marital status were single and 47.5 per cent were married, widowed, separated, or divorced.

In one cannery remote from a population center and therefore dependent upon plantation labor, the proportion of older women was greater than usual. In this case only about one-fourth of them (27.2 per cent) were under 20 years of age and over one-third (35.3 per cent) were 30 or more. Quite naturally the proportion of married women also was larger than usual in this cannery, where not much more than one-fourth (28.7 per cent) were single girls. This company found it necessary to maintain a day nursery adjoining the cannery grounds for the accommodation of the many small children that the mothers could not leave at home.

### Schooling.

Two plants furnished interesting data upon the amount of schooling the women had had and what kinds of schools they had attended or were attending, cannery work being a vacation job for many who planned to return to school.

School last attended	Per cent of women in 1928 who last attended the school specified
Total number of women.....	1, 073
None.....	12. 0
Foreign.....	7. 2
First to eighth grades, inclusive.....	60. 6
High school.....	18. 6
University.....	1. 6

Over one-half of the entire group had attended at least the seventh grade; one-fifth were high-school or university students. The high-school students were evenly distributed among the first, second, third, and fourth years, and fully half of those who were last enrolled in grade schools came from the seventh or eighth grades, only a negligible number having gone no further than the first, second, or third grades.

Proof that the standard of schooling among the cannery employees has been raised in these plants in recent years is shown by comparison of the ranking of all women whose names were on the books in 1927 with that of three years earlier.

School last attended	Per cent of women who last attended the school specified	
	1924	1927
Total number of women.....	1, 256	1, 007
None.....	32. 3	22. 0
Foreign.....	17. 2	10. 7
First to sixth grades.....	19. 4	22. 0
Seventh and eighth grades.....	20. 9	22. 4
High school.....	10. 1	21. 6
University.....	.....	1. 1

The most striking changes were the decrease in the number who had never attended school or else had been in foreign schools only and the increase in high-school and university students. A comparison with the enrollment in 1928 shown in the previous list indicates that in 1928 the proportion who had never attended school had decreased to a remarkable degree since 1927.

An idea of the extent to which the cannery rely upon the help of young people still in school may be gained from the comment of one employer to the effect that if the peak season for cannery work and the summer vacation in the schools did not coincide, as happily they do at present, it would be necessary to rearrange the school program so that vacation would fall when the help of pupils was most needed in the cannery. An outstanding example of the dependence upon school students was a cannery that maintained dormitories for the young people who were brought from a neighboring island. The dormitories were well-constructed buildings supplied with adequate modern plumbing conveniences and with comfortable accommodations, usually housing only one or two girls to a room. Teachers had general supervision of the groups and it was considered a great opportunity to go to the cannery for a few weeks. Besides the matrons for the dormitories, a nurse and a doctor were within call. Board, consisting of the kinds of food to which the young people were accustomed, was furnished for \$2.10 a week.

A complete and authoritative analysis of vacation work is found in the report of the Department of Public Instruction of the Territory of Hawaii for 1927-28. This analysis of the summer employment of students in 1928 is based upon a census taken after the schools reopened. In this inquiry "Only regular employment for a period of one month or more was considered, and figures were secured only for work other than ordinary home duties."<sup>6</sup> A summary from this report, showing the ages of the students and the types of work in which they had engaged, follows:

*Ages of 12,015 children employed during the school vacation, 1928<sup>7</sup>*

	Per cent
Under 12 years.....	25.0
12 and under 14 years.....	27.4
14 and under 16 years.....	25.5
16 years and over.....	22.1

The numbers fall into four comparatively equal groups. That the class "16 years and over" was the smallest undoubtedly is due to the fact that fewer employees as old as this were in school.

<sup>6</sup> Territory of Hawaii. Department of Public Instruction. Biennial Report, 1927-1928, p. 127.

<sup>7</sup> *Ibid.*, p. 128.

*Summer employment of school students, 1928*<sup>1</sup>

Kind of work	Boys			Girls		
	Total number	Per cent distribution of those—		Total number	Per cent distribution of those—	
		Under 14 years	14 years and over		Under 14 years	14 years and over
All kinds.....	7,764	100.0	100.0	4,251	100.0	100.0
Pineapple production:						
Field work.....	631	6.9	9.4	205	5.4	4.2
Cannery or mechanical work.....	1,299	3.5	30.9	1,211	12.0	47.5
Sugar production:						
Field work.....	2,966	52.0	23.5	943	33.3	9.4
Mill or mechanical work.....	146	.6	3.2	14	( <sup>2</sup> )	.7
Other occupation away from home.....	1,298	12.4	21.3	751	13.6	22.3
Regular employment at home other than house or yard work.....	1,424	24.5	11.7	1,127	35.7	15.9

<sup>1</sup> Territory of Hawaii. Department of Public Instruction. Biennial Report, 1927-1928, p. 128.

<sup>2</sup> Less than 0.05 per cent.

Of the 12,000 young people who found lucrative employment during the summer, it is natural that the leading industries of the island, sugar and pineapple production, engaged more than one-half—almost two-thirds of the boys and well over one-half of the girls. Very many more were employed in the sugar fields than in the pineapple fields, but in the case of the mills and canneries the opposite is true, since only about 150 young people were employed in the sugar mills, though as many as 2,500 worked in the pineapple canneries.

The outstanding occupations affecting almost one-half of the girls 14 or more years old were in the pineapple canneries, and while canning was also the most important industry in the case of the older boys, the sugar fields offered them extensive opportunities for work.

That this school record shows as many as 400 children under 14 working a month or more in the canneries seems a contradiction to the employment records secured in the survey, which showed no employees under 14. However, this may be accounted for by the fact that the figures previously quoted (see p. 7) were based upon age reports from only five canneries, in some of which an effort had been made to eliminate children under 16. Certain managers realized that observance of the child labor law, which limits employment of children under 16 to 8 hours a day and 48 hours a week, would complicate the organization of the plant and prevent the maximum operation of the cannery for a 9-hour or 10-hour day. The inference is, then, that the canneries that did not furnish age records were less strict in their observance of the child-labor regulations.

## SEASONAL CHARACTER OF THE INDUSTRY

Although the big harvest of the pineapple crop falls in midsummer, there is no season when pines are not maturing, which means, of course, that there is some cannery employment throughout the year. Various kinds of data furnished by the employers gave the number of days operated in a month, or the number of hours operated in a day, or the average employment from month to month, all of these emphasizing the seasonal character of an industry that cans but one product.

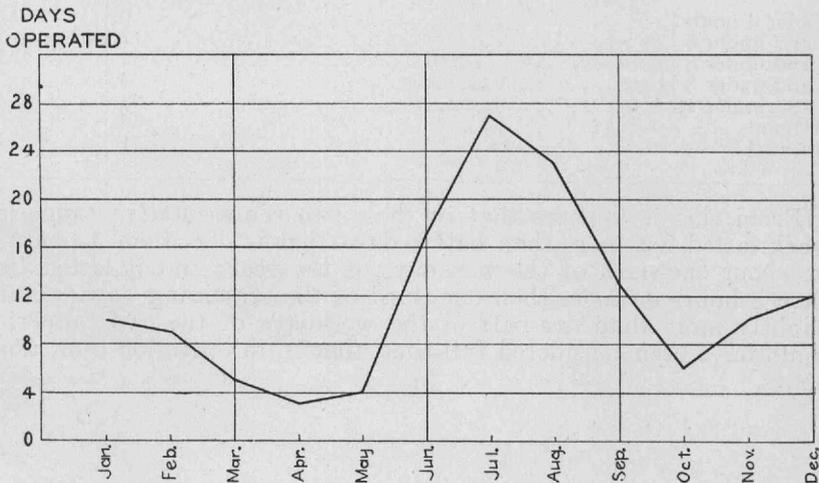
### Irregularity in days operated per month.

*Days operated in five canneries in 1927,<sup>1</sup> by cannery and month*

Cannery	Total for year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Average for all plants.....	139	10	9	5	3	4	17	27	23	13	6	10	12
No. 1.....	106	5	4	2	2	3	20	26	17	10	5	5	7
No. 2.....	147	11	13	5	1	2	14	29	24	17	6	12	13
No. 3.....	131	10	7	4	2	4	22	28	20	13	2	7	12
No. 4.....	148	12	10	7	4	2	11	26	27	12	10	14	13
No. 5.....	165	12	12	8	5	9	20	27	27	12	7	12	14

<sup>1</sup> In plant No. 3 the year reported is from August, 1927, to July, 1928.

### AVERAGE DAYS OPERATED PER MONTH, FIVE CANNERIES, 1927<sup>1</sup>



<sup>1</sup> For one plant the year reported is from August 1927 to July 1928

From the figures given in the foregoing summary it is evident that June, July, and August are the peak months and that the low points fall in April and October. During the winter the canneries customarily operate two or three days a week, while in April and May work may be limited to one day a week or even less, depending somewhat upon the extent of the fields that supply the pines. But by the middle of June the harvest is in full swing and six days a week is the rule, with occasionally seven days. The accompanying chart illustrates the fluctuation in days operated in the five canneries reporting.

#### Irregularity in length of day.

Not only does the number of days of operation vary from month to month but there is great irregularity in the number of hours operated per day. For example, a cannery that operated on only five days in April, 1927, reported the hours as varying from 3½ on one day to 5, 5½, and 6 on the other four. In August, however, this plant was in operation on 27 days. Twenty-one days were of 10 hours each, and the other six varied from 5 hours on two days to 9, 9½, and 10½ hours on the remaining four. For another firm the 1927 record showed a total of 3½ hours operated in April as against 283 hours in July.

Further emphasis on the variation from day to day may be found in the 1927 records of two firms, the distribution of whose workdays according to length was as follows:

Length of workday	Number of days of length specified	
	Cannery A	Cannery B
Total days operated.....	165	106
Under 3 hours.....	9	7
3 and under 5 hours.....	17	13
5 and under 8 hours.....	44	35
8 and under 9 hours.....	33	23
9 and under 10 hours.....	28	8
10 hours.....	33	6
Over 10 hours.....	1	14

From this it appears that in these two representative canneries work lasted not more than half a day—that is, less than 5 hours—on about one-sixth of the workdays of the year; and it lasted less than 8 hours on more than one-third of the remaining days. Only slightly more than one-half of the workdays of the two canneries could have been considered full time, that is, in operation 8 or more hours.

**Irregularity in numbers employed.**

Even more important than the number of days or hours of operation is the number of men and women employed at various seasons of the year. Four representative canneries furnished data upon average employment from month to month, and these form the basis of the following summary, typical of conditions in the industry:

*Numbers employed in four canneries in 1927,<sup>1</sup> by sex and month*

Sex	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Both sexes	1,670	1,809	1,733	1,621	1,749	3,437	4,812	4,139	2,300	1,615	1,599	1,649
Men	1,139	1,213	1,189	1,142	1,181	1,452	2,640	2,214	1,396	1,014	988	1,012
Women	531	596	544	479	568	1,985	2,172	1,925	904	601	611	637
									Both sexes	Men	Women	
Maximum employment									<sup>2</sup> 4,812	<sup>2</sup> 2,640	<sup>2</sup> 2,172	
Minimum employment									<sup>1</sup> 1,599	<sup>3</sup> 988	<sup>4</sup> 479	
Difference between maximum and minimum									3,213	1,652	1,693	
Per cent minimum is of maximum									33.2	37.4	22.1	

<sup>1</sup> For 1 plant the year reported is from August, 1927, to July, 1928.

<sup>2</sup> July.

<sup>3</sup> November.

<sup>4</sup> April.

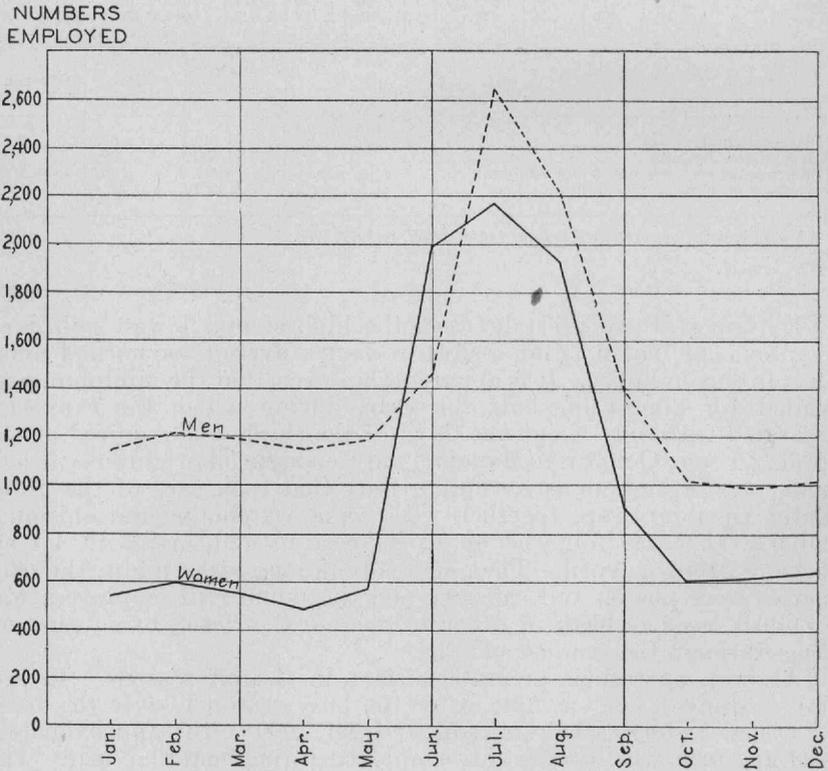
Extremes are so great between the highest and lowest points of employment that it is impossible to discuss average or normal numbers in this industry. It is apparent, however, that the minimum prevailed for almost one-half the year, during which the canneries operated with only about one-third of the employees required at the peak. From October to January only enough labor was needed to man possibly one or two canning lines that took care of the gradually ripening crop, together with some warehouse and shipping labor. This was followed by an increase in numbers, with a temporary drop in April. Then suddenly, almost over night, the canneries were put on full capacity and the number of employees was doubled, even trebled, in order to operate the dozen or so canning lines through the summer months.

At best, operations are intermittent in the off seasons. In one large cannery, for example, after the busy season is over the force of casual and extra help is reduced from 1,000 to the approximately 400 key men who are steadily employed throughout the year. The standard 10-hour day of the peak is reduced to an 8-hour day. Instead of operating 20 canning lines, as in summer, 5 lines or even fewer take care of the spasmodic runs of ripened fruit, and for this intermittent work there is always enough casual labor available and glad to get work for two or three days a week.

In most canneries it is customary to employ as many women as men during the busiest summer months—occasionally more women than men—but during the rest of the year every cannery employs more men than women, sometimes twice as many.

The accompanying graph, illustrating the fluctuation in employment from month to month of the four canneries reporting, makes clear the suddenness of the changes and the extent to which men predominate in the work force. For a complete picture of the seasonal fluctuation, this graph should be considered in conjunction with that showing number of days operated and with the figures on daily hours.

NUMBERS EMPLOYED PER MONTH,  
FOUR CANNERIES, 1927<sup>1</sup>



<sup>1</sup>For one plant the year reported is from August 1927 to July 1928



PLATE 2.—A TRIMMING TABLE

## OCCUPATIONS AND CONDITIONS OF WORK

### **Cannery structures.**

Not one of the canneries visited was in an old building, and in this they had a distinct advantage. Those built most recently were of steel and concrete, the older ones having more wood in their construction. Many of the workrooms were high, light and airy, and spotlessly clean. The one or two which, though not insanitary, seemed dark and drab, would have been improved by a more generous use of white or light paint or by a rerouting of the work to eliminate the impression of confusion and overcrowding.

Drainage always presents a difficult problem in a cannery, but it was the exception to find a floor that was not adequately provided with easy grades to branch and main gutters. In only one cannery was water seen standing in pools, and it was in another part of the same cannery that the only sticky floor was noted. In one good layout the dimensions of the securely covered gutters increased gradually from 3 or 4 inches to 18 inches at the end of the drainage system. In a plant where the gutters were lengthwise under the packing-line tables, there were concrete curbs on either side of the gutters as precaution against an unusual overflow at the place where the girls were working.

Quite generally no effort was spared to keep the concrete floors dry and clean. Rarely was there even a scrap of fruit on the floor, and when there was a sudden overflow of sirup or fruit on the sealing machine, as must happen occasionally, a janitor appeared almost immediately to clean it up.

### **Service facilities.**

Although all the canneries had such equipment as was necessary in the way of washbowls, toilets, and places to hang wraps, the standards varied greatly from plant to plant and nothing can be described as average or typical. A small, dark wash room in an out-of-the-way corner, crowded with three bowls having only cold water, and cleaned "when necessary," could not be compared with a large, airy wash room with a line of porcelain bowls, supplied with hot and cold water, soap, and individual towels, and with a matron in constant attendance. In the more completely equipped canneries wash sinks also were placed at convenient intervals through the canning rooms. Occasionally shower baths were included in the sanitary equipment, and these were reported to be particularly popular when supplied with warm water as well as cold. There was no lack of bubbler drinking fountains. In the majority of the plants toilet facilities measured up to the best of mainland standards.

As the wash and toilet rooms differed from plant to plant, so did other facilities. Some cloakrooms were furnished with metal lockers in large number; in others there was a limited number of

lockers; in still others wall hooks and racks sufficed. In a few canneries there were pleasant rest rooms that could properly be called such, while in other canneries there seemed to be nothing to answer this purpose. Even in the matter of lunch rooms the type varied from bare table and benches, with no hot food or drinks available, to modern cafeterias in shining white rooms, furnished for comfort instead of with the barest essentials, and where hot tea flowed from a large central urn as freely as water. In these cafeterias, 5, 10, and 15 cent meals, consisting largely of the customary diet of the orientals, were in great demand and served to hundreds daily.

### First aid.

Reference to service facilities would be incomplete without mention of the first-aid rooms found in a majority of the canneries visited. Some of these were so complete as to be like emergency hospitals. The nurses in charge did much more than care for minor cuts or illnesses. They were personnel workers in every sense of the word, mingling with the employees in the plant and keeping a watchful eye on general health conditions and sanitation.

### General welfare.

Besides rest rooms, cafeterias, and first-aid departments, some individual feature, such as housing for employees, either in dormitories or in camps, bus transportation, playgrounds, or day nurseries, characterized each firm. In one of the day nurseries efficient maids cared for the young children, following a regular program of baths, naps, and meals, the last named being supplied by the firm.

### Occupations and processes.

The distribution of the male and female employees throughout the chief departments was quite uniform in all the canneries, and the following groupings in one plant on a day in July, 1928, are typical of all.

Department	Number of employees	
	Male	Female
All departments.....	563	450
Loading platform.....	105	-----
Trimming.....	8	182
Canning.....	61	201
Processing.....	79	-----
Core table.....	5	9
Crushed.....	19	1
Eradicator.....	27	19
Can room.....	24	5
Presses.....	3	-----
Cooling room.....	36	-----
Shop.....	26	-----
Warehouse.....	136	29
Miscellaneous.....	34	4



PLATE 3.—PACKING THE BEST SLICES



PLATE 4.—PACKING SMALL OR IMPERFECT SLICES

16-2

The work of the women is limited almost exclusively to the preparation of the fruit—cleaning, sorting or sizing, and packing in the cans. The men employed in departments devoted to these preparatory processes are chiefly helpers, who remove trays of cans or in other ways keep up a smooth and steady flow of work. No women are engaged in the processing or actual cooking of the fruit, and men predominate also in the heavier jobs in the can loft, on loading platforms, in the cooling rooms, the machine shop, and the warehouse.

Machines have eliminated much of the heavy and sticky handwork in connection with the preparation of the fruit, so that nothing but the simplest kind of labor is now required of the women.

One of the most ingenious of these machines is the ginaca, which peels, cores, and cuts off the ends of the fruit; another machine, fitted with a series of parallel knives, slices the fruit; and a third, called the eradicator, salvages what bits of edible pineapple are left on the shell that is discarded by the ginaca.

As the ripe fruit comes from the field the crates are emptied into hoppers that feed the ginacas. From these one pine at a time is forced against a rapidly revolving knife that cuts off the shell deep enough to remove the eyes. At the same time a plunger removes the core and the ends are cut off, all at the rate of 40 to 50 pines a minute. The cylinder of fruit then slides onto an endless belt that keeps it in continuous movement from the ginaca through to the packing of the can.

It is along this conveyor that most of the women are employed. The first group, known as trimmers, remove with sharp knives any parts of the shell that the ginaca may have missed on pines that not infrequently weigh 2 or 3 pounds. A gang of 16 to 18 trimmers is necessary to keep up with the speed of one machine. This is as skilled and heavy a job as any done by the women. In one cannery, if a trimming gang consisted of as few as 14 experienced women, they received what would have been the pay for the standard gang of 16.

The next is a machine operation. The conveyor carries the procession of pines through a box fitted with automatic washing sprays into the multiple slicing machine.

The sliced fruit then is ready to be packed by hand. At this table about 18 women pack the fruit in cans, selecting the slices as they are carried by on the moving belt. At the packing table in one cannery the first five girls were selecting the best of the fruit for the "fancy" pack, the next six were selecting the next best grade, or "standard" pack, while the girls at the far end of the conveyor were filling the cans with the imperfect or broken slices.

Beyond this point no women are employed in strictly canning operations. Men transfer the filled containers to the canning line, where the sirup is added and the cans are automatically exhausted, sealed, and put into the steam cookers. The time required for all the processes, from the ginaca machine to the cooking, is about 20 minutes.

The types of work done by the women are shown clearly in the accompanying illustrations.

No. 1 (see frontispiece) is a view, unobstructed by overhead shafting, of a typical canning room, the department in which most of the girls work. The 20 or more parallel worktables, known as packing lines, disappear in the background. To the right and immediately on the other side of the partition, which is made partly of glass, are the ginaca machines, each supplying a packing line or table. When topped, peeled, and cored by the machine, the pines slide one at a time onto a belt that carries a procession of fruit through a small opening in the wall directly onto the trimming table. In the middle of the picture, between the girls at the trimming table on the right and those at the packing table on the left, may be seen the slicing machine.

Illustration No. 2 is a close-up of a trimming table, the girls being seated on both sides of the table, which is so constructed that the waste is easily disposed of without spattering or smearing the workers.

Illustrations 3 and 4 are close-ups of sorting or packing tables, No. 3 showing the positions nearest the slicing machine and No. 4 being taken from the end of the belt. The girls nearest the slicer select the better grades, and therefore have the most desirable places, while at the far end there are only small or imperfect slices. To equalize the work, one superintendent interviewed had arranged for the girls to rotate positions at the packing tables, thus giving each an opportunity to pack from the first position. The reach from the belt to the can was longer in some canneries than in others, due to differences in the table arrangement. For some of the shorter girls the constant stretching to fill the cans was a real strain.

When pineapples are not picked until ripe, the cores are edible, and they are used to a great extent by confectioners. Illustration No. 5 pictures a unit of girls filling and weighing cans that contain the sliced cores. Here, too, the routing of the work is economical. From the sharp plunger that cuts the long core out of the pineapple in the ginaca machine, the cores drop down a chute and pass through a slicer, and a conveyor belt carries the fruit directly to the core-packing table such as is pictured.

Every bit of the edible fruit left in the shell by the knives in the first peeling is scraped off by the eradicator. Illustration No. 6 shows a slowly moving conveyor of crushed pineapple as it comes from this machine. In this case the eradicator, like the ginaca, is on the other side of the partition and not seen in the picture. It is the business of the women at the eradicator table to remove dark fibers and bits of shell so that the crushed fruit will present an absolutely clean appearance. Undoubtedly this is the most monotonous of all the jobs in the cannery, sitting in one position with eyes constantly scrutinizing the moving mass. In two plants, disregard of comfortable seating and inadequate protection from the juicy pulp made the job doubly hard. In this illustration especially good artificial light is provided for the work.

### Uniforms.

Conspicuous in these illustrations are the uniforms worn by the girls at work, which in many cases were furnished and laundered by the firm. The method of checking uniforms was systematic



PLATE 5.—PACKING THE SLICED CORES

18-1

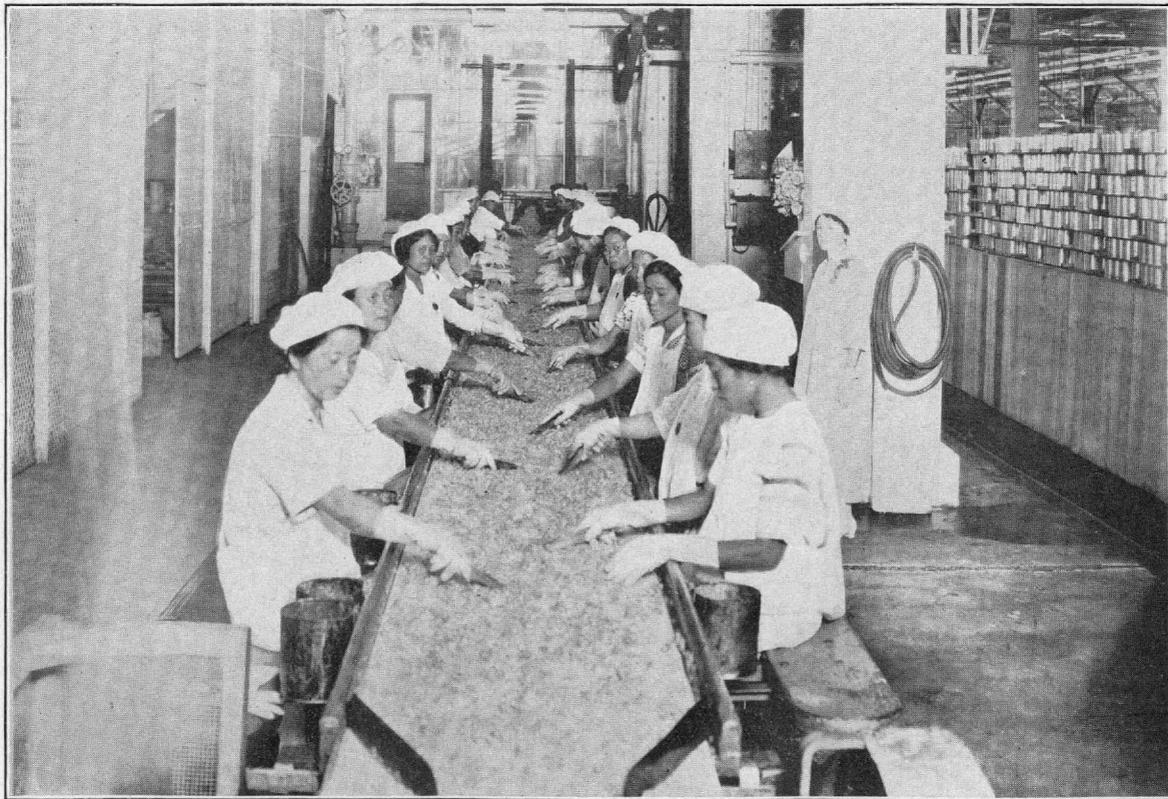


PLATE 6.—REMOVING BITS OF SHELL FROM CRUSHED FRUIT

and convenient for all concerned. Upon the deposit of a soiled apron the matron in charge gave out a clean one, the exchange being made at any hour of the day and as often as necessary, but girls generally wore their aprons a day or so without the necessity of change. They may not have been more sanitary, but white uniforms throughout a plant created a better impression than did the multicolored gingham and prints worn in canneries where the employees furnished their own aprons.

Everywhere the employees wore rubber gloves, no small item of expense to the companies. An initial deposit of 25 cents was customary for gloves, but thereafter the firm kept them in repair or replaced them with new ones when needed. The gloves added to the general sanitary effect, but the main reason for wearing them was because without their protection the acid in the juice of the pineapple eats into the cuticle and the hands become miserably sore, a condition painful for the worker and interfering with efficient operation in the plant.

### Posture and seating.

The pictures also illustrate very clearly the women's posture at work. In photograph No. 2 the trimmers are sitting on double slab seats attached to the table, but in actual practice they stand at work more than they sit. To obviate standing on hard floors, firm wooden platforms quite generally are provided. This arrangement shows best in illustration No. 5. Scattered through one plant were adjustable chairs with backs, but in all canneries the nonadjustable stool or slab seat predominated. Occasionally the slab seats were inclined slightly toward the table, an arrangement approved by the California Industrial Commission, but they looked uncomfortable, especially when the foot rails were not conveniently placed. Quite as important as the provision of seats was the usually convenient height of the worktables, which made it possible for the workers to change at pleasure from a standing to a sitting position. Measurements of packing tables in one new cannery showed that the average reach from the conveyor belt to the cans ranged from 12 to 20 inches, which did not seem excessive.

In the more recently constructed canneries the aisles between the tables were generous in width, frequently measuring from 5 to 7 feet from back to back of the chairs. In one plant the standard allowance of table space per worker was 2 feet, but even in the best of the canneries there was a tendency here and there to crowd in extra girls at the tables, so that in spite of a prevailing sense of space and roominess, the girls were packed in quite closely and barely had elbow room.

## WAGES

Pay-roll data were furnished by three canners in Honolulu for 2,452 women (excluding those in the warehouse and on night shifts) and by four canners on the island of Maui for 1,805 women. It is difficult to make any comparison of earnings in these localities, for in the city the women were paid on a weekly basis and in Maui they were paid on a monthly basis. In every case the pay rolls represented a period of peak employment, in regard both to number employed and to number of hours operating.

### Hourly rates of pay.

Practically all women employed in the canneries were paid an hourly rate, although occasionally piecework rates were found on some few warehouse jobs and in one instance a special incentive in the form of piece rate was given to the girls in the end positions at the canning tables.

In Honolulu the most common hourly rates of pay for the women were 16, 16½, 17, and 17½ cents. Occasionally relief workers or warehouse employees had slightly higher rates, while in other instances the rates were as low as 15½ cents an hour. In Maui the usual rates ranged from 12 to 14 cents an hour, and sometimes a daily rate of 80 or 85 cents was paid.

That there has been an improvement in rates in the past few years, at least so far as one cannery is concerned, is apparent from figures furnished by this firm, which show the distribution of their rates of pay in 1927 as compared with 1923.

Hourly rate	Per cent of female employees receiving specified rates in—	
	1923 (1,565 women)	1927 (1,007 women)
12½ cents.....	1.1	-----
14 cents.....	13.8	-----
15 cents.....	42.9	44.1
16 cents.....	28.1	28.8
16½ cents.....	.2	-----
17 cents.....	3.3	11.2
17½ cents.....	9.7	12.4
18 cents and over.....	1.0	3.5

While in 1923 about 15 per cent of the women were paid 14 cents an hour, or even less, none received so little as this in 1927; and while in 1923 not quite 15 per cent of the women were paid as much as 17 cents an hour, almost double that proportion were receiving these higher rates in 1927.

### Incentive payments.

Bonus payments as special awards for steady attendance were made in two canneries on the island of Maui, probably an inheritance from the system in vogue in the sugar plantations of paying the "turn-out" and "busy-season" bonus. In one cannery an attendance bonus amounting to 10 per cent of the straight earnings was paid to the women who lost not more than 70 hours of operating time from the middle of July to the middle of August, when help is most needed and therefore is most scarce. In another plant an extra payment of 1½ cents for each hour worked was given at the end of the month to the workers who had "turned out" to work on at least 20 of the working days. Other systems were more involved, consisting of bonus payments based on the season's as well as the month's attendance.

In all cases in this study, bonus payments have been included in the general discussion of earnings. The median of the wage was higher in those plants in which the monthly bonus was paid than where it was not. For example, in two canneries the medians of the monthly wages were about \$30 and \$25, which included bonus payments whose medians were \$4.25 and \$2.50, respectively. But in one of these plants there was a very large amount of overtime. The medians of the monthly wage in the two canneries not using any incentive-payment system were respectively a little over \$14 and \$22 for the month.

### Earnings not correlated with time worked.

The following summary shows the general trend in the distribution of wages irrespective of the amount of time each woman worked during the pay period. Because wages were paid weekly in Honolulu and monthly on the island of Maui, figures for the two localities are shown separately.

Amount of earnings	Women in three canneries having weekly pay rolls (Honolulu)		Women in four canneries having monthly pay rolls (Maui)	
	Number	Per cent	Number	Per cent
Total.....	2,452	100.0	1,805	100.0
Median of earnings.....	\$9.90		\$20.75	
Under \$3.....	120	4.9	56	3.1
\$3 and under \$6.....	159	6.5	73	4.0
\$6 and under \$9.....	435	17.7	80	4.4
\$9 and under \$12.....	1,114	45.4	120	6.6
\$12 and under \$15.....	497	20.3	201	11.1
\$15 and under \$20.....	83	3.4	335	18.6
\$20 and under \$25.....	33	1.3	356	19.7
\$25 and under \$30.....	4	.2	368	20.4
\$30 and under \$35.....	5	.2	129	7.1
\$35 and under \$40.....			41	2.3
\$40 and under \$50.....	2	.1	26	1.4
\$50 and over.....			20	1.1

Regardless of the time actually worked, whether it was less or more than a full-pay period, this summary shows that the median of the weekly wage for the women employed in the Honolulu canneries during a peak week in July, 1928, was \$9.90, one-half the women earning more and one-half earning less than this amount. The median varied somewhat from plant to plant, the one with

extreme overtime naturally being the highest, since wages quite generally were governed by an hourly rate and were not based upon the amount of work done.

In Maui the median of the monthly wage for the women employed in July, the busiest time of the year, was \$20.75, irrespective of the number of days actually worked. There were striking variations in the medians of the different canneries in this group; for one cannery it was as low as \$14.35 and in another—the one with the most overtime—it was as high as \$29.95.

Although in Honolulu almost one-half of the women earned from \$9 to \$12, there was a wide range between the minimum and maximum of the others. During this week, which was one of peak employment, over one-fourth earned less than \$9, some having extremely low earnings. On the other hand, one-fifth earned \$12 and under \$15, and above this point were more than a hundred women who earned \$15 to \$25 and a very few who earned even more than \$25.

In Maui the numbers of women were about equal for those earning \$15 to \$20, \$20 to \$25, and \$25 to \$30 during the month. The most common wage reported, that for 213 women, was \$25 and under \$26. Only about one-third of the women earned as much as \$25 in the month, although a few had exceptionally high wages, in rare instances as high as \$35, \$55, \$75, and even more.

#### Earnings correlated with hours worked.

A correlation of earnings with the time worked is a much more accurate basis for an interpretation of wages than are the earnings figures alone, and the next two summaries, one for Honolulu and one for Maui, reveal a steady increase in the amount of earnings as the hours lengthen, since the vast majority of the employees, as stated before, were paid on a straight hourly rate.

*Median of the week's earnings in three canneries, by hours worked (Honolulu)*

Hours worked during the week	Women reported		Median of the week's earnings
	Number	Per cent	
Total.....	2,452	100.0	\$9.90
Under 12.....	89	3.6	1.50
12 and under 18.....	22	.9	2.65
18 and under 24.....	60	2.4	3.40
24 and under 30.....	42	1.7	4.70
30 and under 36.....	80	3.3	5.60
36 and under 42.....	110	4.5	6.65
42 and under 48.....	91	3.7	7.80
48 and under 54.....	229	9.3	8.55
54 and under 60.....	944	38.5	9.80
60 and under 66.....	220	9.0	10.85
66 and under 72.....	153	6.2	12.50
72 and under 78.....	324	13.2	14.20
78 and under 84.....	34	1.4	15.70
84 and under 96.....	32	1.3	18.40
96 and over.....	22	.9	22.55

It is apparent that in Honolulu the great bulking of numbers, with almost two-fifths of the women, fell in the 54-to-60-hour week that represents roughly the full-time cannery hours. The median of the earnings for this group was practically the same as that for all the women reported. About one-third of the women worked longer than this, and earnings of \$11, \$12, and \$14, judged by the best mainland

standards, seem decidedly low for weeks of 60, 66, and 72 hours, the last named being equivalent to 6 days of 12 hours each. Fortunately the women who worked the excessively long weeks of 80 to 96 or more hours were a small minority. About one-fifth of the total number had worked less than the 48 hours that for industry in general are considered a normal full-time week.

The next correlation of earnings with hours worked is for the women employed in three canneries in Maui that paid on a monthly basis. In the fourth cannery supplying wage data hours worked were not reported.

*Median of the month's earnings in three canneries, by hours worked (Maui)*

Hours worked during the month	Women reported		Median of the month's earnings
	Number	Per cent	
Total.....	1,551	100.0	\$18.65
20 and under.....	43	2.8	1.55
Over 20 and including 40.....	74	4.8	4.05
Over 40 and including 60.....	47	3.0	6.65
Over 60 and including 80.....	82	5.3	9.15
Over 80 and including 100.....	117	7.5	11.60
Over 100 and including 120.....	191	12.3	14.35
Over 120 and including 140.....	212	13.7	16.50
Over 140 and including 160.....	114	7.4	19.90
Over 160 and including 180.....	366	23.6	25.10
Over 180 and including 200.....	99	6.4	25.25
Over 200 and including 220.....	150	9.7	28.00
Over 220 and including 240.....	40	2.6	32.15
Over 240 (up to and including 384).....	16	1.0	32.50

It is not possible to judge what constituted full time for the month, but it is apparent that here again earnings increased with the number of hours worked. Most representative, with not far from one-fourth of the women, was the group "over 160 and including 180" hours, with \$25.10 as the median of the earnings. That earnings were proportionately higher for the women who worked more than 60 hours undoubtedly was due to bonus and overtime payments. Maximum earnings, like the minimum, affected so few women that they were far from being typical.

### Earnings correlated with days worked.

Two canneries in Maui reported for their 743 women employees the number of days worked as well as the number of hours. A summary of the month's earnings of 623 of these women who had worked at least one-half of the month of July, which for some included Sundays and the Fourth, is presented here:

Number of women	Days worked in the month	Median of the earnings	Number of women	Days worked in the month	Median of the earnings
12.....	13	(1)	29.....	22	\$25.15
7.....	14	(1)	37.....	23	23.95
13.....	15	(1)	50.....	24	26.50
15.....	16	\$17.15	80.....	25	28.80
33.....	17	17.70	140.....	26	29.15
21.....	18	20.65	28.....	27	32.50
21.....	19	20.25	38.....	28	33.45
16.....	20	22.75	43.....	29	34.65
23.....	21	21.90	17.....	30	43.75

<sup>1</sup> Not computed, owing to the small number involved.

The 120 women not included in this list, having worked on fewer than 13 days, were distributed in groups too scattering for the computation of medians. It may be said that in the case of women who worked no longer than 5 days the usual earnings were less than a dollar a day, while for those who worked from 6 to 15 days, inclusive, the earnings averaged approximately a dollar a day, sometimes a few cents more.

For the 623 women in the foregoing summary who had worked at least half the time, the median in each case is equivalent to more than a dollar for each day worked. The largest groups of women were those who had worked 25 and 26 days, and for these full-time workers, including excessive overtime in the case of one cannery, the median of the month's earnings was roughly \$29. For those who had worked as many as 27, 28, 29, or 30 days the median was proportionately higher, as might be expected in a group that must have received much overtime pay as well as an attendance bonus. But even for those who worked on all or practically all the days in the month the equivalent of the median rarely approximated as much as \$1.25 a day.

#### Earnings for night work.

Up to this point the discussion has been limited to the earnings of women employed on day shifts, but over 1,000 women were working at night in Honolulu during the peak week in 1928 for which wage data were submitted. As hourly rates were about one-fourth higher for night workers than for day workers, their week's earnings naturally were higher also.

While the median of the wage for all day workers was \$9.90, that of all the night workers regardless of time worked was \$11.40. One of the most striking points to be noted is that three-fifths of the women worked approximately the entire week, and for these full-time workers the median was about \$12.

#### Earnings and cost of living.

In the absence of cost-of-living budgets for the working woman in the islands, it is impossible for strangers to form any judgment of how adequately the usual wages cover living expenses. In some respects prices are as high if not higher in Honolulu than on the mainland, but on the other hand certain items such as fuel for heating purposes have no place in the Hawaiian budget.

An idea of a possible standard of men's wages in Hawaii may be obtained from the fact that in 1929 the Territorial legislature raised the wages of laborers on public works from \$2.80 to \$3 a day.<sup>8</sup>

In discussing plantation wages, which range from \$1 a day, plus a possible bonus, to \$1.50 or \$1.80, depending upon seasonal factors, Professor Adams, of the University of Hawaii, says "wages may be described as adequate for the single men. They are able to supply their necessities and to save some money. But many married men find it increasingly difficult to provide for their growing families \* \* \*." <sup>9</sup> Moreover, the fact must not be overlooked that

<sup>8</sup> Laws of Hawaii. Act 165, effective July, 1925; and Act 86, effective July, 1929.

<sup>9</sup> Adams, Romanzo and Kai, Dan Kane-Zo. The Education of the Boys of Hawaii and Their Economic Outlook. University of Hawaii Research Publications No. 4, January, 1928, pp. 9 and 44.

cannery labor rarely benefits as does plantation labor from free rent, fuel, water, or other conveniences.

The manager of a cannery in Maui, in discussing rates of pay, said that board cost unskilled Japanese men about \$17 to \$18 a month and that the customary charge for a room for single men was \$5 to \$6 a month, irrespective of the number who occupied it.

The department of public instruction in Honolulu is authority for the statement that oriental girls can live in a boarding house or institution for as low as \$15 to \$20 a month. If the oriental girl rents a room or lives with a family, she can reduce her expenses further. It may be interesting to note that in the case of a number of oriental teachers living in a cottage, a group of three and four together, the food bills are as low as \$10 a month and very rarely over \$20.

These comments give only a slight indication of living costs, but they form the only available basis for practical interpretation of the earnings quoted in this section for women employed in canneries.

## OVERTIME

### Usual hours.

In Honolulu work in the cannery normally began at 7 a. m. and continued until 5.30 p. m., with an intermission of half an hour at midday, making a 10-hour day in all. The usual schedule for a night shift was from 7 in the evening until 5 or 5.30 in the morning.

In Maui the day started at 6 or 6.30, closed somewhat earlier than in Honolulu, and had a longer recess for lunch.

As stated before, there is no legislation in the Territory that limits the hours of work for women, and the 10-hour day was the customary standard in the canneries. All work done in excess of 10 hours daily, or on Sunday, was reckoned as overtime according to cannery standards and was paid at the rate of time and one-half. Consequently the pay rolls indicated very clearly how much overtime as well as straight time was credited to each employee.

### Extent of overtime in Honolulu.

During the peak week for which the pay rolls were copied, only about 1 in 10 of the women in the three Honolulu plants worked no overtime, as the following statement indicates.

	Plant 1	Plant 2	Plant 3
Total number of women reported.....	985	516	951
Number with no overtime.....	168	48	24
Number with overtime.....	817	468	927
Per cent with overtime.....	82.9	90.7	97.5

To what extent the women worked more than 60 hours during the pay-roll week is shown in the next summary. Although comparatively few worked so much as 5 hours of overtime, even 5 such hours spread evenly through a week would mean about 11 hours a day in the cannery, while 20 or 30 overtime hours might be a week of 6 days, each 13 to 15 hours long, or work on Sunday as well as lengthened days.

*Overtime hours in one week in three canneries (Honolulu)*

Number of overtime hours in one pay-roll week	Women with overtime as specified in—					
	Plant 1		Plant 2		Plant 3	
	Number	Per cent	Number	Per cent	Number	Per cent
Total .....	817	100.0	468	100.0	927	100.0
Under 5 .....	<sup>1</sup> 782	95.7	<sup>2</sup> 433	92.5	128	13.8
5 and under 10 .....	32	3.9	28	6.0	354	38.2
10 and under 15 .....			7	1.5	376	40.6
15 and under 20 .....	2	.2			18	1.9
20 and under 30 .....	1	.1			<sup>3</sup> 25	2.7
30 and under 40 .....					<sup>3</sup> 15	1.6
40 and under 50 .....					<sup>3</sup> 11	1.2

<sup>1</sup> Unpublished data show that 779 worked between four and five hours overtime, which in most cases was a Sunday morning.

<sup>2</sup> Unpublished data show that 416 worked less than two hours overtime.

<sup>3</sup> Since such prolonged overtime was unusual, a check on these data was made by correspondence, which verified the figures.

Each of the three firms in this summary pursued a different policy in providing labor sufficient to carry it over the peak of the harvest period. While the day shift in Plant No. 1 rarely worked as long as 10 hours and never worked longer, an unpublished record shows that for six weeks an extra night shift, averaging about 1,500 men and women—a somewhat smaller number than were employed on the day shift—worked regularly five or six nights a week on a definite 9½ or 10 hour schedule, and this enabled the firm to take care of its peak production. Plant No. 2 was organized to meet the emergency with practically no overtime and no night shift, for the mechanical equipment of the cannery was large enough to carry the load from the acreage controlled by the firm; in other words, a balance was maintained between the agricultural and manufacturing divisions. Cannery No. 3 operated extremely long and irregular hours with but one shift of employees. While most of the overtime in No. 1 was due to employment on Sunday morning, and most of that in No. 2 was less than two hours per woman, the overtime in No. 3 accumulated from day to day, week days and Sunday, until three-fourths of the women had put in from 5 to 15 hours of overtime during the week and more than 50 women had worked as much as 20, 30, or 40 or more hours in addition to the standard 60-hour week. And the management explained that “work continued like this for five or six weeks before the worst was over.”

#### **Extent of overtime in Maui.**

Three of the pay rolls kept on a monthly basis in Maui also itemized overtime hours. The data are summarized here, but they give no idea of the length of the weeks or individual days, since the overtime may have been spread evenly throughout the month or concentrated within a short period.

	Plant 1	Plant 2	Plant 3
Total number of women reported.....	581	490	253
Number with no overtime.....	134	60	2
Number with overtime.....	447	430	251
Per cent with overtime.....	76.9	87.8	99.2

The proportion of women affected by overtime was large in this group also, for there were comparatively few who had not worked longer than the standard day at some time during the month. Not only did the percentage who worked overtime differ from plant to plant, but the extent to which overtime accumulated throughout the month varied greatly. This is shown in the tabulation following:

*Overtime hours in one month in three canneries (Maui)*

Number of overtime hours in one pay-roll month	Women with overtime as specified in—					
	Plant 1		Plant 2		Plant 3	
	Number	Per cent	Number	Per cent	Number	Per cent
Total.....	447	100.0	430	100.0	251	100.0
Under 5.....	437	97.8	412	95.8	2	.8
5 and under 10.....	4	.9	12	2.8	1	.4
10 and under 20.....	5	1.1	3	.7	6	2.4
20 and under 30.....	1	.2			13	5.2
30 and under 40.....					55	21.9
40 and under 50.....			1	.2	116	46.2
50 and under 60.....			2	.5	8	3.2
60 and under 70.....					21	8.4
70 and under 80.....					26	10.4
80 and over.....					3	1.2

Two of the Maui canneries were able to limit their overtime to less than 5 hours in the month for more than 95 per cent of the women employees, so it would seem that the work in the third cannery—only a short distance away and subject to the same seasonal conditions—could have been so arranged that the employment of more than 90 per cent of its women from 30 to 80 or more hours overtime during the same month would not have been necessary.

In conclusion it may be said that although the standard work-day quite generally was long, overtime was excessive only here and there in a few individual canneries and was not characteristic of the industry as a whole.

## PUBLICATIONS OF THE WOMEN'S BUREAU

[Any of these bulletins still available will be sent free of charge upon request]

- \*No. 1. Proposed Employment of Women During the War in the Industries of Niagara Falls, N. Y. 16 pp. 1918.
- No. 2. Labor Laws for Women in Industry in Indiana. 29 pp. 1919.
- No. 3. Standards for the Employment of Women in Industry. 8 pp. Third ed., 1921.
- No. 4. Wages of Candy Makers in Philadelphia in 1919. 46 pp. 1919.
- \*No. 5. The Eight-Hour Day in Federal and State Legislation. 19 pp. 1919.
- No. 6. The Employment of Women in Hazardous Industries in the United States. 8 pp. 1921.
- No. 7. Night-Work Laws in the United States. (1919.) 4 pp. 1920.
- \*No. 8. Women in the Government Service. 37 pp. 1920.
- \*No. 9. Home Work in Bridgeport, Conn. 35 pp. 1920.
- \*No. 10. Hours and Conditions of Work for Women in Industry in Virginia. 32 pp. 1920.
- No. 11. Women Street Car Conductors and Ticket Agents. 90 pp. 1921.
- \*No. 12. The New Position of Women in American Industry. 158 pp. 1920.
- No. 13. Industrial Opportunities and Training for Women and Girls. 48 pp. 1921.
- \*No. 14. A Physiological Basis for the Shorter Working Day for Women. 20 pp. 1921.
- No. 15. Some Effects of Legislation Limiting Hours of Work for Women. 26 pp. 1921.
- No. 16. (See Bulletin 63.)
- No. 17. Women's Wages in Kansas. 104 pp. 1921.
- \*No. 18. Health Problems of Women in Industry. 11 pp. 1921.
- No. 19. Iowa Women in Industry. 73 pp. 1922
- \*No. 20. Negro Women in Industry. 65 pp. 1922.
- No. 21. Women in Rhode Island Industries. 73 pp. 1922.
- \*No. 22. Women in Georgia Industries. 89 pp. 1922.
- No. 23. The Family Status of Breadwinning Women. 43 pp. 1922.
- No. 24. Women in Maryland Industries. 96 pp. 1922.
- No. 25. Women in the Candy Industry in Chicago and St. Louis. 72 pp. 1923.
- No. 26. Women in Arkansas Industries. 86 pp. 1923.
- No. 27. The Occupational Progress of Women. 37 pp. 1922.
- No. 28. Women's Contributions in the Field of Invention. 51 pp. 1923.
- No. 29. Women in Kentucky Industries. 114 pp. 1923.
- No. 30. The Share of Wage-Earning Women in Family Support. 170 pp. 1923.
- No. 31. What Industry Means to Women Workers. 10 pp. 1923.
- No. 32. Women in South Carolina Industries. 128 pp. 1923.
- No. 33. Proceedings of the Women's Industrial Conference. 190 pp. 1923.
- No. 34. Women in Alabama Industries. 86 pp. 1924.
- No. 35. Women in Missouri Industries. 127 pp. 1924.
- No. 36. Radio Talks on Women in Industry. 34 pp. 1924.
- No. 37. Women in New Jersey Industries. 99 pp. 1924.
- No. 38. Married Women in Industry. 8 pp. 1924.
- No. 39. Domestic Workers and Their Employment Relations. 87 pp. 1924.
- No. 40. (See Bulletin 63.)
- No. 41. Family Status of Breadwinning Women in Four Selected Cities. 145 pp. 1925.
- No. 42. List of References on Minimum Wage for Women in the United States and Canada. 42 pp. 1925.
- No. 43. Standard and Scheduled Hours of Work for Women in Industry. 68 pp. 1925.

---

\* Supply exhausted.

- No. 44. Women in Ohio Industries. 137 pp. 1925.  
 No. 45. Home Environment and Employment Opportunities of Women in Coal-Mine Workers' Families. 61 pp. 1925.  
 No. 46. Facts about Working Women—A Graphic Presentation Based on Census Statistics. 64 pp. 1925.  
 No. 47. Women in the Fruit-Growing and Canning Industries in the States of Washington. 223 pp. 1926.  
 \*No. 48. Women in Oklahoma Industries. 118 pp. 1926.  
 No. 49. Women Workers and Family Support. 10 pp. 1925.  
 No. 50. Effects of Applied Research Upon the Employment Opportunities of American Women. 54 pp. 1926.  
 No. 51. Women in Illinois Industries. 108 pp. 1926.  
 No. 52. Lost Time and Labor Turnover in Cotton Mills. 203 pp. 1926.  
 No. 53. The Status of Women in the Government Service in 1925. 103 pp. 1926.  
 No. 54. Changing Jobs. 12 pp. 1926.  
 No. 55. Women in Mississippi Industries. 89 pp. 1926.  
 No. 56. Women in Tennessee Industries. 120 pp. 1927.  
 No. 57. Women Workers and Industrial Poisons. 5 pp. 1926.  
 No. 58. Women in Delaware Industries. 156 pp. 1927.  
 No. 59. Short Talks About Working Women. 24 pp. 1927.  
 No. 60. Industrial Accidents to Women in New Jersey, Ohio, and Wisconsin. 316 pp. 1927.  
 No. 61. The Development of Minimum-Wage Laws in the United States, 1912 to 1927. 635 pp. 1928. Price 90 cents.  
 No. 62. Women's Employment in Vegetable Canning in Delaware. 47 pp. 1927.  
 No. 63. State Laws Affecting Working Women. 51 pp. 1927. (Revision of Bulletins 16 and 40.)  
 No. 64. The Employment of Women at Night. 86 pp. 1928.  
 \*No. 65. The Effects of Labor Legislation on the Employment Opportunities of Women. 498 pp. 1928.  
 No. 66. History of Labor Legislation for Women in Three States; Chronological Development of Labor Legislation for Women in the United States. 288 pp. 1929.  
 No. 67. Women Workers in Flint, Mich. 80 pp. 1929.  
 No. 68. Summary: The Effects of Labor Legislation on the Employment Opportunities of Women. (Reprint of Chapter 2 of bulletin 65.) 22 pp. 1928.  
 No. 69. Causes of Absence for Men and for Women in Four Cotton Mills. 24 pp. 1928.  
 No. 70. Negro Women in Industry in Fifteen States. 74 pp. 1929.  
 No. 71. Selected References on the Health of Women in Industry. 8 pp. 1929.  
 No. 72. Conditions of Work in Spin Rooms. 41 pp. 1929.  
 No. 73. Variations in Employment Trends of Women and Men. 143 pp. 1930.  
 No. 74. The Immigrant Woman and Her Job. 179 pp. 1930.  
 No. 75. What the Wage-Earning Woman Contributes to Family Support. 20 pp. 1929.  
 No. 76. Women in 5-and-10-cent Stores and Limited-Price Chain Department Stores. 58 pp. 1930.  
 No. 77. A Study of Two Groups of Denver Married Women Applying for Jobs. 10 pp. 1929.  
 No. 78. A Survey of Laundries and Their Women Workers in 23 Cities. 166 pp. 1930.  
 No. 79. Industrial Home Work. 18 pp. 1930.  
 No. 80. Women in Florida Industries. 115 pp. 1930.  
 No. 81. Industrial Accidents to Men and Women. 48 pp. 1930.  
 No. 82. The Employment of Women in the Pineapple Canning of Hawaii. 30 pp. 1930.  
 No. 83. Fluctuations of Employment in the Radio Industry. (In press.)  
 Annual Reports of the Director, 1919\*, 1920\*, 1921\*, 1922, 1923, 1924\*, 1925, 1926, 1927\*, 1928\*, 1929, 1930.

---

\* Supply exhausted.