

**MASTER
NEGATIVE
NO. 94-82282-13**

COPYRIGHT STATEMENT

The copyright law of the United States (Title 17, United States Code) governs the making of photocopies or other reproductions of copyrighted materials including foreign works under certain conditions. In addition, the United States extends protection to foreign works by means of various international conventions, bilateral agreements, and proclamations.

Under certain conditions specified in the law, libraries and archives are authorized to furnish a photocopy or other reproduction. One of these specified conditions is that the photocopy or reproduction is not to be "used for any purpose other than private study, scholarship, or research." If a user makes a request for, or later uses, a photocopy or reproduction for purposes in excess of "fair use," that user may be liable for copyright infringement.

The Columbia University Libraries reserve the right to refuse to accept a copying order if, in its judgement, fulfillment of the order would involve violation of the copyright law.

Author:

**U.S. Federal Trade
Commission**

Title:

Food investigation

Place:

Washington, D.C.

Date:

1919

94-82282-13
MASTER NEGATIVE #

COLUMBIA UNIVERSITY LIBRARIES
PRESERVATION DIVISION

BIBLIOGRAPHIC MICROFORM TARGET

ORIGINAL MATERIAL AS FILMED - EXISTING BIBLIOGRAPHIC RECORD

BUSINESS
310
Un322

U. S. *Federal trade commission.*
Food investigation. Report of the Federal trade commis-
sion on canned foods. Canned salmon. December, 1918.
Washington, Govt. print. off., 1919.
83 p. incl. tables. 24¹/₂"^m.
Running title: Report on canned foods.

1. Salmon. 2. Canning and preserving—Industry and trade.—U. S.
I. Title.

Library of Congress HD9330.S33U5 1918 19-26310
Copy 2. a32d31

RESTRICTIONS ON USE:

TECHNICAL MICROFORM DATA

FILM SIZE: 35mm

REDUCTION RATIO: 12x

IMAGE PLACEMENT: IA IIA IB IIB

DATE FILMED: 11-22-94

INITIALS: DSP

TRACKING #: MSH 03404

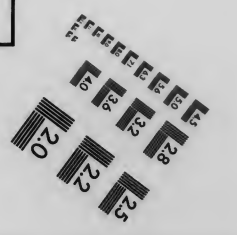
FILMED BY PRESERVATION RESOURCES, BETHLEHEM, PA.



2.0 mm
1.5 mm

ABCDEF GHIJKLMN OPQRSTU VWXYZ
abcde fghij klmnopq rstuvwxyz 1234567890
ABCDEF GHIJKLMN OPQRSTU VWXYZ
abcde fghij klmnopq rstuvwxyz 1234567890

PM-MGP 13"x18" METRIC GENERAL PURPOSE TARGET PHOTOGRAPHIC



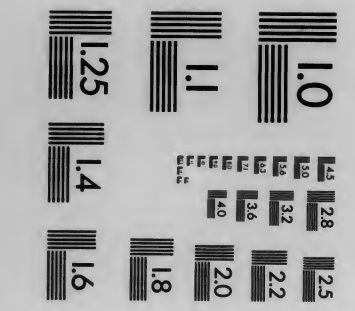
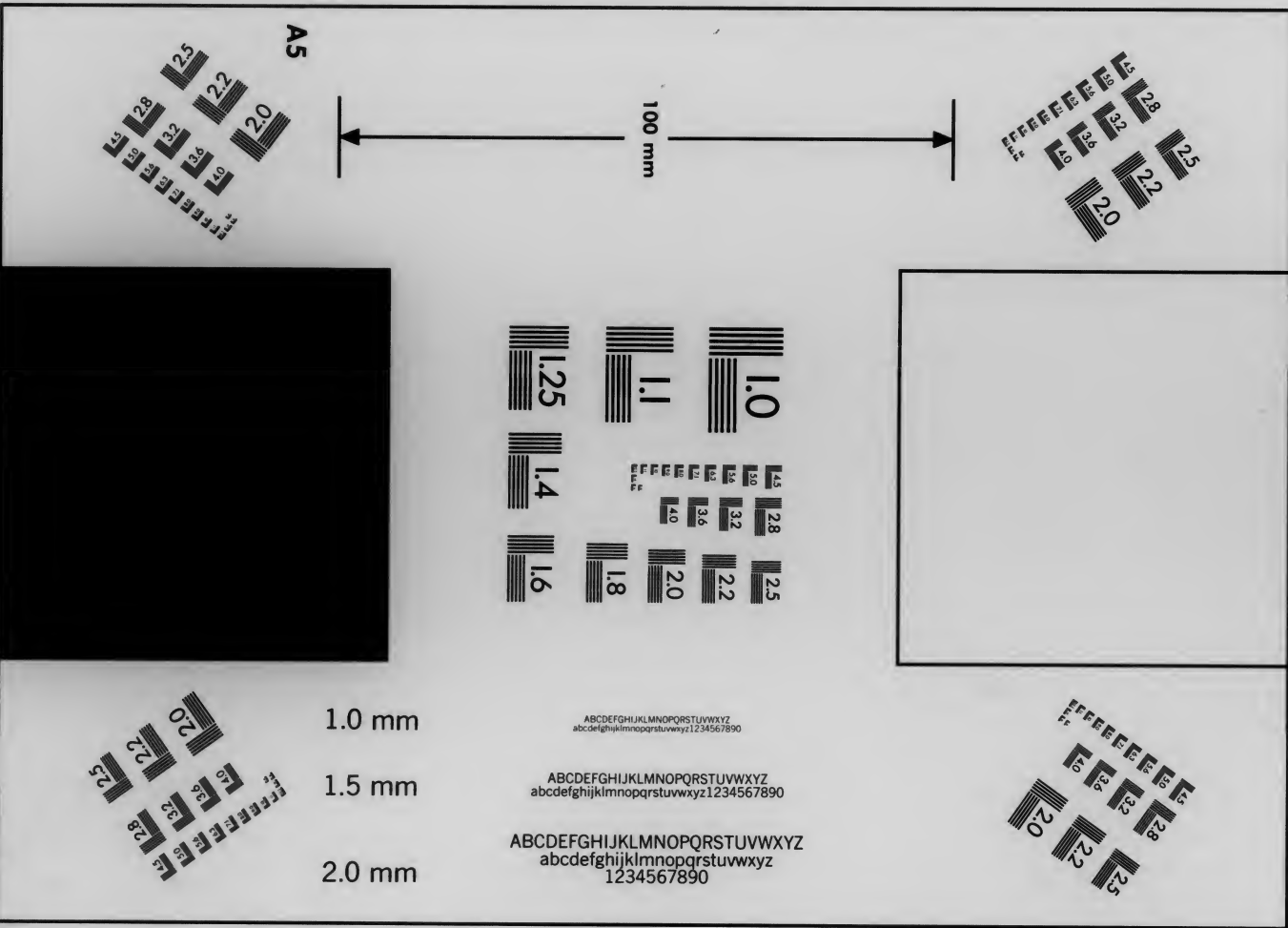
200 mm

150 mm

100 mm

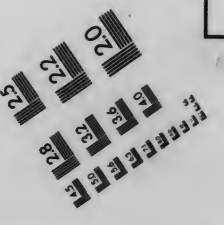
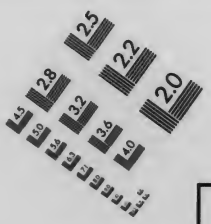
A4

A5



1.0 mm
1.5 mm
2.0 mm
2.5 mm

ABCDEF GHIJKLMN OPQRSTU VWXYZ
abcde fghij klmnopq rstuvwxyz 1234567890
ABCDEF GHIJKLMN OPQRSTU VWXYZ
abcde fghij klmnopq rstuvwxyz 1234567890
ABCDEF GHIJKLMN OPQRSTU VWXYZ
abcde fghij klmnopq rstuvwxyz 1234567890



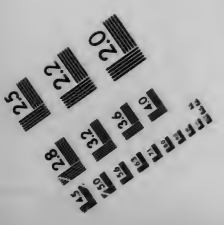
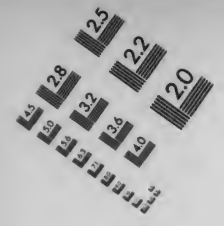
PRECISIONSM RESOLUTION TARGETS



1303 Geneva Avenue
St. Paul, MN 55119

ABCDEF GHIJKLMN OPQRSTU VWXYZ
abcde fghij klmnopq rstuvwxyz
1234567890

4.5 mm
3.5 mm
ABCDEF GHIJKLMN OPQRSTU VWXYZ
abcde fghij klmnopq rstuvwxyz 1234567890



U.S. Federal Trade Commission
Food investigation

D 310 - Un 322

D310 Un322

Columbia University
in the City of New York

LIBRARY



School of Business

FOOD INVESTIGATION

REPORT
OF
THE FEDERAL TRADE COMMISSION
ON
CANNED FOODS

CANNED SALMON

DECEMBER, 1918



WASHINGTON
GOVERNMENT PRINTING OFFICE
1919

Business

WILLIAM B. COLVER, *Chairman.*
JOHN FRANKLIN FORT.
VICTOR MURDOCK.
LEONIDAS L. BRACKEN, *Secretary.*

D 310
Un 322

REC MAY 15 1934

LETTER OF TRANSMITTAL.

FEDERAL TRADE COMMISSION,
December 27, 1918.

To the PRESIDENT OF THE UNITED STATES.

SIR: I have the honor to transmit herewith the report of the Federal Trade Commission on the production and distribution of canned salmon. This report presents additional information secured in the course of the general food inquiry which was undertaken in accordance with the instructions given in your letter of February 7, 1917.

Respectfully,

WILLIAM B. COLVER, *Chairman.*

ACKNOWLEDGMENT.

In connection with the preparation of this report, the Commission desires especially to mention Mr. Paul D. Converse, who acted as examiner in charge of the canned salmon inquiry under the supervision of Mr. Lewis H. Haney, assistant chief economist. Valuable assistance was rendered by Mr. Kemper Simpson and Mr. Stephen I. Miller.

4

CONTENTS.

SUMMARY.		Page.
The growing importance of canned salmon.....		7
The grades of salmon.....		8
The production and distribution of canned salmon.....		8
Costs.....		8
The marketing of canned salmon.....		9
Prices.....		10
Margins and profits.....		10
The dominant interests in the industry.....		10
The Sulzer bill and the Alexander bill.....		11
Suggestions for the improvement of conditions in the salmon canning industry..		12
CHAPTER 1.—GENERAL DESCRIPTION OF THE SALMON CANNING INDUSTRY.		
Sec. 1. History of the salmon canning industry.....		13
2. Species of salmon and the runs.....		14
3. Methods of catching salmon.....		18
4. Fish purchased and caught by canners.....		19
5. Difficulty in securing fish.....		20
6. General method of marketing canned salmon.....		21
7. Importance of sales agents and brokers.....		22
8. Business done by the brokers.....		26
9. Canners' methods of distributing their goods—sales agents and brokers..		26
10. Labels used on canned salmon.....		28
CHAPTER 2.—THE CONSUMPTION AND PRODUCTION OF CANNED SALMON.		
Sec. 1. Consumption and export of canned salmon.....		31
2. Salmon packs of 1916 and 1917.....		32
CHAPTER 3.—THE COST OF PACKING AND MARKETING CANNED SALMON.		
Sec. 1. Items included in cost of production.....		35
2. Cost of production 1916, 1917.....		36
3. Range in the cost of production.....		40
4. Cost of canning salmon by grades.....		42
5. Cost of canning in the different size cans.....		44
6. The costs of large and small companies and large and small plants....		46
7. Expense of marketing canned salmon.....		47
CHAPTER 4.—THE PRICE OF CANNED SALMON.		
Sec. 1. Meaning and importance of "opening prices".....		49
2. Opening prices of 1916-17.....		52
3. Future sales and prices.....		54
4. Spot prices of canned salmon.....		55
5. Brokers' prices.....		55
6. Control of prices by brokers.....		57
CHAPTER 5.—CAPITALIZATION, INVESTMENT, AND PROFITS IN THE SALMON CANNING INDUSTRY.		
Sec. 1. Capitalization.....		58
2. Investment in the industry.....		59
3. Profits of salmon canning companies in 1916-17.....		61
4. The investment and the profits of the brokers.....		64
5. Brokers' earnings.....		67

5

CHAPTER 6.—ORGANIZATION AND CONTROL IN THE SALMON CANNING INDUSTRY.

Sec. 1. Advantages of large companies	Page. 69
2. The size of the companies and plants from a social point of view	70
3. The companies that dominate the industry	70
4. Relation with outside interests	74.
CHAPTER 7.—LEGISLATION TO PROTECT THE SUPPLY OF SALMON	75
CHAPTER 8.—SUGGESTIONS FOR THE IMPROVEMENT OF CONDITIONS IN THE SALMON CANNING INDUSTRY	78

LIST OF TABLES.

1. Increase in the production of canned salmon (cases)	Page. 14
2. Number of fish canned and purchased	15-16
3. Valuation of trap sites	18
4. Number of fish canned and purchased by districts: 1916-17	20
5. Trade channels used in the marketing of canned salmon, 1916-17	23-24
6. Sales of canned salmon by brokers in 1917	25
7. Cannery distribution of their salmon packs, 1916-17	27
8. Labels used on canned salmon	29
9. Number of pounds of canned salmon exported from the United States during the fiscal years 1900-1917	32
10. Number of full cases of salmon canned in 1916-17, by grades and sections	33
11. Relative importance of different species within each district	33
12. Relative importance of districts in production of each species	34
13. Average cost of producing canned salmon (per full case in 1916-17)	37
14. Relative importance of various cost items in production of canned salmon, 1916-17	38
15. Number of cases of salmon packed below different costs in 1916-17	41
16. Cost of canning different grades of salmon: 1916	43
17. Cost of canning different grades of salmon: 1917	43
18. Average cost of canning different grades of salmon	44
19. Cost of canning salmon in the different sized cans: 1917	45
20. Comparison of unit costs of production of typical plants having large and small outputs: 1916-17	46
21. Comparison of unit costs of production by typical companies having large and small outputs, 1916-17	46
22. Opening prices on canned salmon since 1897	50
23. Opening prices in 1916-17, with percentage of companies making these prices	52
24. Dates when opening prices were announced	54
25. Brokers' prices of canned salmon during 1917	56
26. Capitalization, borrowed funds, and outside investments of salmon canning companies on Dec. 31, 1917	58
27. Investment in salmon canning companies, 1916-17	60
28. Net profit of salmon canning companies, 1916-17	61
29. Profits or losses of canning companies on investment	62
30. Sales and profits of salmon canning companies	63
31. Investments and the earnings of brokers during 1916	65
32. Investments and the earnings of brokers during 1917	66
33. Representative salmon brokers' earnings per case	67

SUMMARY.

The inquiry upon which this report is based is part of a comprehensive investigation of food-producing industries undertaken at the special direction of the President of the United States. The Commission has already issued a report discussing the canning industry in general and presenting data concerning the costs, prices, and profits of representative canners of vegetables and fruits.¹

The following report is confined to the salmon canning industry and is based upon practically complete returns from all the salmon canners in the United States, including Alaska. The material upon which this report is based has been secured in part through schedules which were sent to all salmon canners, and in part by an examination of the books of representative salmon canners made by the Commission's accountants. In all, schedules were received from over 100 companies, packing more than 8,000,000 cases of salmon in 1917. Cost statements were compiled by the Commission's accountants from the books of 19 companies, operating 54 plants and packing 52 per cent of the total production in 1916; statements were compiled for 1917 from the books of 20 companies, operating 62 plants and packing 50.5 per cent of the year's total production.

THE GROWING IMPORTANCE OF CANNED SALMON.

Canned salmon is a most important food product, having a high proportion of protein and fat. The production of canned salmon in the United States has increased faster than the population. Although a part of the increased production has gone into increased exports, the per capita consumption has also increased. The quantity shipped abroad in the fiscal year 1917 was over 117,960,000 pounds. That the United States Government announced that it would take for the Army and Navy approximately 80 per cent of the 1918 pack is indicative of the military importance of this concentrated food.

The growth of the salmon canning industry is roughly indicated by the statistics of production. The increase in the pack was as follows:

	Cases.
1864	2,000
1900	2,485,002
1917	8,584,615

The first salmon cannery in Alaska was opened in 1878. During the eighties the industry had a rapid development, and in 1892 there were 31 canneries. While in 1890 a little over 682,000 cases were packed in Alaska, by 1917 the output was nearly 6,000,000 cases or considerably over three-fifths of the total quantity produced in the United States. Estimates indicate that the per capita consumption in the fiscal year 1900 was 1.2 pounds, and that in 1917 it was 1.8 pounds, indicating a considerable increase in the use of this food.

¹ Report of the Federal Trade Commission on Canned Foods. General Report and Canned Vegetables and Fruits, Washington, May 15, 1918.

THE GRADES OF SALMON.

There are five species of salmon which are of commercial importance: "chinook" or "king," "red" or "sockeye," "medium red" or "coho," "pink," and "chum." (The chinook species is sometimes called "quinnat;" the red sometimes "blueback" or "quinnault;" the medium red, "silverside;" the pink, "humpback," and the chum, "keta" or "dog.") In addition to these species, the steelhead trout, canned chiefly on the Columbia River and Puget Sound, is marketed as "steelhead" salmon. The red salmon, which is found from northern California to the Arctic Ocean, is the most important grade commercially, though in 1917 more pink salmon was canned than any other species. The pink salmon, however, does not command so high a price as the red salmon because its flesh is paler and less firm.

THE PRODUCTION AND DISTRIBUTION OF CANNED SALMON.

Salmon are caught principally in nets, traps, and seines often at considerable distances from the canneries. Nearly 70 per cent of the fish packed are caught by the canners themselves, who often maintain large investments in fishing fleets. The fish are packed in several styles and sizes of cans. The most important sizes are the 1-pound "talls," the ½-pound "flats," and 1-pound "flats." There are usually 48 pounds of fish in a case—e. g., 4 dozen 1-pound "talls."

The bulk of the pack is disposed of by the canners through brokers or selling agents—a notable characteristic of the industry being the prevalence of the "general sales agent" who handles all or a large part of the output of one or more canneries as exclusive agent throughout the United States or a large part thereof. Eighty per cent of the 1917 pack was sold through sales agents and nearly one-half of the companies sold their entire pack in this way. The rate of commission charged by brokers and sales agents was 5 per cent in most cases. It ranged from as low as 2 per cent to as high as 13 per cent in 1917.

The canners sell most of their salmon at "opening prices," which are generally named in August. Prior to the naming of these prices, the canners generally make S. A. P. sales—i. e., sales "subject to approval of price." When opening prices are named, if on the S. A. P. basis, the buyer may confirm the purchase of all or of a part of the quantity specified, or he can cancel the entire contract.

COSTS.

The figures compiled by the Commission, covering approximately one-half of the total pack of 1916, show that the average cost of producing all grades of canned salmon, exclusive of selling expense, was in 1916, \$3.61 for a full case of 48 pounds net weight, and that the average cost in 1917 was \$4.43. This represented an increase of 82 cents, or 22.6 per cent. In 1917, the cost of raw fish was approximately 33 per cent of this total average cost, while the cost of cans was approximately 21 per cent. The largest increase in any item of cost occurred in the cost of cans, which advanced in 1917 approximately 59 per cent over the cost in 1916. The following statement of average costs in 1917 is presented for the purpose of giving a general indication of the amounts of the chief items which enter into the cost of canned salmon (exclusive of selling expense).

	Cost.	
	Per case.	Per can.
Raw material.....	\$1.444	\$0.030
Package.....	1.133	.023
Conversion.....	.797	.017
Overhead.....	1.166	.024
Gross cost of production.....	4.540	.094
Credit from by-products (salt fish, fertilizer, etc.).....	.110	.002
Total net cost of production.....	4.430	.092

The range of costs was considerable. Some salmon was packed in 1917 at a cost as low as \$1.20 per case, while some was packed at as high as \$26.50 per case. These extreme figures, however, were abnormal. The great bulk of the pack was produced within a relatively narrow range of costs. Ninety-two per cent of the 1916 pack was produced at costs less than \$5.50 per case, and 91 per cent of the 1917 pack was produced at costs below \$7.50 per case. None of these cost-of-production figures include selling expense.

The costs of producing canned salmon vary not only from plant to plant, but also for the different species, and in the different localities. The different species are chiefly caught in certain localities so that these two elements in the situation are interrelated. Many canneries are located in sections where practically all of the fish caught are of one grade,¹ and when 90 per cent or more of the output of a plant consisted of one grade of salmon, the Commission took the cost at such a plant as representing that grade. If this method of differentiating costs be borne in mind, the following statement will be of value as indicating the approximate variation in the average cost of producing the red and the pink grades of salmon:

	1916	1917
Red or sockeye.....	\$3.865	\$4.871
Pink.....	2.923	4.228

The chief reason for the difference in cost was the difference in the cost of raw fish. The proportion of waste involved in packing the several species also varied somewhat widely. (See page 39.)

THE MARKETING OF CANNED SALMON.

Considerable difficulty was experienced in ascertaining the cost of marketing canned salmon. Most salmon canners maintain no sales departments, and do little or no advertising. Their chief marketing expenses, therefore, consist of brokerage or commission. The ordinary brokerage rate is 5 per cent. A total of 24 companies, packing approximately 50 per cent of the 1917 production, reported a marketing cost of 27.2 cents per case, or 3.59 per cent of the net selling price. A more careful analysis was made of 8 large companies, whose records of selling expense were more complete. This analysis showed an average selling expense of 38.2 cents per case. The average selling expense included brokerage, which represented 4.36 per cent of the selling price, and other expenses such as advertising, salesmen, etc., which represented 1.029 per cent of the selling price.

¹ By "grades" are meant "species."

PRICES.

The advance in the New York wholesale spot price of canned salmon during 1916 and in the early part of 1917 was rapid, but no more so than the increase in food prices in general. Approximately 90 per cent of all canned salmon is said to be sold at the opening price (see p. 49). The opening prices reported by the canners to the Commission indicated that the most frequent prices per dozen 1-pound cans for some of the chief grades of salmon of 1916 and 1917 were as follows:

	1916	1917
Red.....	\$1.50	\$2.35
Medium red.....	1.30	2.00
Pink.....	.90	1.65
Chum.....	.85	1.60

The Commission's investigation shows that the average opening price for all grades of canned salmon made in August, 1917, was \$8.33 per case (48 pounds). The average price realized by the canner on all sales made during 1917, including a part of the 1916 pack sold in 1917, however, was \$7.28.

MARGINS AND PROFITS.

The average selling price,¹ the average cost, and the average profit for 1917 were about as follows:

Average selling price per case sold ²	\$7.28
Average cost per case sold ²	4.74
Average gross profit per case sold ²	2.54

Although the increase in the price of canned salmon was comparable with the increase in the general level of food prices, the margins and profits of the salmon canners increased largely. The average net profits³ per case sold in 1916 amounted to approximately \$0.91 and in 1917 to approximately \$2.48, an increase of more than 170 per cent.

The Commission's report shows that the average net investment per case of canned salmon produced in 1916 was \$4.97, and that in 1917 it was \$4.31, the decrease being due chiefly to the larger pack produced in the latter year. On this average net investment the average profit of all salmon canners from whom data were available amounted in 1916 to 22.1 per cent, and in 1917 to 52.7 per cent.

THE DOMINANT INTERESTS IN THE INDUSTRY.

The Commission's inquiry indicates that a large degree of control over price is exercised by a few dominant interests. It is a general practice in this industry for one or two concerns to announce the opening prices, which are followed by the canners producing a great bulk of the pack. Over 53 per cent of the 1917 pack was pro-

¹ The amount of the total net sales divided by the total number of cases sold. "Net sales" represented "Gross sales" with deductions for discount, allowances, etc.

² Cost per case sold means "cost of sales." See table in section 3 of chap. 5. A part of the selling expense is included in cost, but as all of the canners did not report their selling expenses the actual average price paid by the buyers during 1917 was somewhere above \$7.25.

³ See footnote on p. 63.

duced by five groups of companies, each group being subject to a common control. A considerable degree of interrelation between the meat packers and the dominant interests in the salmon canning industry is indicated, but no evidence has been found to show that this interrelation has directly affected prices.

The control of the valuable trap and net locations by a comparatively few companies has enabled the dominant interests to develop even more rapidly than their efficiency in production would have warranted. Efficiency in production seems to have been more dependent upon the size of the plant than upon the size of the company.¹ Canners with desirable trap locations undoubtedly enjoyed a distinct advantage over those who had less valuable sources of raw fish. It seems evident that the dominant interests should not be allowed to obtain monopolistic control of the sources on which the entire industry depends.

The report of this Commission on the meat packing industry² stated that the great profits of the packers were not primarily due to exceptional efficiency in operating packing houses and manufacturing plants, but were secured through their monopolistic control of the distributive machinery. With the control of the distributive machinery which those salmon canners who are affiliated with the meat packers now possess—added to the relation between the salmon canners and the sales agencies who market the bulk of the pack and who control the price—a monopoly of the sources of supply would enable the dominant interests to exert a control in the industry which might even surpass that exerted by the "Big Five" in the meat industry.

THE SULZER BILL AND THE ALEXANDER BILL.

There are two bills in Congress pending which are intended to protect the Alaskan fisheries. And nearly 70 per cent of the total American salmon pack is produced in Alaska. A bill introduced by Representative Sulzer, of Alaska, which is said to have the approval of the people of Alaska and to be opposed by the salmon canners, proposes to take the administration of the salmon fisheries out of the jurisdiction of the Bureau of Fisheries (Department of Commerce) and to give it to the legislature of Alaska.³ The Alexander bill represents the opinion of the departments and committees of the Federal Government and has the approval of many of the salmon canners. There is one fundamental difference in the provisions of the two bills. At present in Alaska the duration of a license to a trap or net location is 1 year; these licenses are ordinarily renewed from year to year and the possession of the licensees is almost invariably respected. The Sulzer bill proposes a 5-year tenure of these licenses, while the Alexander bill proposes a 15-year tenure. Disregarding at this place any consideration of the minor differences in the two bills, the Commission favors control by the Bureau of Fisheries, as provided in the Alexander bill, but considers the 5-year license term provided in the Sulzer bill preferable to the 15-year term of the Alexander bill.

¹ See page 46.

² See Summary of Report of Federal Trade Commission on the Meat-Packing Industry, Washington, July 3, 1918.

³ Every act of the legislature is subject to the disapproval of Congress.

SUGGESTIONS FOR THE IMPROVEMENT OF CONDITIONS IN THE SALMON-CANNING INDUSTRY.

In the concluding chapter of this report the Commission makes certain suggestions for the improvement of conditions found in the production and marketing of canned salmon. These suggestions may be summarized as follows:

1. That the recommendations contained in the Commission's Report on Canned Foods: General Report and Canned Vegetables and Fruits, which apply to conditions obtaining in the salmon industry, should be considered. These recommendations concern economy in boxes, standardization of grades, labels, and unnecessary reselling.
2. That the Bureau of Fisheries have control of the salmon fisheries of Alaska in the interest of good administration and for the prevention of any possible monopoly in the future.
3. That licenses to trap locations should not run for more than 5 years, but that renewal thereof should be allowed; and further, that a trap location should not be allowed to remain in the possession of anyone, unless he makes use of it for at least 3 years during such 5-year term.
4. That some agreement be made between the United States and Canada for the regulation of fishing in the Puget Sound, and that this agreement be designed to meet the difficulties relative to the price to be paid for fish.
5. That some department of the Government should furnish information which would facilitate a more direct marketing by salmon canners, so as to limit the payment of sub-brokerage.
6. That the announcement of an opening price is dangerous, and, as at present conducted, should be discontinued.
7. That "S. A. P. sales" (sales subject to the opening price) should be restricted.

Other suggestions made, concern more uniform can prices, the limitation on maintenance of nominally separate sales agents, and the need of better cost accounting.

WILLIAM B. COLVER, *Chairman,*
JOHN FRANKLIN FORT,
VICTOR MURDOCK,
Commissioners.

CHAPTER I.

GENERAL DESCRIPTION OF THE SALMON CANNING INDUSTRY.

Section 1. History of the salmon canning industry.

The first salmon cannery in the United States was started in 1864 in Sacramento, Cal., by Wm. Hume, G. W. Hume, and Andrew S. Hapgood, a tinsmith who had previously canned a few salmon on the Bay of Chaleur, Canada. Some salmon have been canned intermittently on the Sacramento and San Joaquin rivers ever since this early beginning. However, the larger runs of fish farther north induced these pioneers, in 1866, to start a salmon cannery at Eagle Cliff on the Columbia River. Other canneries were soon built, and 31 were established on the Columbia River by 1881. This river has produced more salmon than any other single stream. The industry grew until 620,000 cases were packed in 1884.

Chinese laborers were first employed at the Eagle Cliff cannery in 1872. They proved more reliable and less troublesome than the type of laborers previously recruited in the cities for the canning season. Soldering machines, steam box, and lacquering machines were first used on the Columbia River in 1871.

The first cannery on Puget Sound was built in 1877, at Mukilteo, Snohomish County. The development was slow at first, but after 1894 the Puget Sound industry grew rapidly. Pink or humpback salmon were first canned in this section. Every effort was made to induce the public to buy this grade. In spite of these efforts a market for this grade was slow in developing. Sockeye salmon was canned on Puget Sound in the late eighties, but were not labeled "Sockeye" until 1894-95. Sockeye salmon was not generally sought in the market until the Spanish-American War caused a heavy demand.

Salmon had been salted and dried by the Indians, both in the United States and in Alaska, long before the country was settled by the white man. Salt salmon was not only an important food, but was one of the articles shipped from these sections by the early traders. In Alaska a few Russians had been engaged in salting salmon before the United States purchased the Territory. The first salmon cannery in Alaska was opened in 1878, at Klawakan, on the west coast of Prince of Wales Island, and in the same year another cannery was built near Sitka. During the eighties the industry had a rapid development, and moved north and west. Nearly every year several new canneries were built, and in 1892 there were 31 in existence in Alaska.

The development was so rapid that by 1889 the canners felt that there was an overproduction, and got together in order to limit production. In 1890 the three canneries at Chignik combined under an operating agreement known as the Chignik Bay combination. Two of the canneries were closed, and the profits of the third were divided. The Alaska Packers Association was formed in September, 1891, to dispose of the 363,000 cases of unsold salmon, and expired when the salmon was sold. Early in the following year 25 of the 31 canneries

formed the Alaska Packing Association to reduce the size of the pack. Sixteen canneries were closed, and the size of the pack reduced nearly one-half in 1892. On February 9, 1893, the Alaska Packers Association was incorporated, with all but two of the former canneries as members. The canneries received shares of stock for their plants and had to buy additional shares to furnish working capital. The size of the pack has increased steadily since 1893.

The growth of the industry is shown by the following table:

TABLE 1.—INCREASE IN THE PRODUCTION OF CANNED SALMON (CASES).¹

Year.	Outside Rivers.	Columbia River.	Puget Sound.	Alaska.	British Columbia.	Total.
1864.....	2,000					2,000
1870.....		150,000				150,000
1880.....	83,522	530,000	5,100	6,539	61,849	687,010
1890.....	72,074	435,774	8,000	682,591	411,257	1,609,696
1900.....	108,641	338,772	469,450	1,548,139	606,540	3,091,542
1910.....	183,271	391,415	597,833	2,413,054	790,839	4,316,453
1915.....	189,130	558,534	1,269,206	4,489,016	1,133,381	7,639,267
1916.....	192,077	528,683	691,625	4,970,544	985,085	7,375,994
1917.....	169,592	554,726	1,946,241	5,914,088	1,577,485	10,102,102
Total to date.....	5,527,937	20,150,239	19,823,422	63,617,615	23,812,168	132,931,351

¹ Figures down to and including 1915 from Bureau of Fisheries' report. Figures for British Columbia in 1916 and 1917 from Pacific Fisherman's Yearbook "Total to date" is the total product of the industry from its beginning to and including 1917.

Section 2. The species of salmon and the runs.

Salmon are found widely distributed, but the commercial canning of salmon is carried on chiefly along the shores of the North Pacific, especially in the United States, British Columbia, and Alaska. The industry, however, is growing rapidly in Siberia and Japan. Five species of salmon are of commercial importance. These species are: chinook, quinnat or king salmon (called chinook on the Columbia River and king in Alaska); red, sockeye, blueback, or quinnat salmon; coho, medium red, or silverside salmon; humpback or pink salmon; and the chum, keta, or dog salmon. The steelhead trout, which is canned on the Columbia River, Puget Sound, and a few of the coastal streams, is marketed as steelhead salmon.

The red salmon is the most important commercially. It is found from northern California to the Arctic Ocean. The fish vary in size, but the Bureau of Fisheries gives the average weight as five pounds, although the average is often higher in Alaska. Table 2, which shows the average number of fish per case of 48 pounds (net), indicates that the average size of each species varies from section to section, as well as from year to year. The number of fish required to fill a 48-pound case vary from about 4 kings to 16 pinks.

TABLE 2.—NUMBER OF FISH CANNED AND PURCHASED; NUMBER OF CASES PACKED AND AVERAGE NUMBER OF FISH PER CASE.

1916							
District.	Grade of fish.	Number of companies reporting.	Number of fish canned.	Number of fish purchased.	Percentage of fish canned which were purchased.	Number of cases packed.	Average number of fish per case.
West Alaska.....	Kings.....	7	111,381	27,175	24.39	26,003	4.28
Central Alaska.....	6	25,483	11,602	45.52	5,854	4.35
Southeast Alaska.....	20	143,236	136,597	92.12	34,344	4.31
Puget Sound.....	15	180,580	80,574	44.62	25,606	7.05
Columbia River.....	9	865,392	842,127	97.31	265,376	3.26
Outside Rivers ¹	7	60,656	60,143	99.15	18,607	3.25
Totals and averages.....	64	1,391,778	1,158,218	83.66	375,790	3.73
West Alaska.....	Reds.....	8	16,564,413	1,017,042	6.13	1,223,950	13.52
Central Alaska.....	6	1,387,647	547,261	39.43	118,891	11.67
Southeast Alaska.....	29	1,609,978	784,503	48.70	123,767	13.00
Puget Sound.....	17	2,593,240	168,584	6.50	198,205	13.04
Columbia River.....	8	775,382	439,900	56.73	67,334	11.52
Outside Rivers ¹	1	59,352	59,352	100.00	4,645	12.78
Totals and averages.....	69	22,990,012	3,016,642	13.28	1,736,792	13.24
West Alaska.....	Medium reds.....	4	394,048	46,619	11.83	36,078	10.92
Central Alaska.....	6	305,246	131,998	43.22	37,275	8.19
Southeast Alaska.....	29	1,018,014	505,937	49.67	117,422	8.69
Puget Sound.....	17	1,098,374	677,486	61.62	110,658	9.93
Columbia River.....	10	345,597	310,216	89.50	42,782	8.10
Outside Rivers ¹	8	349,053	349,348	100.09	34,937	9.99
Totals and averages.....	74	3,512,332	2,331,819	66.38	379,152	9.26
West Alaska.....	Pinks.....	3	4,153,353	540,248	13.00	214,482	19.36
Central Alaska.....	6	4,102,775	1,821,558	44.39	212,169	19.33
Southeast Alaska.....	27	12,265,379	4,772,128	38.89	879,953	13.93
Puget Sound.....	8	1,800,875	607	0.03	70,979	25.37
Totals and averages.....	44	22,323,382	7,134,541	31.99	1,377,583	16.19
West Alaska.....	Churns.....	7	1,144,595	289,663	25.30	67,528	11.74
Central Alaska.....	6	331,423	160,465	48.41	37,870	8.75
Southeast Alaska.....	28	3,661,176	2,296,478	62.72	344,213	10.33
Puget Sound.....	15	2,981,678	1,887,278	63.29	387,373	7.70
Columbia River.....	8	374,370	358,255	95.69	62,043	6.34
Outside Rivers ¹	5	110,809	106,973	96.53	16,896	6.56
Totals and averages.....	69	8,604,051	5,099,112	59.26	945,923	9.10
Columbia River.....	Steelheads.....	7	103,774	102,117	98.40	16,991	6.10
Totals and averages.....	7	103,774	102,117	98.40	16,991	6.10

¹ Coastal streams in Washington, Oregon, and California.

TABLE 2.—NUMBER OF FISH CANNED AND PURCHASED; NUMBER OF CASES PACKED AND AVERAGE NUMBER OF FISH PER CASE—Continued.

1917							
District.	Grade of fish.	Number of companies reporting.	Number of fish canned.	Number of fish purchased.	Percentage of fish canned which were purchased.	Number of cases packed.	Average number of fish per case.
West Alaska.....	Kings.....	8	107,590	18,407	17.10	21,398	5.03
Central Alaska.....	do.....	9	34,158	19,872	58.19	6,675	5.11
Southeast Alaska.....	do.....	22	283,643	202,693	71.46	45,674	6.21
Puget Sound.....	do.....	18	209,360	105,731	50.54	53,485	3.91
Columbia River.....	do.....	10	959,846	643,063	6.99	273,291	3.51
Outside Rivers ¹	do.....	9	45,378	43,468	95.75	12,940	2.30
Totals and averages.....		76	1,639,975	1,033,234	63.00	413,463	3.96
West Alaska.....	Reds.....	9	21,449,913	1,192,000	5.56	1,433,780	14.90
Central Alaska.....	do.....	9	2,271,989	974,653	42.89	189,921	11.96
Southeast Alaska.....	do.....	33	1,964,993	1,074,658	54.85	158,582	12.03
Puget Sound.....	do.....	27	4,731,861	1,233,489	26.00	372,467	12.73
Columbia River.....	do.....	7	1,213,887	688,637	56.72	98,076	12.36
Outside Rivers ¹	do.....	2	21,868	21,868	100.00	1,769	12.36
Totals and averages.....		87	31,654,511	5,185,306	16.40	2,254,595	14.13
West Alaska.....	Medium Reds.....	3	145,837	18,355	12.60	13,408	10.87
Central Alaska.....	do.....	9	238,572	141,424	59.29	39,430	7.84
Southeast Alaska.....	do.....	33	1,033,339	419,046	40.55	98,324	10.51
Puget Sound.....	do.....	27	813,269	501,857	73.90	91,961	8.84
Columbia River.....	do.....	10	728,221	587,879	80.72	47,861	15.11
Outside Rivers ¹	do.....	10	394,779	376,224	95.29	34,417	11.48
Totals and averages.....		92	3,349,017	2,044,815	61.05	316,429	10.58
West Alaska.....	Pinks.....	2	3,958,301	1,175,745	29.70	219,508	18.03
Central Alaska.....	do.....	10	5,221,887	2,172,476	41.62	324,239	16.11
Southeast Alaska.....	do.....	33	24,166,834	10,473,748	43.30	1,362,187	17.26
Puget Sound.....	do.....	26	11,805,693	6,361,801	53.80	858,396	13.68
Columbia River.....	do.....	1	77,081	14,635	18.98	4,761	16.21
Outside Rivers ¹	do.....	1	62,892	62,892	100.00	4,222	14.89
Totals and averages.....		73	45,292,778	20,261,390	44.90	2,773,394	16.29
West Alaska.....	Chums.....	9	527,982	194,962	36.92	54,215	9.74
Central Alaska.....	do.....	33	728,514	418,419	57.43	79,268	9.20
Southeast Alaska.....	do.....	26	4,087,578	2,554,068	62.49	480,896	8.50
Puget Sound.....	do.....	27	2,547,457	1,552,350	60.97	249,340	10.22
Columbia River.....	do.....	8	277,836	125,436	44.42	28,085	9.89
Outside Rivers ¹	do.....	7	88,736	84,413	95.12	11,655	7.61
Totals and averages.....		119	8,258,103	5,228,548	63.31	903,448	9.14
Puget Sound.....	Steelheads.....	1	33	33	100.00	5	6.60
Columbia River.....	do.....	10	138,421	145,581	105.01	22,234	6.71
Outside Rivers ¹	do.....	1	757	787	100.00	126	6.24
Totals and averages.....		12	139,241	146,401	105.00	22,365	6.22

¹ Coastal streams in Washington, Oregon, and California.

The red salmon run between June and September. In the Puget Sound district this species is called sockeye, and has its largest run every fourth year, in the year following leap year. In 1917, however, the large run that was anticipated failed to materialize. This seasonal run is shown by the fact that in 12 years, from 1902 to 1913, the average pack on Puget Sound was reported as 889,764 cases, but in the three big run years the average pack was reported as 1,778,351 cases. The Fraser River in British Columbia is the greatest sockeye stream. The meat of this species, which is red and firm, is in great demand, and sells for the highest price of any grade of canned salmon except the Columbia River chinook. There is a loss

of over 30 per cent in weight in the canning of the red species. (See sec. 2 of Chap. III.)

The chinook or king salmon is found from California to Norton Sound, Alaska, and in Asiatic waters as far south as China. It is the largest of the salmon. The Bureau of Fisheries gives this species an average weight of 22 pounds, although in some cases the fish weigh as much as 100 pounds. Table 2 shows that the great bulk of this species is canned on the Columbia River. The average number of fish required to fill a case of 48 pounds was 3.73 in 1916, and 3.96 in 1917, there being a waste of between 40 and 45 per cent in the canning process. The fish were larger in the Columbia River and in the outside streams, and smaller in the Alaskan waters.

The flesh of the chinook salmon is sometimes white, but generally a deep red. It is highly prized commercially. The Columbia River chinook commands a higher price than the Alaska king salmon.

In California there are two runs of this species. In the Columbia River there are three runs: January to March; May to the first of July; and late July to the first of October. In Puget Sound and Southeast Alaska they are found the year around, but in Puget Sound they are plentiful only during the spawning season. They are caught in southeast Alaska in May and June, and from August to October. In west Alaska, they run in May and June.

The medium red or coho is found in California, and to the north. Its flesh is not a clear red, and it is less prized than that of the red or chinook, but is more in demand than the pink or chum species. The medium red, weighing on the average 6 pounds, is larger than the red. The average number required to fill a case was 9.26 in 1916 and 10.58 in 1917. There was a waste in canning of 13.6 per cent in 1916 and 24.4 per cent in 1917. This fish frequently runs alone, and being suspicious of nets is caught in relatively small quantities. This species is relatively unimportant, except in Southeast Alaska, on Puget Sound, and in the Outside Rivers.¹

The pink is the smallest of American salmon, with an average weight of 4 pounds. Between 16 and 17 fish are required to fill a case. It is of commercial importance from Puget Sound north, being canned in largest quantities in Southeast Alaska. It runs from June until late fall. The flesh is pale in color and not as firm as that of the other species. It is not especially prized, and in the past it has been difficult to market. However, from the point of view of quantity, pink salmon is very important. More pink salmon was canned than any other species in 1917. The waste in canning this species was about 25 per cent.

The chum salmon is found from San Francisco north, but is most plentiful from Puget Sound to Southeast Alaska. The Bureau of Fisheries reports an average weight of 8 pounds for this species. It requires between 9 and 10 fish to fill a case; the waste in canning is about 34 per cent. The bulk of the pack comes from Puget Sound and Southeast Alaska.

The steelhead trout is found as far north as Central Alaska, but is caught principally in the Columbia River. It is sold principally for the fresh and frozen markets, but some is canned on the Columbia River. The waste in canning this species is about 22 per cent.

¹ Small coastal streams in Washington, Oregon, and California.

Section 3. Methods of catching salmon.

Salmon, for commercial purposes, are caught principally in nets, seines, and traps. Traps or pound nets were introduced on the Columbia River in 1879, and have since come to be very widely used. They are especially important in Puget Sound and in Southeast Alaska. The number of good trap locations is limited. In order to be successful, traps must be placed where fish run more or less regularly in large numbers, as in the straights or "narrows" through which the fish pass to reach their spawning grounds. As such locations are limited in number, they have come to be very valuable; the canner who has several good trap locations has a great advantage over the canner who must purchase his fish, or catch them in poor locations or by more expensive methods. In some sections, notably in the Puget Sound district, this has led to a wide variation in the fish costs of competing cannerys. Traps have changed hands at prices much above the cost of construction; many cannerys in Puget Sound and Southeast Alaska carry trap locations on their books as assets at large figures.

TABLE 3.—VALUATION OF TRAP SITES—NUMBER OF COMPANIES REPORTING, BY DISTRICTS, FOR 1916 AND 1917.

District.	1916				
	Number of companies reporting no trap value.	Number of companies reporting trap value.	Per cent of companies reporting trap value.	Total trap value reported.	Average per company reporting trap value.
Puget Sound.....	12	11	47.8	\$1,605,142.14	\$145,922.01
Southeast Alaska.....	26	15	36.5	773,837.73	51,589.18
Central Alaska.....	6	2	25.0	160,000.00	80,000.00
Columbia River.....	11	1	8.3	31,735.00	31,735.00
Outside Rivers.....	11	3	21.4	4,175.00	1,391.66
West Alaska.....	9				
Total and average.....	75	32	29.9	2,574,889.87	80,465.31
District.	1917				
	Number of companies reporting no trap value.	Number of companies reporting trap value.	Per cent of companies reporting trap value.	Total trap value reported.	Average per company reporting trap value.
Puget Sound.....	21	11	34.3	\$1,546,142.14	\$140,558.33
Southeast Alaska.....	26	15	36.5	1,215,337.65	81,022.51
Central Alaska.....	8	2	20.0	160,000.00	80,000.00
Columbia River.....	14	1	6.6	32,075.00	32,075.00
Outside Rivers.....	14	3	17.7	2,705.00	901.67
West Alaska.....	10				
Total and average.....	93	32	27.8	2,956,259.79	92,333.12

Table 3 shows that the total amount of such "valuations" reported in 1917 was \$2,956,259.79, while \$2,574,889.87 was reported in 1916. Of the amount reported in 1917, \$1,546,142.14 was reported in Puget Sound and \$1,215,337.65 in Southeast Alaska. Trap values

on the books of the Central Alaska, Columbia River, and Outside River cannerys were relatively small, while none were reported by West Alaska cannerys. In making up this table the canning companies were placed in the districts in which they packed the largest number of cases. While the schedules did not indicate in which section the traps were actually located, it is clear that practically all of such "values" were represented by traps in Puget Sound and Southeast Alaska. Of the companies reporting, 32 carried their trap sites as assets. This was 29.9 per cent of the companies reporting for 1916, and 27.8 per cent for 1917. Evidently the new companies did not have desirable locations, or if they had them, they did not capitalize them. In the Puget Sound district, 11 companies reported valuations for their trap sites—this represented 47.8 per cent of the companies reporting from this district in 1916 and 34.3 per cent in 1917. In Southeast Alaska 15 companies, in Central Alaska 2 companies, in Outside Rivers 3 companies, and in Columbia River 1 company reported such "values," while in West Alaska no such "value" was reported.

Since the licenses paid for these trap locations are nominal, it is extremely doubtful if such sites should be carried as assets. In determining the investment of salmon canning companies for the purposes of calculating profits on investment, book valuations of trap sites were excluded, and only items of actual cost were allowed.

In Alaska, fish traps may be operated 300 yards from the mouth of any salmon stream and along the shores of all rivers over 500 feet wide, except the streams emptying into Cook Inlet, the streams on Afognak Island, and Wood River. A clear-water distance of 600 yards laterally and 100 yards endwise must be maintained between all traps. There is no limitation on length of "leads" or depth of water into which piles may be driven.

In Washington, licenses for trap sites are good for four years, but in Alaska the first on the ground can build a trap. As the piling has to be pulled at the end of the season in these northern waters, due to the heavy ice, it would appear that all locations would be open each year. However, trap sites once recognized as the property of an individual are seldom "jumped," as long as he maintains a trap there.

Section 4. Fish purchased and caught by cannerys.

Some salmon cannerys employ fishermen to catch the fish needed to operate their plants; others buy fish from fishermen operating independently, while still others catch a part of their supply and purchase the remainder from fishermen. The older fishing sections have more independent fishermen, and the cannerys in these sections are more dependent upon purchased fish. Thus, during 1917, the cannerys located on the "outside rivers" (Klamath, Rogue, Quinnalt, Sacramento, Smith, and other streams emptying directly into the Pacific) purchased all of the reds, medium reds, and chums. The Columbia River, Puget Sound, Southeast and Central Alaska packers also buy a large part of the fish canned. In Western Alaska however, where the population is sparse and cannerys are located too far away for the small fisherman to venture, the cannerys catch most of the fish themselves. The number of fish canned, the number purchased, and the percentage of the total bought are shown by districts in Table 4. Since these figures were reported by companies

and not by plants, they do not in all cases accurately reflect conditions. For instance, a firm having its major operations in West Alaska may also have a plant on Puget Sound; in such a case fish purchased on Puget Sound appear to have been purchased in West Alaska, according to the table. Similarly, a firm having its operations principally on Puget Sound may also have plants in Alaska, where fish are caught by the canning company itself, and yet in this table they appear as being caught in Puget Sound. It is believed that these errors are only partly compensating.

TABLE 4.—NUMBER OF FISH CANNED AND PURCHASED,¹ WITH PERCENTAGES PURCHASED BY DISTRICTS: 1916 AND 1917.

District.	1916			1917		
	Number fish canned.	Number fish purchased.	Per cent fish purchased.	Number fish canned.	Number fish purchased.	Per cent fish purchased.
West Alaska.....	22,367,790	1,920,747	8.6	26,189,713	2,599,502	9.9
Central Alaska.....	6,152,574	2,672,834	43.4	8,495,120	3,726,844	43.9
Southeast Alaska.....	18,703,833	8,495,643	45.4	31,536,387	14,725,113	46.7
Puget Sound.....	6,655,547	2,814,528	42.3	20,107,673	10,055,351	50.0
Columbia River.....	2,465,515	2,052,615	83.3	3,395,292	2,190,231	64.5
Outside Rivers.....	579,870	575,816	99.3	614,440	589,652	96.0
Total.....	58,925,129	18,532,233	31.5	90,338,625	33,886,693	37.5

¹ The number of fish shown in this table is not the exact number canned or purchased, as a few companies did not make this distinction in answering this question. However, it is believed that the omissions would not materially affect the percentages of fish purchased.

Considering all species of fish, only 8.6 per cent of the fish canned by West Alaska packers in 1916 and 9.9 per cent in 1917 were purchased, compared with 99.3 per cent purchased by Outside River canners in 1916 and 96 per cent in 1917. Columbia River packers after Outside River packers are next most dependent on commercial fishermen for their raw fish, purchasing 83.3 per cent of all those canned in 1916 and 64.5 per cent in 1917. The total percentage purchased by all American canners was 31.5 in 1916 and 37.5 in 1917.

Table 2 shows that the canners bought more steelheads than were canned in 1917; the surplus was evidently sold in the fresh market. The smallest percentage of any species purchased was 13.3 per cent of reds in 1916 and 16.4 per cent in 1917. The difference in the percentage of the various species purchased depends not so much on the kind of fish as on the section in which the species predominates.

Section 5. Difficulty in securing fish.

Packers with desirable trap locations or situated in sections where fish are both plentiful and easily caught with seines or nets have no difficulty in securing an adequate supply of raw fish in years when the fish run in large numbers. Canners without desirable trap locations and situated in sections where the grounds are overrun with fishermen may experience great difficulty, however, in securing sufficient fish for the economical operation of their plants. This is especially true of the Puget Sound district. Here, within recent years, the demand for fish by the canners and fresh-fish dealers has been so great and the supply has been so limited that prices have been forced up. Thus the canners in this section who depend upon independent fishermen

for their supplies must pay the very high market price for the fish. The Puget Sound prices have recently been much higher than the cost of catching or purchasing fish in Alaska. One company, which is supposed to be typical, reported the following advances in fish prices on Puget Sound during 1917: Sockeye opened at 50 cents apiece and closed at 75 cents; humpback opened at 5 cents apiece and closed at 28 cents. This has meant a higher cost of production for such canners and has placed them at a serious disadvantage compared with canners more favorably situated. There has also been serious competition for fish between canners located on the Canadian and American sides of Puget Sound, and complaint has been made that fish caught in American waters have gone to Canadian packers who have outbid the American canners.

The canners were asked the following question: "What difficulties in obtaining salmon have you encountered because of control of salmon grounds by other companies?" The canneries in West Alaska uniformly reported that no trouble had been experienced in securing fish. In the Central Alaska district very little trouble was reported.

In Southeast Alaska, an older canning district which is more thickly settled, competition is keener, and about one-fourth of the firms experienced trouble in securing fish. Their trouble consisted largely of increased prices and competition. Among the canners located on the coastal streams of Oregon, Washington, and California only one-third of those answering the question reported trouble in securing raw fish. Of the 15 Columbia River canners answering the question 4 reported having trouble. Twenty-five of the Puget Sound canners answered this question, of whom 20 reported no difficulties, 4 complained of high prices or scarcity of fish, and 1 feared a shortage of labor.

Aside from competition and high prices, the difficulties specified were: obstruction of channel (by fresh fish company), theft of fish from traps, trouble with gill netters, controversies with United States Department of Indian Affairs, control of tidal lands by lumber companies, and lack of permanence in tenure of trap and net locations.

Section 6. The general method of marketing canned salmon.

Salmon canners, like fruit and vegetable canners, have not as a rule developed their own sales organizations and are dependent upon brokers or sales agents for the sale of their goods. Due to the small size of the companies and the limited number of products manufactured, this method of marketing seems to be more economical than the maintenance of a sales force by each canner. At any rate the canner who has a small output, limited capital, and who is located in a section remote from the large markets (as the salmon canner generally is) is unable to maintain a sales organization and must rely upon others to market his product.

Nearly all canned salmon passes through the hands of brokers or sales agents. The sales agent, as distinguished from the broker, is of greater relative importance in the marketing of salmon than in the other branches of the canning industry. It is shown in section 9 of this chapter that in 1917, 116 companies sold 4,934,974 cases through sales agents and 1,938,947 cases through brokers. The amount sold directly to jobbers or outright to brokers is not shown. The quantity

sold through sales agents and brokers, however, was over 80 per cent of the 1917 pack, and was larger than the 1916 pack, in spite of the fact that figures for several companies were not available.

It is evident, therefore, that sales for a relatively small part of the pack were effected directly by the canners. As the reports of the brokers show that they purchased outright a considerable quantity of salmon from the canners, it is apparent that the canners sell a very small amount of salmon directly to the jobbers or wholesalers. Table 5 shows that in 1917, out of 115 companies, 53 sold their entire output through sales agents, 18 sold entirely through brokers, and only 4 reported selling their entire packs directly to either brokers or jobbers.

Most of the brokers are located on the Pacific coast, and Seattle has the largest number of them. Very few of them have a selling organization which extends over the country, and consequently they have to sell largely through brokers located in the various cities throughout the country, paying them a sub-brokerage of from 2 to 4 per cent. The ordinary brokerage on canned salmon is 5 per cent, about one-half of which is paid to the sub-brokers. Commissions as high as 13½ per cent and as low as 2½ per cent, however, were reported. Several canning companies have selling departments which dispose of their output and generally of the output of one or two other affiliated packers through eastern brokers. The only selling expense of these companies in such cases was the sub-brokerage. Sometimes the president or a member of the firm acts as selling agent for the sale of the pack and accepts the net brokerage (the regular brokerage less the sub-brokerage) in lieu of a salary or as a part of it.

Most of the large salmon brokers own or control directly one or more canning companies, which bring them into close touch with the canners and into sympathy with their interests. Some of the brokers, through advances of money, through sales contracts, or in other ways practically control the output of several canners.

Section 7. The importance of sales agents and brokers.

In the salmon canning industry, a sales agent is a broker who has the right to sell all or a specified part of a canner's output, or to dispose of all of it except the portion sold to certain persons or in specified places. Most of the brokers acted as sales agents for one or more canners, and generally they carried on at the same time a large brokerage business for canners for whom they were not sales agents. Most brokers also did some merchandising business. During 1917 many sales were made between brokers.

Table 5 shows the number of companies which sold their packs through the various trade channels. Many canners do not distinguish between sales agents and brokers or between direct sales and brokerage sales. Many consider goods sold at the opening price through brokers or selling agents, upon which a commission is paid, as an outright or a direct sale. This is probably due to the fact that goods are "billed" to the sales agent, who remits for them (less cash discount and brokerage). The broker or sales agent, however, is not the buyer, but only an agent, and he is obligated to remit all of the sales price less discount, brokerage, and expenses to the canner. Such errors were corrected when found in the schedules.

Nevertheless, there is still the possibility that the table is not correct in every detail.

TABLE 5.—TRADE CHANNELS USED IN THE MARKETING OF CANNED SALMON, 1916 AND 1917.

District.	Number of companies reporting.	Canneries who sold through sales agents.					
		Entire pack.		Part of pack.		None of pack.	
		Number companies.	Per cent of total number companies.	Number companies.	Per cent of total number companies.	Number companies.	Per cent of total number companies.
1916.							
Southeast Alaska.....	35	19	54.29	4	11.43	12	34.28
West Alaska.....	5	5	60.00	.....	.....	3	40.00
Central Alaska.....	7	2	28.57	2	28.58	3	42.85
Puget Sound.....	20	12	60.00	4	20.00	4	20.00
Columbia River.....	11	3	27.27	3	27.27	5	45.46
Outside Rivers.....	10	4	40.00	4	40.00	2	20.00
Total and average.....	91	45	49.45	17	18.68	29	31.87
1917.							
Southeast Alaska.....	40	19	47.50	8	20.00	13	32.50
West Alaska.....	9	5	55.55	1	11.12	3	33.33
Central Alaska.....	10	5	50.00	2	20.00	3	30.00
Puget Sound.....	30	16	53.34	7	23.33	7	23.33
Columbia River.....	13	2	15.38	5	38.47	6	46.15
Outside Rivers.....	13	6	46.15	1	7.69	6	46.15
Total and average.....	115	53	46.08	24	20.87	38	33.05
District.	Number of companies reporting.	Canneries who sold through brokers.					
		Entire pack.		Part of pack.		None of pack.	
		Number companies.	Per cent of total number companies.	Number companies.	Per cent of total number companies.	Number companies.	Per cent of total number companies.
1916.							
Southeast Alaska.....	35	5	14.28	11	31.43	19	54.29
West Alaska.....	8	.....	.....	2	25.00	6	75.00
Central Alaska.....	7	1	14.28	3	42.86	3	42.86
Puget Sound.....	20	4	20.00	3	15.00	13	65.00
Columbia River.....	11	.....	.....	6	54.55	5	45.45
Outside Rivers.....	10	.....	.....	5	50.00	5	50.00
Total and average.....	91	10	10.98	30	32.96	51	56.06
1917.							
Southeast Alaska.....	40	8	20.00	11	27.50	21	52.50
West Alaska.....	9	.....	.....	3	33.34	6	66.66
Central Alaska.....	10	1	10.00	2	20.00	7	70.00
Puget Sound.....	30	4	13.33	8	26.67	18	60.00
Columbia River.....	13	3	23.08	5	38.46	5	38.46
Outside Rivers.....	13	2	15.38	3	23.08	8	61.54
Total and average.....	115	18	15.66	32	27.82	65	56.52

TABLE 5.—TRADE CHANNELS USED IN THE MARKETING OF CANNED SALMON, 1916 AND 1917—Continued.

District.	Number of companies reporting.	Canners who sold directly to jobbers or brokers.					
		Entire pack.		Part of pack.		None of pack.	
		Number companies.	Per cent of total number companies.	Number companies.	Per cent of total number companies.	Number companies.	Per cent of total number companies.
1916.							
Southeast Alaska.....	35			8	22.85	27	77.15
West Alaska.....	8	1	12.50	2	25.00	5	62.50
Central Alaska.....	7			4	57.15	3	42.85
Puget Sound.....	20			3	15.00	17	85.00
Columbia River.....	11	1	9.10	7	63.63	3	27.27
Outside Rivers.....	10			5	50.00	5	50.00
Total and average.....	91	2	2.20	29	31.86	60	65.94
1917.							
Southeast Alaska.....	40			11	27.50	29	72.50
West Alaska.....	9	1	11.11	3	33.33	5	55.56
Central Alaska.....	10			4	40.00	6	60.00
Puget Sound.....	30			9	30.00	21	70.00
Columbia River.....	13	1	7.69	5	38.46	7	53.85
Outside Rivers.....	13	2	15.38	3	23.08	8	61.54
Total and average.....	115	4	3.47	35	30.45	76	66.08

In 1916, 45 companies, or 49.5 per cent of those which reported, sold their entire outputs through sales agents; 53 companies or 46.1 per cent of those which reported in 1917 sold their entire output through sales agents. This might indicate a slight tendency to break away from the use of exclusive sales agents, but it appears that this decreased percentage was due to new companies choosing other methods rather than to old companies breaking established connections. Apparently the Puget Sound and West Alaska packers are the most dependent upon sales agents, and the Columbia River packers the least dependent. In 1916 there were 29 companies, or 31.9 per cent of the total number, which in 1916 made no use of sales agents, and there were 17 companies, or 18.7 per cent, which sold a part of their packs through them; while in 1917 there were 38 companies, or 33.1 per cent, who did not use sales agents, and 24 companies, or 20.9 per cent, who sold only a part of their pack through them.

The number of companies which reported the sale of their entire packs through brokers increased from 10 companies, representing 11 per cent of the total number in 1916, to 18, representing 15.7 per cent of all the companies, in 1917. The companies which sold their entire outputs through brokers in 1917, but not in 1916, apparently sold a part of their packs in this way in 1916, as very little difference existed in the percentages of companies which made no use of brokers in 1916 and 1917.

The preceding table shows that very few of the salmon canners sold their entire outputs directly to the jobbers. Only 4 companies, or 3.5 per cent of the total number of companies, marketed their entire outputs in this way in 1917, and only 2 companies did so in 1916. About two-thirds of the reporting packers made no direct sales and about one-third sold parts of their packs themselves.

TABLE 6.—SALES OF CANNED SALMON BY BROKERS IN 1917.

Location.	Number of brokers.	Exclusive sales agents.			Sales agents, not exclusive.			Straight brokerage business.			Merchandising business, ¹ number cases purchased.	Total number cases handled.
		Number canners who reported.	Number cases sold.	Rate of commission.	Number canners who reported.	Number cases sold.	Rate of commission.	Number cases sold.	Rate of brokerage.			
Pacific coast.....	18	69	3,165,064 798,638 51,208 5,323	5 per cent. 4 per cent. 10 per cent. 2.5 per cent.	22	453,340 101,342 10,000	5 per cent. 1.5-3 per cent. None	333,321	1.25-5 per cent.	680,457	5,613,726	
Average per broker.....			223,351			31,371		18,618		37,803	311,874	
Eastern half of United States.....	9	21	292,667 324,043 73,672 17,589	5 per cent. 2.5 and 5 per cent. 2-5 per cent. 3 per cent.	14	26,085 1,000 54,173	5 per cent. 2 per cent. Not stated.	108,344	1.25-4 per cent.	227,982	1,175,535	
Average per broker.....			77,552			9,026		18,704		25,331	130,615	

¹ Buy and sell business.

² The basis on which 14,643 cases of this amount were handled was not stated in report.

Section 8. Business done by the brokers.

The number of cases of canned salmon handled by 27 brokers and sales agents, together with the rates of brokerage (or commission) received during 1917 are shown in Table 6. Of these, 18 were salmon brokers located on the Pacific Coast, and 9 were general canned-food brokers located in various cities throughout the eastern half of the United States.

The 18 Pacific Coast brokers were exclusive sales agents for 69 canners. The number of cases handled by them on this basis was 4,020,323. The 9 eastern brokers were exclusive agents for 21 canners and sold for them 697,971 cases. The number of cases handled by these two groups of brokers as exclusive sales agents was equal to 69.5 per cent of the total number of cases covered by this table. The rate of commission received on these sales was generally 5 per cent, although rates as high as 10 per cent and as low as 2 per cent were reported.

The Pacific Coast brokers represented 22 canners as nonexclusive sales agents for whom they sold 564,682 cases. The 9 eastern brokers were nonexclusive sales agents for 14 canners for whom they sold 81,238 cases. The two groups of brokers together sold on this basis 9.5 per cent of the total amount handled. The rate of commission was generally 5 per cent, but in some instances was as low as 1.5 per cent.

The Pacific Coast brokers sold 333,321 cases on a straight brokerage basis at rates of commission varying from 1.25 per cent to 5 per cent. The eastern brokers handled 168,344 cases on the same basis, for which they received a commission of from 1.25 per cent to 4 per cent. The number of cases handled on a straight brokerage basis made up over 7.4 per cent of the total amount.

The Pacific Coast brokers purchased (outright) 680,457 cases and the eastern brokers purchased 227,982 cases. These figures show that 13.5 per cent of the total amount of salmon was handled on a merchandising or a buy-and-sell basis.

The average number of cases handled by the 18 coast brokers was 311,874 per company, as compared with an average of 130,615 per company for the eastern brokers. As the Pacific Coast brokers purchased outright an average of 37,803 cases per company and the eastern brokers an average of 25,331 cases, it is evident that the latter did a relatively larger buy-and-sell business in salmon than the Pacific Coast brokers.

Section 9. The canners' method of distributing their goods—sales agents and brokers.

In 1917 the total number of cases packed and purchased by the 116 companies reporting was 8,105,028, while in 1916, 5,700,602 cases were packed by the 91 companies reporting (217,807 cases were reported as purchased by canners for resale in 1917; this information was not procured for 1916).

The number of cases sold through sales agents and brokers with rates of commission paid are shown in Table 7.

TABLE 7.—CANNERS' DISTRIBUTION OF THEIR SALMON PACKS IN 1916 AND 1917—NUMBER OF CASES SOLD THROUGH SALES AGENTS AND BROKERS WITH RATE OF COMMISSION PAID.

District.	Total number companies reporting.	Sold through sales agents.			
		Total number cases.	Per cent sold at 5 per cent commission.	Per cent sold at 4 per cent commission.	Per cent sold at 2½ per cent commission.	Per cent on which rate of commission was not stated.^{1}
1916					
West Alaska.....	8	1,864,548	13.9	86.1	
Central Alaska.....	7	405,038	52.0		0.3
Southeast Alaska.....	35	1,386,827	85.2		8.9
Puget Sound.....	19	1,120,042	86.6		2.8
Columbia River.....	12	142,122	47.6		
Outside Rivers.....	10	31,277	100.0		
Total and averages.....	91	4,949,854	55.0	32.4	3.2
1917					
West Alaska.....	9	1,495,572	13.0	84.6	
Central Alaska.....	10	478,825	58.6		84.1
Southern Alaska.....	40	1,809,629	88.7		8.6
Puget Sound.....	31	1,012,061	82.7		3.1
Columbia River.....	13	123,047	53.5		
Outside Rivers.....	13	15,840	100.0		
Total and averages.....	116	4,934,974	60.7	25.7	7.1

District.	Total number companies reporting.	Sold through brokers.			
		Total number cases.	Per cent sold at 5 per cent commission.	Per cent sold at 2½ per cent commission.	Per cent on which rate of commission was not stated. ¹
1916					
West Alaska.....	8	122,315	39.2		60.8
Central Alaska.....	7	82,031	1.6		98.4
Southeast Alaska.....	35	867,408	45.9	1.1	50.0
Puget Sound.....	19	256,409	11.0	1.2	87.8
Columbia River.....	12	210,103	24.0		76.0
Outside Rivers.....	10	57,604	100.0		
Total and averages.....	91	1,575,890	38.6	.9	60.5
1917					
West Alaska.....	9	97,658	51.9		48.1
Central Alaska.....	10	48,534			100.0
Southeast Alaska.....	40	974,374	29.9	7.0	63.1
Puget Sound.....	31	348,518	32.2	4.3	63.5
Columbia River.....	13	438,424	65.4		34.6
Outside Rivers.....	13	31,439	80.4	19.6	
Total and averages.....	116	1,933,947	39.5	4.6	55.9

¹ In most instances only the total commission or brokerage paid was reported; however, this generally amounted to about 5 per cent on sales.

² 100,420 cases at 10 per cent commission are included.

³ 162,049 cases at 3 per cent commission are included.

⁴ 110,674 cases at 10 per cent commission are included.

⁵ 10,848 cases at 13½ per cent commission are included.

In 1917, 4,934,974 cases were sold through sales agents. A commission of 5 per cent was paid by the canners on about three-fifths of this amount. On about one-quarter of it (sold by a company in the West Alaska district), a 4 per cent commission was paid. On 7.1 per cent of these sales the rate of commission was 2½ per cent, while on 6.5 per cent of them the rate of commission was not stated, but was probably 5 per cent in most instances. In 1916 a commission of 5 per cent was paid on more than one-half of the total amount sold through sales agents; 4 per cent was paid on nearly one third; 2½ per cent was paid on a very small amount (only 3.2 per cent of total).

The amount sold on a brokerage basis was 1,938,947 cases in 1917 and 1,575,890 cases in 1916. This represented 275 brokerage transactions in 1917 and 295 transactions in 1916. In 1917 a 5 per cent commission was paid on about two-fifths of the amount sold through brokers; on less than one-twentieth of this amount a 2½ per cent commission was paid. The brokerage paid on 55.9 per cent of the sales was not stated, but apparently averaged 5 per cent. In 1916 the amount upon which a 5 per cent brokerage was paid was 608,175 cases (nearly two-fifths of the total). The amount upon which 2½ per cent was paid was less than 1 per cent of the total, while the rate of brokerage paid on three-fifths of the sales was not stated.

This table established two points clearly: (1) The larger part of the canned salmon passes through the hands of the exclusive selling agents; (2) 5 per cent is the prevailing rate of commission paid both to selling agents and to brokers.

Section 10. Labels used on canned salmon.

The labels or brands under which a canned food is sold are valuable to the consumer as guides to the quality of the contents and to the seller as an aid in the marketing of his product. If a label is widely and favorably known, it is very valuable to the person who controls its use. Many canned goods have come to be sold under the broker's or jobber's label, so that the canner is unknown to the consumer and gets no credit for a high quality.

The number of cases sold in 1917 under packers' labels, jobbers' labels, brokers' labels, and unlabeled are shown in Table 8. This shows that on the average 70 per cent of the total quantity marketed was sold under packers' labels. The largest percentage was in the West Alaska district, where 91 per cent was marketed under the packers' label. This is significant when it is remembered that the larger companies are located in this district. The smallest percentage was in the Puget Sound section, where only 50 per cent of the salmon marketed bore the packers' labels, and 5 per cent was labeled after leaving packers' hands. The brokers' labels were used on 25.5 per cent of the total from this district.

TABLE 8.—LABELS USED ON CANNED SALMON—NUMBER AND PERCENTAGE OF PACKERS', JOBBERS', AND BROKERS' LABELS USED IN 1917.

District.	Number companies reporting.	Total number cases reported.	Sold under packers' label.		Sold under jobbers' label.		Sold under brokers' label.		Sold unlabeled. ¹	
			Number cases.	Percent- age.	Number cases.	Percent- age.	Number cases.	Percent- age.	Number cases.	Percent- age.
Southeast Alaska.....	34	2,450,210	1,625,123	66.4	274,624	11.2	525,133	21.4	24,330	1.0
West Alaska.....	9	1,685,270	1,532,861	91.0	52,234	3.1	53,013	3.1	47,162	2.8
Central Alaska.....	9	536,325	390,519	73.0	54,710	10.1	83,489	15.5	7,607	1.4
Outside Rivers.....	12	68,544	45,692	71.1	11,696	16.8	7,621	11.4	23,425	7.7
Columbia River.....	12	683,851	394,832	70.0	17,639	20.9	25,333	25.5	71,804	5.0
Puget Sound.....	25	1,410,525	705,094	50.0	274,016	19.5	399,338	28.5	174,456	2.6
Total.....	104	6,715,025	4,698,121	70.0	735,429	11.7	1,057,046	15.7	174,456	2.6

¹ In addition, one company reported selling its entire pack (100,674 cases) either unlabeled or under buyer's labels.

Only 11.7 per cent of the canned salmon was sold under the jobbers' labels, the highest relative amounts sold under such labels being sold by the Columbia River and Puget Sound packers.

The brokers placed their labels on 15.7 per cent of the total. However, 25.5 per cent of the total reported by Puget Sound canners and 21.4 per cent from Southeast Alaska, were sold under brokers' labels. On the other hand, only 3.1 per cent from West Alaska and 5 per cent from Columbia River carried the brokers' brands. This indicates that the brokers' labels are more important in marketing canned salmon than in the sale of canned vegetables.² Figures for a large Seattle brokerage firm show that 21.9 per cent of the total salmon handled by them in 1916 and 24.2 per cent in 1917 bore their own labels.

This table shows that only 174,456 cases, or 2.6 per cent of the total sales in 1917, left the packers' hands unlabeled. These figures, however, may be too small, as this information was not specifically called for in the schedule, and some packers may have failed to state the number of cases shipped unlabeled. Unlabeled goods later bore the brokers' or jobbers' label—presumably the jobbers' label in most instances.

¹ The wholesale dealer as distinguished from the broker or commission man.

² See Federal Trade Commission Report on Canned Foods: General Report, and Canned Vegetables and Fruits, Washington, 1918.

CHAPTER II.

THE CONSUMPTION AND PRODUCTION OF CANNED SALMON.

Section 1. Consumption and export of canned salmon.

Canned salmon is a very nutritious food: it is especially high in protein and contains much fat. Various analyses show from 19.3 to 26.5 per cent of protein, the average apparently being about 20 or 21 per cent, and from 3.6 to 15.3 per cent of fat.

The per capita consumption of canned salmon has increased in recent years, being about 1.2 pounds in the fiscal year 1900, 1.6 pounds in the fiscal year 1910, 1.7 pounds in the fiscal year 1915, and 1.8 pounds in the fiscal year 1917. These figures are arrived at by taking the pack reported by the Bureau of Fisheries for the preceding season, subtracting the amount exported during the fiscal year, and dividing by the reported population of the United States. This does not take into consideration the stocks carried over into the next season, but it is evident that consumption has increased faster than the population, and that canned salmon has become an important foodstuff in this country. It was especially important during the war, as it is a concentrated, nonperishable food, and hence suitable as a ration for armed forces. This is shown by the large exports during 1916 and 1917.

The domestic production of salmon is greater than the domestic consumption and a large export trade has developed, the amount exported increasing from 27,082,370 pounds in the fiscal year 1900 to 83,446,116 pounds in 1915, 152,943,962 pounds in 1916, and 117,962,807 pounds in 1917.

The amount exported has increased faster than the amount packed. The export during a fiscal year is made largely from the pack of the preceding season and seems to bear some relation to the quantity packed, indicating that the surplus was exported after the domestic demand was met. Thus, in the fiscal year 1900, 22.6 per cent of the preceding season's pack was exported. Similar percentages are 27.3 for 1905, 30.2 for 1910, and 31.4 for 1915, 49 for 1916, and 38.6 for 1917. The high percentages for 1916 and 1917 are explained by the large demand by the warring nations, and by the decreased domestic consumption due to the high price. British Columbia, Canada, is the only serious competitor of the United States in the export trade, although Siberia and Japan may become rivals in the future. The Siberian industry has grown rapidly since its beginning in 1910; over 500,000 cases were packed in 1917. Japan's industry established in 1913 has grown more slowly. The United Kingdom is the largest importer of canned salmon from the United States, taking 62 per cent of our exports in 1900, 74 per cent in 1915, and 64 per cent in 1917. The details of exports are shown in Table 9.

TABLE 9.—NUMBER OF POUNDS OF CANNED SALMON EXPORTED FROM THE UNITED STATES DURING FISCAL YEARS 1900-1917.

Exported to—	1900	1905	1910	1915	1916	1917
Europe.....	18,941,109	21,071,263	44,765,898	63,760,758	114,163,722	82,758,877
North America.....	1,051,818	1,565,773	2,224,516	4,328,246	12,322,259	16,196,177
South America.....	1,868,225	1,708,828	3,193,812	1,801,962	4,593,993	3,314,909
Asia.....	654,126	3,994,862	1,516,775	1,135,793	3,336,665	1,326,163
Oceania.....	3,882,046	5,257,446	11,568,824	12,100,414	17,659,036	12,037,857
Africa.....	684,456	1,468,383	510,871	818,943	898,287	2,328,764
Total.....	27,082,370	35,066,055	63,446,116	83,446,116	152,943,962	117,962,907
Per cent of preceding season's pack exported.....	22.6	27.3	30.2	31.4	49.0	38.6

Examination of the preceding table shows that there has been a steady increase in the export of canned salmon, and that exports have increased more rapidly than production. The largest quantity goes to Europe, while Oceania (principally Australia and the Philippine Islands) takes the next largest quantity.

Seattle has recently become the chief port for the export of canned salmon. In 1900, only 1,477,232 pounds were exported from Seattle as compared with 21,611,030 exported from San Francisco. However, by 1915 there were exported from the Puget Sound ports (principally Seattle) 41,064,868 pounds, which was more than the combined exports from San Francisco and New York, the two next most important ports.

Section 2. The salmon packs of 1916 and 1917.

The total number of full cases (forty-eight 1-pound cans or ninety-six $\frac{1}{2}$ -pound cans) of salmon packed in 1916 was 6,380,925, and in 1917 the number was 8,627,453. Figures for a few small companies, which could not be located or whose reports were unintelligible, were taken from the Pacific Fisherman Yearbook, but these amounted to only 35,863 cases in 1916 and 84,249 cases in 1917. The other figures were reported directly to the Commission by the individual companies.

Table 10 gives the number of full cases packed within the United States by species and districts during 1916 and 1917. The relative importance of each species within each district is shown in Table 11; and the relative importance of the various districts in the production of each species is shown in Table 12.

TABLE 10.—NUMBER OF FULL CASES OF SALMON CANNED IN 1916 AND 1917 BY GRADES AND SECTIONS.

District.	Kings.	Reds.	Medium reds.	Pinks.	Chums.	Steel- heads.	Total.
1916.							
Western Alaska.....	26,914	1,408,325	26,004	42,962	145,489	.....	1,649,694
Central Alaska.....	22,945	582,039	55,249	356,012	68,213	.....	1,083,558
Southeast Alaska.....	18,300	264,233	181,009	1,290,787	482,961	.....	2,237,290
Puget Sound.....	38,111	79,004	148,194	1,400	424,771	143 $\frac{1}{2}$	691,623
Columbia River.....	368,021	5,997	58,916	674	71,188	21,887	526,683
Outside Rivers.....	76,824	10,356	57,135	5,693	41,879	190	192,077
Total.....	550,215	2,349,954	526,507	1,697,528	1,234,501	22,220 $\frac{1}{2}$	6,380,925
1917.							
Western Alaska.....	20,041	1,571,016	5,663	3,213	51,988	.....	1,651,921
Central Alaska.....	19,312	730,755	36,069	134,622	90,756	.....	1,011,514
Southeast Alaska.....	29,166	214,457	148,493	2,149,835	751,940	.....	3,293,491
Puget Sound.....	61,139	410,055	123,546	1,006,989	344,512	.....	1,946,241
Columbia River.....	394,736	8,611	75,587	723 $\frac{1}{2}$	54,576	20,494	554,726
Outside Rivers.....	67,657	4,745	55,815	15,528	25,467	348	109,560
Total.....	592,051	2,939,639	445,173	3,310,909 $\frac{1}{2}$	1,318,839	20,842	8,627,453

¹ Includes 35,863 cases taken from Pacific Fisherman Yearbook, 1916.

² Includes 84,249 cases taken from Pacific Fisherman Yearbook, 1917.

Southeast Alaska was the largest producer, with an output of 2,237,290 cases in 1916, and 3,293,491 cases in 1917. West Alaska came second in 1916, while Puget Sound came second in 1917, due to the large fourth year run. (The expected quantity of sockeyes failed to appear, but the very large number of pinks made up for this failure, so far as quantity was concerned.) Central Alaska was the next most important district, and ranked ahead of Puget Sound in 1916. The Columbia River section has had a very consistent production. About a half million cases of salmon are packed on the Columbia River each year, most of which is chinook. Nearly 67 per cent of the total pack of this high-grade fish was packed on the Columbia River in 1916 and 1917. The various smaller Pacific Coast salmon streams have been important in the history of the industry, but their output makes up a very small part of the total pack at present (3 per cent of total in 1916 and 2 per cent in 1917).

TABLE 11.—RELATIVE IMPORTANCE OF DIFFERENT SPECIES WITHIN EACH DISTRICT. (Per cent which each species is of total pack by districts.)

District.	King or chinook.	Red or sockeye.	Medium red.	Pinks or hump- back.	Chum.	Steel- head.	Total, all grades.
1916.							
West Alaska.....	1.6	85.4	1.6	2.6	8.8	.....	100
Central Alaska.....	2.0	53.7	5.1	32.9	6.3	.....	100
Southeast Alaska.....	.8	11.8	8.1	57.7	21.6	.....	100
Puget Sound.....	5.5	11.4	21.4	.2	61.4	.1	100
Columbia River.....	69.9	1.1	11.2	.1	13.5	4.2	100
Outside Rivers.....	40.0	5.4	29.7	3.0	21.8	.1	100
Per cent of total.....	8.6	36.8	8.3	26.6	19.4	.3	100
1917.							
West Alaska.....	1.2	95.1	.3	.2	3.2	.....	100
Central Alaska.....	1.9	72.2	3.6	13.3	9.0	.....	100
Southeast Alaska.....	.9	6.5	4.5	65.3	22.8	.....	100
Puget Sound.....	3.1	21.1	6.4	51.7	17.7	.....	100
Columbia River.....	71.2	1.5	13.6	.1	9.9	3.7	100
Outside Rivers.....	39.9	2.8	32.9	9.2	15.0	.2	100
Per cent of total.....	6.9	34.2	5.1	38.3	15.3	.2	100

TABLE 12.—RELATIVE IMPORTANCE OF DISTRICTS IN PRODUCTION OF EACH SPECIES.
(Per cent of total amount of each species packed in various districts.)

District.	King or chinook.	Red or sockeye.	Medium red.	Pinks or hump-back.	Chum.	teel-head.	Total, all grades.
1916							
West Alaska.....	4.9	59.9	4.9	2.5	11.8		25.9
Central Alaska.....	4.0	24.8	10.5	21.0	5.5		17.0
Southeast Alaska.....	3.3	11.2	34.4	76.0	39.1		35.1
Puget Sound.....	6.9	3.4	28.1	.1	34.4	.6	10.8
Columbia River.....	66.9	.3	11.2	.1	5.8	98.5	8.2
Outside Rivers.....	14.0	.4	10.9	.3	3.4	.9	3.0
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1917							
West Alaska.....	3.4	53.5	1.3	.1	4.0		19.1
Central Alaska.....	3.3	24.9	8.2	4.1	6.9		11.8
Southeast Alaska.....	4.9	7.2	32.8	64.6	57.0		38.1
Puget Sound.....	10.3	14.0	28.0	30.7	26.1		22.6
Columbia River.....	66.7	.2	17.1	.0	4.1	98.4	6.4
Outside Rivers.....	11.4	.2	12.6	.5	1.9	1.6	2.0
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0

West Alaska is the most important producer of reds, packing 59.9 per cent of all the reds packed by American canners in 1916, and 53.5 per cent in 1917. Reds made up 85.4 per cent of the total West Alaska pack in 1916 and 95.1 per cent in 1917. Central Alaska was the next largest producer of reds, producing 24.9 per cent of all the reds canned in 1917. In 1917, 72.2 per cent of the total pack in this district consisted of reds. Southeast Alaska and Puget Sound packed nearly all of the remainder.

Southeast Alaska and Puget Sound were the largest packers of medium red salmon; these two sections together packed 60.8 per cent of all of this grade of salmon in 1917. This species, however, is relatively most important in the Outside Rivers, making up 32.9 per cent of the total packed on these streams in 1917 and nearly as large a percentage in 1916.

Southeast Alaska was the largest producer of pink or humpback salmon, producing 76 per cent of total in 1916, and 64.6 per cent in 1917. Puget Sound produced 1,946,241 cases in 1917, but only 691,623 cases in 1916. The pink salmon seems to run in these waters in alternate years. Central Alaska was the only other section important in the production of this species.

CHAPTER III.

THE COST OF PACKING AND MARKETING CANNED SALMON.

Section 1. Items included in cost of production.

The fact that there is little uniformity in the accounting systems used by salmon canners makes it difficult to compile uniform statements of the costs of production.

Cost statements were compiled by the Commission's accountants from the books of 19 companies having 54 plants and packing 52 per cent of the total year's production in 1916, and from the books of 20 companies having 62 plants and packing 50.5 per cent of the total year's production in 1917. It is upon these statements gathered by the Commission's accountants that tables 13 and 14 are based. Balance sheets, profit-and-loss statements, and cost figures were submitted to the Commission by practically all the salmon canners. Some of these were incomplete or in poor form. Most of these, however, were used in the tables in sections 2 and 3 of Chapter V, showing the investment and profits in the industry and in the cost figures used in tables 15, 16, 17, and 18, which show the number of cases of salmon produced at various costs.

In compiling the costs the items have been grouped under 11 headings as shown in table 13. The cost of raw fish includes the amount paid for fish, the cost of buying, and the cost of transporting the fish from the fishing grounds to the cannery. When the fish were caught by the canning companies the cost of raw fish includes wages of fishermen, cost of boat operations, maintenance and operation of traps, cost of nets, seines, etc. Salt is the principal item included in "cost of other materials."

The cost of cans includes the amount paid when cans are purchased and the cost of materials and expenses of making when the cans are manufactured. Many companies who manufacture their own cans, however, kept poor records of labor or overhead applicable to this work. For this reason the cost of cans in those instances in which the canners manufactured their own cans may be inaccurate.

Under "Shooks, boxes, and labels" are included the costs of labels, boxes, and shooks, and nails when shooks were purchased and nailed up at the cannery. In such cases the cost of labor applicable to the nailing of the boxes was not ordinarily kept separate from other cannery operations, and so can not be shown separately.

The item "labor" includes the amount paid for Chinese (or Japanese) and White cannery hands. The mess expense, less any income from the mess, is included in cost of labor.

The principal items included in "Other conversion costs" are power, fuel, maintenance, and repairs.

"Transportation of men and supplies" includes the cost of transporting men to and from the canneries, freight on supplies from the bases of operations to the canneries, and freight on canned salmon from Alaska canneries south to the Pacific coast ports. As many

companies do not keep separate costs of carrying supplies north and finished product south, the cost of bringing canned salmon south had to be included in the cost of transporting supplies. For the sake of uniformity this was done in all cases. When the canner owned his vessels and carried his own supplies and men, the cost of operating these vessels was included in "Transportation of men and supplies."

Canners have no uniform method of charging off depreciation on their buildings and equipment. Some canners appear to make heavy charges in good years and small charges in poor years. In some instances the amount of depreciation was clearly excessive and had to be reduced. On the other hand, many companies failed to include any charge for depreciation in their costs of production and in their profit-and-loss statements. In such instances it was necessary for the Commission to add arbitrary depreciation charges.

"Factory swells" includes either loss due to the spoiling of the canned product in the packers' hands or refunds to buyers for goods which spoiled before the packers' guaranty had expired.

The items included in "Plant overhead" are the salary of factory superintendent, rent actually paid for buildings, machinery, or other equipment, fire insurance, and taxes on property. Income and excess profit taxes are not included in cost.

The items included in "General expense" are salaries of officers, general office expenses such as salaries, stationery, postage, and interest on short-term loans (under one year). Long-term loans are considered as a part of investment and interest on such loans is not included as a part of operating cost.

Income from by-products, such as pickled, smoked, or mild-cured salmon, oil, fertilizer, etc., is deducted.

Contingent charges to cost on account of commercial hazard are not included as a part of cost. No accurate basis for computing such hazard is available. Very few companies reported any charge for hazard, and those who did apparently guessed at the amount. Many canners have no clear idea as to just what risks it should cover. It seems that hazard refers to those unusual risks in an industry which can not be covered by insurance, such as a poor run of fish, and that it should be included in the profit-and-loss account and not included in cost. Whether prices are to be controlled by supply and demand or annually based upon cost of production, there would be no justification for the inclusion of hazard in cost in either case. If supply and demand operate freely, prices rise as a result of short packs and fall when the packs are large (assuming that demand remains fairly constant). The setting aside of a reserve to cover such fluctuations in earnings might facilitate the regular payment of dividends, but such a reserve should be built up out of the profits in good years and should not be included in cost, for this would increase the cost of production and in poor years would result in unjustifiably high prices or in large losses. If prices were fixed each year on the basis of the cost of production, these prices could be assumed to be high enough to cover the hazard by allowing all efficient producers to make a fair profit in every year for which prices were fixed.

Section 2. Cost of Production in 1916 and 1917.

Table 13 and table 14 give the most important items in the cost of production (exclusive of selling expense).

TABLE 13.—AVERAGE COST OF PRODUCING CANNED SALMON (PER FULL CASE): 1916 (19 COMPANIES) AND 1917 (20 COMPANIES).

	1916				1917					
	West Alaska.	Central Alaska.	Southeast Alaska.	Puget Sound.	Total.	West Alaska.	Central Alaska.	Southeast Alaska.	Puget Sound.	Total.
	Per full case.					Per full case.				
Number of plants.....	17	11	15	8	54	17	14	25	8	62
Raw fish.....	1,411,530	777,974	1,092,345	186,783	3,371,958	1,498,547	682,314	1,619,461	606,174	4,336,535
Other materials.....	\$1,110	\$0,736	\$0,945	\$2,763	\$1,666	\$1,452	\$1,128	\$1,431	\$2,565	\$1,431
Cans.....	584	557	607	608	2,356	1,312	1,065	1,286	1,003	4,946
Shooks, boxes, and labels.....	160	150	162	137	595	996	953	873	979	4,599
Labor.....	782	606	627	885	2,900	1,822	1,688	2,033	1,834	8,899
Other conversion costs.....	885	646	674	701	2,906	1,845	1,722	2,079	1,718	8,977
Transportation, men and supplies.....	132	122	144	102	500	339	339	467	472	1,655
Depreciation.....	132	122	144	222	620	157	142	339	467	1,655
Plant overhead.....	310	256	215	428	1,210	1,134	1,044	1,119	1,119	4,640
General expense.....	194	168	236	263	861	365	483	301	301	1,450
Deduct income from by-products.....	645	612	634	694	2,585	1,704	2,188	2,791	2,791	9,774
Cost of production, excluding raw fish.....	2,975	2,591	3,586	2,603	12,751	4,845	5,659	4,939	5,347	21,990
Cost of production.....	3,565	3,127	3,230	3,666	15,337	6,380	7,720	6,347	7,884	26,980
Per centage increase over 1916.....						14	14	14	8	62
Per full case.....										
Per centage increase over 1916.....						14	14	14	8	62

¹ Decrease.

TABLE 14.—RELATIVE IMPORTANCE OF VARIOUS COST ITEMS IN PRODUCTION OF CANNED SALMON: 1916 AND 1917.

District.	1916				
	West Alaska.	Central Alaska.	South Alaska.	Puget Sound.	Average U. S.
Cost of raw fish.....	Per cent. 28.6	Per cent. 23.5	Per cent. 29.3	Per cent. 48.8	Per cent. 29.5
Cost of other materials.....	.6	.1	.2	.1	.3
Cost of cans.....	15.3	18.8	18.5	11.1	16.5
Shooks, boxes, and labels.....	4.1	4.8	5.0	2.4	4.4
Labor.....	20.1	19.4	19.4	15.6	19.4
Other conversion costs.....	1.7	1.5	2.2	4.5	2.1
Transportation, men and supplies.....	13.8	14.2	7.1	1.9	11.1
Depreciation.....	3.4	3.9	4.5	3.9	3.8
Factory swells.....	.6	.6	.2	.1	.4
Plant overhead.....	8.0	8.2	6.7	7.6	7.6
General expense.....	5.0	5.4	7.3	4.6	5.6
Deduct income from by-products.....	1.2	.4	.4	.6	.7
Cost of production, excluding raw fish.....	71.4	76.5	70.7	51.2	70.5
Cost of production.....	100.0	100.0	100.0	100.0	100.0
Number of cases packed ¹	1,411,538	777,274	1,002,357	186,789	3,377,958

District.	1917				
	West Alaska.	Central Alaska.	South Alaska.	Puget Sound.	Average U. S.
Cost of raw fish.....	Per cent. 29.5	Per cent. 27.5	Per cent. 30.2	Per cent. 48.0	Per cent. 32.3
Cost of other materials.....	.3	.1	.1	.1	.3
Cost of cans.....	20.4	21.9	23.4	18.3	21.4
Shooks, boxes, and labels.....	3.7	3.9	5.5	3.5	4.2
Labor.....	17.4	16.6	15.5	13.4	15.9
Other conversion costs.....	2.4	1.7	2.1	1.8	2.1
Transportation, men and supplies.....	16.7	12.7	9.1	1.5	10.9
Depreciation.....	3.2	3.4	3.2	2.0	3.0
Factory swells.....	.4	.3	.1	.2	.2
Plant overhead.....	7.5	8.8	6.0	5.6	6.7
General expense.....	3.5	5.0	6.2	6.0	5.4
Deduct income from by-products.....	5.0	1.9	1.4	.4	2.4
Cost of production, excluding raw fish.....	70.5	72.5	69.8	52.0	67.7
Cost of production.....	100.0	100.0	100.0	100.0	100.0
Number of cases packed ¹	1,428,547	682,314	1,619,480	606,174	4,336,515

¹ By companies upon whose reports this table is based.

The largest items in the cost of production are raw fish, containers (including cans, boxes, and labels), labor, and transportation.

The cost of raw fish is the largest single item in cost. The average cost of raw fish for 54 plants, packing 3,377,958 cases, in 1916, was \$1.07 compared with \$1.43 for 62 plants with an output of 4,336,515 cases, in 1917, an increase of \$0.36, or 37 per cent. This item made up 29.5 per cent of the total cost of production in 1916, and 32.3 per cent in 1917. The cost of raw fish varied widely as between districts. The average cost was \$0.736 per case in the Central Alaska district in 1916, while in the Puget Sound district the cost was \$2.76 per case, or 275 per cent higher. In 1917, the average cost per case in Puget Sound was \$2.57,—7.17 per cent less than in the preceding year, but more than double the average cost of \$1.13 in the Central Alaska district in this year. The cost of raw fish varied even more widely as between individual cannery companies. When a cannery catches his own fish, the cost per case varies with the size of the catch. The amounts paid as wages to fishermen and for boat opera-

tions do not increase or decrease in proportion to the size of the catch. When the fish are purchased, the cost is determined by the market price of fish in that particular locality. In the Puget Sound district costs were reported as low as 39 cents and as high as \$6.23 per case in 1916, and as low as 25 cents and as high as \$8.03 in 1917.

There is considerable waste in the canning of salmon. Based on the number of fish canned (partly estimated) and the average weight of each species reported by the United States Bureau of Fisheries, the percentage of the weight of each species wasted in canning was as follows:

	1916	1917
King or chinook.....	Per cent. 41.5	Per cent. 44.9
Chum.....	34.1	34.4
Red or sockeye.....	37.5	32.1
Pink or humpback.....	25.9	26.2
Medium red.....	13.6	24.4
Steelhead.....	21.3	22.8

The average cost of cans did not vary greatly in the different districts. The average per case was \$0.595 in 1916 and \$0.946 in 1917. The average cost in none of the various districts varied more than 8 cents from the average for all districts. Cans represented 16.5 per cent of the total cost of production in 1916 and 21.4 per cent in 1917. They increased more than any other single item of cost,—the 1917 cost was 59 per cent more than the cost in the preceding year, while the total cost of production increased only 22.6 per cent. Can costs, however, varied widely as between different cannery companies. As both 1916 and 1917 were years of rising prices, companies carrying over large quantities of cans had a lower cost per case than those which bought their total requirements at current prices.

As the preceding section makes clear, companies manufacturing their own cans often kept very poor records of their can costs. This resulted in showing variations in can costs as between cannery companies. Prices of cans reported by the packers varied widely for the same size of can. Prices reported for half-pound cans varied from \$12.12 to \$15.12 per thousand in 1916, and from \$17.51 to \$24.14 in 1917. The price of 1-pound flat cans varied from \$16.30 to \$16.94 in 1916, and from \$17.74 to \$32.55 in 1917. The price of 1-pound tall cans varied from \$13.26 to \$20.70 in 1916, and from \$20.06 to \$43.14 in 1917. These differences are only partly explained by the fact that some cans are lacquered or that different cannery companies use different styles of cans.

The prices paid by different cannery companies to a can company for the same size can also often varied considerably during the same season. The contracts for the sale of these cans did not show the reason for this price discrimination. Cannery companies who were forced to buy cans in the open market were often forced to pay prices much in excess of those paid by cannery companies who had long term contracts with one of the large can companies.

Labor made up 19.4 per cent of the average total cost of production in 1916, and 16.1 per cent in 1917. The average cost of cannery labor was \$0.701 per case in 1916, and \$0.705 per case in

1917, or an increase of 0.6 per cent. The actual increase in wages was about 15 to 20 per cent, but as the 1917 pack was much larger than that of 1916, the cost per case did not show a similar increase. The number of laborers employed at a cannery does not vary in proportion to the size of the pack. If the pack is small, the labor cost per case is high, while if the pack is large, the number of cannery hands is not increased proportionately. This results in a low unit cost for labor. This fact causes wide variations in labor costs per case between different plants. In 1917, costs per case as low as 27 cents and as high as \$5.94 were reported.

The item "Transportation of men and supplies" in 1916 makes up over 11 per cent of the average total cost of production. The average cost amounted to \$0.40 per case in 1916, and \$0.48 in 1917, an increase of 20 per cent. It varied widely between the different districts; it was highest in the West Alaska district and ordinarily amounted to very little for the plants located outside of Alaska. Some companies reported nothing under this heading; apparently all freight was included under the cost of raw materials. Transportation costs varied widely among different plants. Those plants which were located in out-of-the-way sections naturally had higher costs than those located at ports where vessels called regularly. In some cases goods had to be transhipped in smaller boats or contracts had to be made with a steamship company to have its boats call at the cannery docks. Steamship companies generally required that the canner agree to ship all of his goods by their vessels before they would make such contracts. The rates specified in the different contracts varied greatly. This was especially true of the rates on gasoline and coal. The rates on the different commodities were, however, generally somewhere near the published tariff rates.

The average cost of shooks, boxes, and labels was \$0.157, or 4.4 per cent of the total cost of production in 1916, and \$0.187, or 4.2 per cent of the cost of production in 1917.

Plant overhead averaged \$0.276 per case in 1916, and \$0.295 in 1917 or an increase of 6.9 per cent. General expense averaged \$0.204 in 1916, and \$0.241 in 1917 or an increase of 13.2 per cent. The expenses under these two headings made up 13.2 per cent of the average total cost of production in 1916 and 12.1 per cent in 1917.

The item "Depreciation" averaged \$0.138 per case in 1916, and \$0.134 per case in 1917. In the Puget Sound district, the depreciation charge averaged \$0.222 per case in 1916, while in 1917 it averaged only \$0.119. This decrease per case was caused by the greatly increased number of cases packed.

The other items included in cost were small and of little importance, making up less than 3 per cent of the average total cost of production.

Section 3. The range in the cost of production.

The total number of cases of all grades of salmon packed below different costs in 1916 and 1917 are shown in Table 15.

TABLE 15.—NUMBER OF FULL CASES OF SALMON PACKED BELOW DIFFERENT COSTS: 1916 AND 1917.

Cost per full case.	1916		1917	
	Number of full cases.	Percent of total.	Number of full cases.	Percent of total.
Under \$1.50.....			53,965	
2.00.....	64,387		53,965	
2.50.....	467,282		53,965	
3.00.....	1,844,885		537,431	
3.50.....	2,659,164	49.6	1,841,846	
4.00.....	3,652,447	68.1	2,975,739	
4.50.....	4,440,761	82.8	4,071,554	52.8
5.00.....	4,818,081	88.9	4,865,712	63.1
5.50.....	4,943,604	92.2	5,407,123	70.1
6.00.....	5,044,374	94.1	6,032,996	78.2
6.50.....	5,071,384		6,339,611	82.2
7.00.....	5,093,675		6,637,984	86.1
7.50.....	5,259,979	98.1	7,021,586	91.1
8.00.....	5,308,469		7,180,273	93.1
8.50.....	5,309,687		7,344,948	95.3
9.00.....	5,314,019		7,359,049	
9.50.....	5,314,019		7,471,172	96.9
10.00.....	5,314,019		7,491,639	
10.50.....	5,314,019		7,624,797	98.9
11.00.....	5,338,643		7,640,155	
11.50.....	5,347,138		7,640,155	
12.50.....	5,352,980		7,667,325	
13.00.....	5,360,840	100.0	7,671,813	
13.50.....			7,678,522	
14.00.....			7,680,157	
14.50.....			7,680,157	
15.00.....			7,680,157	
15.50.....			7,680,157	
16.00.....			7,680,157	
16.50.....			7,702,010	
17.00.....			7,702,010	
17.50.....			7,702,031	
18.00.....			7,702,031	
18.50.....			7,704,520	
19.00.....			7,705,913	
26.50.....			7,708,487	100.0

In 1916 the lowest cost reported was \$1.85 per full case and the highest was \$12.27. The great bulk of the pack was produced at the lower costs. The greater part of the salmon produced at costs between \$2.00 and \$3.50 per full case was packed in Southeast and Central Alaska. The bulk of the salmon produced at costs between \$3.50 and \$4.50 was canned in West Alaska; while smaller quantities at this cost were packed in the Central and Southeast Alaska and Puget Sound sections. The West and Southeast Alaska packers were the largest producers at costs between \$4.50 and \$5.00. The Puget Sound and Central Alaska districts packed smaller amounts at these costs, which were the maximum costs for any of the Central Alaska plants. The salmon produced at costs between \$5.00 and \$6.00 was packed principally by the Puget Sound plants. The Columbia River packers were the largest producers at costs between \$6.00 and \$8.00. All the salmon packed at costs above \$8.50 was packed in the Puget Sound plants.

In 1917 there was a wider range in the cost of production, the lowest cost reported was \$1.33 per full case and the highest cost was \$26.21. The great bulk of the production was at costs between \$2.50 and \$7.50. That part of the pack which was produced at costs above \$8.50 was packed principally by Puget Sound and Columbia River canneries, although that part produced at the very highest costs was packed in the West Alaska district. The bulk of the

salmon canned at costs between \$2.50 and \$3.50 was packed by the Southeast and Central Alaska packers. Most of the production at costs between \$3.50 and \$4.00 was produced in Southeast Alaska, although large amounts were packed at these costs in West and Central Alaska. The West Alaska packers were the most important producers of the salmon packed at costs between \$4.00 and \$5.50. Smaller quantities were packed at these costs by canners in Central and Southeast Alaska and Puget Sound. The Puget Sound packers produced the largest quantities at costs between \$5.50 and \$8.00, although the quantities produced at these prices by the Southeast Alaska packers were also considerable.

Although costs vary considerably between the plants in any one section, if the plants having exceptionally high or low costs are omitted, it is clear that the bulk of the pack in each district is produced at fairly uniform costs. The different sections show marked differences in costs. The costs at which the bulk of the pack was produced in each of the sections were as follows:

	1916	1917
West Alaska.....	Between \$3.50 and \$5.00.....	Between \$3.50 and \$5.50.....
Central Alaska.....	Between \$2.50 and \$4.50.....	Between \$2.50 and \$5.00.....
Southeast Alaska.....	Between \$2.00 and \$5.00.....	Between \$2.50 and \$6.00.....
Outside Rivers.....	Between \$3.00 and \$5.00.....	Between \$7.00 and \$9.50.....
Columbia River.....	Between \$1.50 and \$2.50.....	Between \$3.00 and \$4.00.....
Puget Sound.....	Between \$5.00 and \$8.00.....	Between \$7.00 and \$10.00.....
	Between \$2.00 and \$8.00.....	Between \$2.50 and \$8.00.....

These figures show that Central Alaska had the lowest costs and that Southeast Alaska had the next lowest costs. West Alaska had higher costs, but the cost was more uniform between the various plants. Puget Sound and Columbia River costs varied widely between different canners. Southeast Alaska costs were more uniform, but showed a wider range than those of the other two Alaska districts.

Comparing 1917 with 1916 costs of the Outside River¹ canners increased most, while the costs of the Alaska canners increased the least.

Section 4. The cost of canning salmon by grades.

The only item of cost that varies appreciably in the canning of the different kinds of salmon is the cost of raw fish. The costs of containers, other materials, labor, and overhead are practically the same regardless of the species canned.

When fish are purchased different prices are paid for the different grades. The cost of canning each grade could, therefore, be obtained from companies which purchased their fish, unless the canners failed to keep records of the amount of money paid for the different grades. Many canners, however, claim that it is impossible to ascertain the cost of the different grades when the fish are caught by the canning companies. This is due to the fact that the various species are caught together in the same nets or traps and are transported to the cannery by the same crews and boats. It was thus impossible to get costs for the different grades from many of the companies.

¹ Coastal streams in Washington, Oregon, and California.

Many canneries, however, are located in sections where practically all of the fish caught are of one species. When 90 per cent or more of the output of a plant consisted of one kind of salmon, the cost at this plant was considered as representing the cost of canning this grade. The cost of canning any particular grade, as shown in this report, therefore, depends in part upon the costs prevailing in the section in which the most of this grade is packed. For this reason it may happen that a grade bringing a low price in the market has a higher cost of production than a grade which commands a much higher price. The commercial prices of the different grades are based largely on the demand, or on the supposed quality, and not upon any cost determination. Thus, of the salmon for which costs by grades could be obtained in 1917, 87.8 per cent of the "Red" was packed at costs below \$6.50 per full case, while only 53.2 per cent of the "Medium Red" and 79.8 per cent of the "Chum" was packed below this cost.

Tables 16 and 17 show the number of cases of each grade of salmon packed at the various costs in 1916 and 1917, to the extent to which these costs could be ascertained.

TABLE 16.—COST OF CANNING DIFFERENT GRADES OF SALMON—NUMBER OF FULL CASES. PACKED AT VARIOUS COSTS IN 1916.

Range in cost.	Red.	Medium red.	King or chinook.	Pink.	Chum.	Not classified.	Total.
\$1.50-\$1.99.....			64,387				64,387
\$2.00-\$2.49.....	6,591	9,998		124,248	33,690	228,368½	402,895½
\$2.50-\$2.99.....	95,171	19,780	2,932	332,941	109,722	817,057½	1,377,603
\$3.00-\$3.49.....	158,392	17,343	874	61,811	152,124	423,734½	814,278½
\$3.50-\$3.99.....	767,887	22,672	1,146	65,117	65,141	71,320	983,283½
\$4.00-\$4.49.....	258,382	2,268		6,418	48,644	472,601	788,313½
\$4.50-\$4.99.....	91,567	1,215	5,956		10,113	268,419½	377,270
\$5.00-\$5.49.....	33,953	3,164	18			88,458	125,573
\$5.50-\$5.99.....		25,047				75,723	100,770
\$6.00-\$6.49.....			512			26,498	27,010
\$6.50-\$6.99.....	2,347		4		13	19,927	22,291
\$7.00-\$7.49.....	5,032	1,726	21,615	7,307		130,624	166,304
\$7.50-\$7.99.....	11,816	10,983	6,224		7,559	11,848	48,430
\$8.00-\$8.49.....		1,279½	9				1,288½
\$8.50-\$8.99.....	4,322						4,322
Over \$9.....			3,925			42,895½	46,820½

TABLE 17.—COST OF CANNING DIFFERENT GRADES OF SALMON—NUMBER OF FULL CASES PACKED AT VARIOUS COSTS IN 1917.

Range in cost.	Red.	Medium red.	King or chinook.	Pink.	Chum.	Not classified.	Total.
\$2.00-\$2.49.....						53,965	53,965
\$2.50-\$2.99.....	10,972	7,864	202	202,138	58,379	203,913	483,466
\$3.00-\$3.49.....	208,265	15,205	78,893	471,068	110,134	360,852	1,304,415
\$3.50-\$3.99.....	367,364	4,138	1,197	276,507	76,815	407,872	1,133,893
\$4.00-\$4.49.....	486,634	19,398	61	54,489	17,637	517,596	1,095,815
\$4.50-\$4.99.....	422,943	1,640	8,827	104,640	34,099	222,009	794,158
\$5.00-\$5.49.....	202,688	2,819	58	164,127	25,588	146,131	541,411
\$5.50-\$5.99.....	85,717	11,005	715	204,712	1,418	322,306	625,873
\$6.00-\$6.49.....	120,802	1,932	1,923	81,542	22,613	77,803	306,615
\$6.50-\$6.99.....	20,502	17,589	395		18,680	241,207	298,373
\$7.00-\$7.49.....	114,082	10,731	21,836	8,880	23,930	204,143	383,602
\$7.50-\$7.99.....	32,104		2,796		35,809	88,028	158,687
\$8.00-\$8.49.....	27,725	14,711	2,485	39,200	4,838	75,716	164,675
\$8.50-\$8.99.....			11,166			2,935	14,101
\$9.00-\$9.49.....	35,666					76,457	112,123
\$9.50-\$9.99.....		2,655	96			17,716	20,467
\$10.00-\$10.49.....	8,445	7,695				115,018	133,158
Over \$10.50.....	33,834	2,724	24,108	60	4,507	19,457	84,690

The preceding tables show that in 1917 the bulk of the red salmon was produced at costs of between \$3.00 and \$5.50 and the pink at costs from \$2.50 to \$4.00. The costs of chinook salmon fell chiefly in the two groups, \$3.00-\$3.50 and \$7.00-9.00. The largest quantity of chums in any one price group was between \$3.00 and \$3.50.

The average costs of packing the various grades in 1916 and 1917 are shown in the following table (Table 18). This table is based upon the same material as was used in compiling Tables 16 and 17, but the costs for king, medium red, and chum are based upon too small a percentage of the pack to be taken as typical average costs for the entire pack of these grades.

TABLE 18.—AVERAGE COST OF CANNING DIFFERENT GRADES OF SALMON.

Grade.	1916, per full case.	1917, per full case.
Red or sockeye.....	\$3.865	\$4.871
King or chinook.....	3.862	5.829
Medium red.....	4.323	6.014
Pink.....	2.923	4.228
Chum.....	3.377	4.701

Section 5. The Cost of Canning in the Different Sized Cans.

The cost of canning a $\frac{1}{2}$ -pound can of salmon is much more than half as large as that of canning a 1-pound can; while the costs of raw fish and of the other materials are just one-half as much for a $\frac{1}{2}$ -pound can as for a pound can, the cost of the cans, labels, boxes, and labor for a $\frac{1}{2}$ -pound can are nearly as great as for the 1-pound can. The prices of the American Can Co. show that a $\frac{1}{2}$ -pound can costs the packer over 80 per cent as much as a 1-pound can. Labels and boxes (when "halves" are shipped four dozen to the case), cost approximately as much for a dozen $\frac{1}{2}$ -pound cans as for a dozen pound cans. The work of preparing the fish for the can varies with the quantity of fish handled. The work of filling, closing, and handling the cans varies with the number of cans packed. From these facts it would appear that a $\frac{1}{2}$ -pound can requires two-thirds or three-fourths as much labor as a 1-pound can. However, when cannery hands are paid a piece rate, this rate is the same regardless of size of can used. Most of the packers, who submitted costs for the different sized cans, reported the same labor cost per dozen regardless of the size of the can. For these reasons, in compiling the costs shown in Table 19, the labor cost was distributed among the different sizes on the basis of the number of cans packed.

Some of the other expenses must be distributed over the number of cans irrespective of their size, while others must be distributed according to the net weight of the contents.

Table 19 shows the cost of packing the different grades of salmon in 1-pound tall and $\frac{1}{2}$ -pound flat cans in 1917 and the difference between these costs.

TABLE 19.—THE COST OF CANNING SALMON IN THE DIFFERENT SIZED CANS, 1917.

Number of company.	Location.	Cost per case No. 1 tall, 48 cans.	Cost per case No. $\frac{1}{2}$ flats, 96 cans.	Differential.	
				Per case.	Per cent.
RED OR SOCKEYE.					
1	Southeast Alaska.....	\$3.152	\$4.440	\$1.288	40.86
2	Western Alaska.....	4.572	6.528	1.956	42.78
3	Southeast Alaska.....	3.564	4.968	1.404	39.39
KING OR CHINOOK.					
1	Western Alaska.....	4.884	6.592	1.708	34.97
2	Central Alaska.....	6.460	8.304	1.844	28.84
3	Southeast Alaska.....	8.164	9.872	1.708	20.92
MEDIUM RED.					
1	Southeast Alaska.....	3.160	4.440	1.280	40.51
2	Central Alaska.....	8.868	8.554	1.716	24.99
3	Southeast Alaska.....	7.516	9.024	1.708	23.50
4	.....do.....	3.528	4.952	1.424	40.36
PINK.					
1	Puget Sound.....	6.232	7.736	1.504	20.39
2	Southeast Alaska.....	3.160	4.440	1.280	40.51
3	.....do.....	4.416	5.808	1.392	31.52
4	.....do.....	3.548	4.960	1.412	39.80
CHUM.					
1	Southeast Alaska.....	3.160	4.424	1.264	40.00
2	.....do.....	4.412	5.544	1.132	25.66
3	.....do.....	4.040	5.544	1.504	37.23

This table shows that there is no absolutely fixed difference between the cost of packing a case of salmon in 1-pound tall cans and in $\frac{1}{2}$ -pound flat cans, but that the cost of "halves" per case is from 20 to 40 per cent more than the cost of the 1-pound "talls," and that this difference in cost is usually nearer the higher per cent. If the cost of a 1-pound tall can of a particular grade of salmon were \$0.10, the cost of a half-pound can would be about \$0.07.

As the small can holds just one-half as much meat as the larger can, this shows a marked economy in the use of the larger cans.

In recent years the opening prices per dozen of half-pound cans of salmon have generally been 30 to 35 per cent less than the prices of tall cans on the higher-priced grades and from 20 to 25 per cent less on the cheaper grades. This indicates that the prices of the poorer grades of salmon (pink and chum) in half-pound cans have been relatively too high, a condition which may be partly explained by the small quantity of these grades packed in the small cans.

One-pound flat cans of salmon bring higher prices in the market than 1-pound tall cans. During the last few years this difference in price has been from 10 to 35 cents per dozen; 10 and 15 cents were the most common differentials. The only difference in the cost of packing salmon in 1-pound tall and 1-pound flat cans, so far as the information gathered in this investigation shows, is in the difference in the cost of cans. The 1917 prices of the American Can Co. show that the 1-pound flat cans cost from \$0.021 to \$0.027 more per dozen than the 1-pound tall cans. It seems reasonably clear that the higher prices are not determined by a higher cost of production, but are explained for the most part by the different quality of meat packed in the two styles of cans. It is stated that the best part of the fish is packed in the flat cans, leaving the poorer parts for the tall cans.

Section 6. The costs of large and small companies and large and small plants.

Table 20 gives the costs of the large and small plants.

TABLE 20.—COMPARISON OF UNIT COSTS OF PRODUCTION OF TYPICAL PLANTS HAVING LARGE AND SMALL OUTPUTS: 1916 AND 1917.

Items.	1916		1917	
	Large plants. ¹	Small plants. ¹	Large plants. ¹	Small plants. ¹
Number of plants.....	17	52	40	41
Number of cases packed.....	1,818,387	1,364,303	4,046,639	1,175,874
Cost of raw fish.....	\$1.077	\$1.456	\$1.494	\$2.024
Cost of containers.....	.803	.865	1.153	1.345
Labor costs.....	.618	.750	.648	.996
Other expenses.....	.993	1.040	1.007	1.316
Cost of production, excluding raw fish.....	2.414	2.655	2.808	3.657
Total cost of production, excluding selling expense.....	3.491	4.111	4.302	5.681

¹ Large plants were those packing over 50,000 cases and small plants those packing under 50,000 cases.

From this table it is seen that the plants with large outputs in 1916 packed salmon at an average of \$0.62 per case less than the plants with small outputs, and in 1917 at an average of \$1.38 per case less than the small output plants. The larger plants packed their goods 15 per cent cheaper than the smaller plants in 1916, and 24 per cent cheaper in 1917. The larger plants had a lower average cost for all important items entering into the cost of production, but the relatively lower labor cost is especially noteworthy.

A comparison of the costs of production of the companies which had large and small outputs, regardless of the size of the separate plants, is presented in Table 21.

TABLE 21.—COMPARISON OF UNIT COSTS OF PRODUCTION BY TYPICAL COMPANIES HAVING LARGE AND SMALL OUTPUTS: 1916 AND 1917.

Items.	1916		1917	
	Large companies.	Small companies.	Large companies.	Small companies.
Number of companies.....	8	21	7	30
Number of plants.....	41	21	40	31
Number of cases packed.....	2,691,066	719,274	3,291,118	1,288,512
Cost of raw fish.....	\$1.087	\$1.140	\$1.312	\$2.064
Cost of containers.....	.745	.833	1.107	1.314
Labor cost.....	.703	.583	.729	.707
Other expenses.....	1.154	.834	1.366	.958
Cost of production excluding raw fish.....	2.602	2.370	3.202	2.979
Total cost of production.....	3.689	3.510	4.514	5.043

This table shows the average costs for 7 of the companies having the largest outputs and 30 of the companies having the smallest outputs in 1917, and for as many of the same companies as operated in 1916. These companies had plants located in all parts of Alaska and on Puget Sound.

The average cost of production (exclusive of selling expense) by the large companies in 1916 was \$3.69 per case, compared with an average cost of \$3.51 for the small companies. The average cost of

the smaller companies was \$0.18 under the average cost of the large companies. In 1917, however, the large companies had an average cost of \$4.51, compared with an average cost of \$5.04 by the smaller companies. That is, the average cost of the smaller companies was \$0.53 above the average cost of the larger companies.

The large-output companies had in both years lower container costs, probably due in part to the fact that they manufactured most of their cans. (See sec. 1 of Chap. III.) On the other hand, the large companies showed a higher cost of labor and other manufacturing expenses than the small companies. This shows clearly that the raw fish cost was the determining factor. In 1916 the small-output companies had a cost of \$1.14 for raw fish, which was \$0.05 above the cost of this item for the large companies. In 1917 the cost of raw fish to the smaller companies (\$2.06) was \$0.75 above the cost of this item for the large companies. The greater increase in the cost of raw fish to the smaller canners was due to the fact that most of them purchased their fish, whereas most of the large companies caught their own fish. The market price of fish increased between 1916 and 1917 much more than the wages of the fishermen. This increase in the cost of raw material placed the small-output companies at a serious disadvantage in comparison with their large competitors in 1917.

In both years the small-output companies had a lower cost of production, excluding raw fish and containers than did the large-output companies. It will be interesting, therefore, to observe how the local fixing of the prices of certain grades of fish in 1918 will affect the cost of production of the smaller companies, which purchase their fish, as compared to the cost of production of the large companies, which catch their fish, and which had to give substantial wage increases to their fishing crews.

Section 7. The expense of marketing canned salmon.

The canners' methods of marketing canned salmon have been explained fully in Chapter I. Most salmon canners maintain no sales departments, do little or no advertising, and have few marketing expenses except brokerage or commission. (Salmon is sold f. o. b. Pacific coast, and as freight south from Alaska was included in cost of production no allowance for freight is required in expense of marketing.) The ordinary brokerage is 5 per cent. If to this amount an allowance of 1.5 per cent is made to cover cash discount, a result is obtained which is equivalent to a deduction of 6.475 per cent from the selling price. Many canners have no other items which might be considered as marketing expenses. A great many companies considered brokerage, cash discount, and prepaid freight as deductions from sales, and reported no selling expenses whatever.

The average selling expenses reported by 20 companies, packing 50 per cent of the production in 1917, was \$0.272 per case, or 3.59 per cent of the average net selling price. Some of these companies, however, did not analyze selling expense satisfactorily. For this reason the selling expenses of 8 large companies, all of which reported the amount of brokerage paid, were analyzed. The average amount of brokerage paid by these companies was 4.36 per cent of the average net selling price. The average of the other selling expenses, such as

the cost of advertising, the expense of maintaining sales departments, etc., was 1.029 per cent of this figure. This made a total selling expense of \$0.382 per case, or 5.389 per cent. With the addition of 1.5 per cent cash discount, not included in selling expense, the total difference, exclusive of profit, between cost of production and the quoted price is 6.8 per cent. As many canners have no expenses for selling departments or advertising, this difference is slightly too great for the trade as a whole.

CHAPTER IV.

THE PRICE OF CANNED SALMON.

Section 1. The meaning and importance of "opening prices."

The custom has grown up among the salmon canners of naming, in the late summer "opening prices," at which they have decided to sell their newly packed goods. These prices are generally named late in August, when the canning season is well advanced, and when the size of the pack is known approximately. The stocks carried over from the previous year (in Seattle, New York, Liverpool, and in the hands of canners) and the estimated demand are also taken into consideration. Of recent years (since 1905) there has been great uniformity in the opening prices, and nearly all canners in quoting opening prices have followed the prices of one or two of the larger companies.

The Alaska Packers' Association has for several years taken the lead in making the opening prices on all grades, except sockeye, and its prices have been followed by nearly all other canners in quoting opening prices. The opening price on Puget Sound sockeye salmon has been made, during the past few years, by Deming & Gould, who are especially interested in the Puget Sound product, and who are regarded as best representing the interests of the Puget Sound packers. The Alaska Packers Association is primarily interested in the Alsaka product; and as the cost of production is higher in the Puget Sound district, it is said that the packers there would often like to see higher opening prices than those made by the Alaska Packers Association. For this reason Deming & Gould opened prices on all grades in 1917. The President of the Alaska Packers Association was in favor of somewhat lower prices (e. g. \$2.25, instead of \$2.35 on Alaska reds) but accepted those named by the Puget Sound firm in order not to demoralize the market.

All canners do not follow these opening prices. Prices made by the Puget Sound brokers are sometimes slightly higher than those named in San Francisco (for Alaska canners). The trade estimates that about 90 per cent of the total pack is sold at the opening prices.

Whether cooperation or agreement exists among leading packers and brokers in fixing these opening prices has not been determined. It seems that the leading men in the trade discuss market conditions with each other from time to time, but it does not appear that pre-arranged meetings are held for this purpose. It was stated by the president of one of the leading brokerage firms that many packers write letters, inquiring when the opening price will be made, and sometimes ask if an approximation of such prices could be given in advance. This suggests an implied agreement to fix or maintain prices.

The following table, taken from the Pacific Fisherman for January, 1917, gives the opening prices of canned salmon during past 21 years:

TABLE 22.—OPENING PRICES ON CANNED SALMON SINCE 1897.

	Tails (per doz.)	Flats (per doz.)	Halves (per doz.)
1897.			
Columbia River chinook.....	\$1.05		
Puget Sound sockeye.....	.80		
Alaska red.....	.90		
Alaska pink.....	.65		
1898.			
Columbia River chinook.....	1.05		
Puget Sound sockeye.....	.80		
Alaska red.....	1.00		
Alaska pink.....	.65		
1899.			
Columbia River chinook.....	1.25		
Puget Sound sockeye.....	1.10		
Alaska red.....	1.00		
Alaska pink.....	.67½		
1900.			
Columbia River chinook.....	1.60		
Puget Sound sockeye.....	1.10		
Alaska red.....	1.10		
Alaska pink.....	.75		
1901.			
Columbia River chinook.....	1.50		
Puget Sound sockeye.....	.95		
Alaska red.....	1.25		
Alaska pink.....	.75		
1902.			
Columbia River chinook.....	1.35		
Puget Sound sockeye.....	1.00		
Alaska red.....	.95		
Alaska pink.....	.65		
1903.			
Columbia River chinook.....	1.35	\$1.45	\$0.85
Puget Sound sockeye.....	1.50	1.60	.90
Alaska red.....	1.30		
Alaska pink.....	.50		
1904.			
Columbia River chinook.....	1.45	1.15	.90
Puget Sound sockeye.....	1.55	1.65	.95
Alaska red.....	1.30		
Alaska pink.....	.70		
1905.			
Columbia River chinook.....	1.45	1.55	.90
Puget Sound sockeye.....	1.35	1.50	4.00
Alaska red.....	1.00		
Alaska pink.....	.70		
1906.			
Columbia River chinook.....	1.50	1.60	1.00
Puget Sound sockeye.....	1.45	1.60	1.00
Alaska red.....	.95		
Alaska pink.....	.75		
1907.			
Columbia River chinook.....	1.65	1.75	1.05
Puget Sound sockeye.....	1.65	1.75	1.10
Alaska red.....	1.15		
Alaska pink.....	.80		

TABLE 22.—OPENING PRICES ON CANNED SALMON SINCE 1897—Continued.

	Tails (per doz.)	Flats (per doz.)	Halves (per doz.)
1908.			
Columbia River chinook.....	\$1.65	\$1.75	\$1.05
Puget Sound sockeye.....	1.60	1.75	1.05
Puget Sound pink.....	.75	.80	
Alaska coho.....	1.05	1.15	.75
Alaska red.....	1.15		
Alaska king.....	1.05		
Alaska coho.....	1.00		
Alaska pink.....	.70		
Alaska chum.....	.70		
1909.			
Columbia River chinook, fancy.....	1.65	1.75	1.05
Puget Sound sockeye.....	1.35	1.50	1.00
Alaska red.....	1.15	1.35	.85
Alaska king.....	1.10		
Alaska coho.....	1.05	1.20	.70
Alaska pink.....	.60		
Alaska chum.....	.57½		
1910.			
Columbia River chinook, fancy.....	1.75	1.90	1.10
Puget Sound sockeye.....	1.65	1.80	1.10
Alaska red.....	1.35	1.50	1.00
Alaska king.....	1.35		
Alaska pink.....	.80		
Alaska chum.....	.77½		
Medium red and coho.....	1.25	1.40	.80
1911.			
Columbia River chinook, fancy.....	1.95	2.00	1.30
Puget Sound sockeye.....	1.95	2.00	1.30
Alaska red.....	1.60	1.75	1.12½
Alaska medium red.....	1.45	1.65	1.00
Alaska king.....	1.80	2.00	1.12½
Pink.....	1.00	1.15	.80
Chum.....	.95	1.05	.75
1912.			
Chinook.....	1.95	2.00	1.25
Sockeye.....	1.95	2.00	1.30
Alaska red.....	1.40	1.40	1.15
Alaska medium red.....	1.15	1.25	.80
Alaska king.....	1.40	1.60	1.15
Pink.....	.65	.65	.55
Chum.....	.62½		.50
1913.			
Chinook.....	1.95	2.00	1.25
Sockeye.....	1.50	1.65	1.05
Alaska red.....	1.15	1.35	.95
Alaska medium red.....	.85	1.00	.70
Alaska king.....	1.00	1.15	.90
Pink.....	.65	.80	.55
Chum.....	.55	.70	.50
1914.			
Chinook.....	1.95	2.10	1.25
Sockeye.....	1.95	2.15	1.35
Alaska red.....	1.45	1.80	1.10
Medium red.....	1.15	1.35	.82½
Alaska king.....	1.40		1.10
Pink.....	.90	1.00	.70
Keta, or chum.....	.85	.95	.65
1915.			
Chinook.....	1.90	2.00	1.25
Sockeye.....	1.95	2.15	1.35
Alaska red.....	1.50	1.85	1.15
Medium red.....	1.15	1.30	.75
Alaska king.....	1.25		
Pink.....	.75	.85	.57½
Keta, or chum.....	.70	.80	.52½

1 The San Francisco opening price was \$0.65.

TABLE 22.—OPENING PRICES ON CANNED SALMON SINCE 1897—Continued.

	Talls (per doz.)	Flats (per doz.)	Halves (per doz.)
1916. ¹			
Chinook.....	\$1.90	\$2.00	\$1.25
Sockeye.....	2.05	2.25	1.40
Alaska red.....	1.50	1.75	1.20
Medium red.....	1.30	1.45	1.00
Alaska king.....	1.35		
Pink.....	.90	1.10	.75
Chum.....	.85		.67 $\frac{1}{2}$
1917.			
Chinook.....	2.90	3.00	1.75
Sockeye.....	2.90	3.00	1.75
Alaska red.....	2.35	2.60	1.65
Medium red.....	2.00	2.15	1.35
Alaska king.....	2.25		
Pink.....	1.65	1.80	1.15
Chum.....	1.60	1.75	

¹ The Kelley-Clarke prices differed from these in the following particulars: red talls, \$1.60; red halves, \$1.25; medium red talls, \$1.35; medium red flats, \$1.50; medium red halves, \$1; pink talls, \$1; chum talls, \$0.95, and king talls, \$1.40.

NOTE.—All quotations are on the basis of one dozen cans.

Section 2. The opening prices of 1916 and 1917.

The number of companies making opening prices, the opening prices named, and the time when these prices were announced are shown in Table 23.

TABLE 23.—OPENING PRICES IN 1916 AND 1917, WITH PERCENTAGE OF COMPANIES MAKING THESE PRICES.

Grade.	1916.					
	Number of companies making opening price.	Most frequent price.	Per cent of companies making this price.	Second most frequent price.	Per cent of companies making this price.	Per cent of companies naming other prices.
Red.....	33	\$1.50	75.8	\$1.60	18.2	6.0
Medium red.....	37	1.30	73.0	1.35	16.2	10.8
Pink.....	33	.90	97.0	.95	3.0	
Chum.....	42	.85	81.0	.90	14.3	4.7
1917.						
Red.....	39	\$2.35	69.2	\$2.50	20.5	10.3
Medium red.....	37	2.00	54.1	2.25	29.7	16.2
Pink.....	42	1.65	90.5	1.90	2.4	7.1
Chum.....	47	1.60	87.2	1.65	8.5	4.3

Of the 93 companies reporting, 33, or 36.6 per cent, named opening prices on reds in 1916, while 39, or 39 per cent of the 100 companies reporting, named opening prices on reds in 1917. On the other grades or kinds of salmon, the number of companies quoting opening prices varied slightly. These facts show that most of the companies did not announce opening prices. This is especially true of the canners on Puget Sound and the Outside Rivers. About two-thirds of all the Alaska canners announced opening prices. The canners, who do not announce opening prices, often have contracts

with certain brokers, who act as their sales agents, and who dispose of their entire product. In such a case the canner need not go through the formality of announcing a set of prices, and is generally satisfied if his agent does not sell below the opening prices fixed by well-known brokers or packers. Several companies reported that they received no record from their agents as to what the opening prices were.

An examination of this table (Table 23) shows a very great uniformity in the prices announced by the different companies, a uniformity that has greater significance than the number of companies indicates, as the companies included contain the largest producers. Of the companies making opening prices on reds in 1916, 75.8 per cent named the same price (\$1.50), while 18.2 per cent named a higher price (\$1.60), and 6 per cent named lower prices. In 1917, 69.2 per cent named a uniform price on red salmon (\$2.35), while 20.5 per cent named a higher price (\$2.50). The other quotations showed no uniformity. The majority of canners who made opening prices in 1916 and 1917, and who did not announce the common price, named higher prices. The same was true of the prices on other grades.

Of the companies who announced opening prices for medium reds in 1916, 73 per cent made the same price (\$1.30). In 1917, 54.1 per cent named a uniform price for this grade (\$2). In 1916, 16.2 per cent named a price (\$1.35)—just 5 cents above the most common price; in 1917, 29.7 per cent named a price (\$2.25)—25 cents above the most common price.

In 1916, 97 per cent of canners, who announced opening prices on pinks, named a uniform price (\$0.90), and in 1917, 90.5 per cent named the same price (\$1.65). In 1916, 81 per cent made a price of \$0.85 for chums, and in 1917, 87.2 per cent made a price of \$1.60. Thus the practice of following a uniform opening price is much more pronounced in the case of pinks and chums than in case of reds and medium reds.

There was a greater uniformity in opening prices in 1916 than in 1917. This is probably explained by the great difference in the cost of production in 1917, and by the large demand, which enabled canners to obtain almost any price they asked.

The foregoing percentages do not prove that 90 per cent of all the salmon canning companies announced uniform prices, as the figures do not cover companies which announced no opening price. However, the larger companies named the same prices, and many of the smaller companies who did not announce opening prices sold at these prices.

TABLE 24.—DATES WHEN OPENING PRICES WERE ANNOUNCED.

Grade.	1916			1917		
	Week of opening price.	Per cent of companies which named price in this week.	Per cent of companies which named opening prices between Aug. 15 and Sept. 15.	Week of opening price.	Per cent of companies which named price in this week.	Per cent of companies which named opening prices between Aug. 15 and Sept. 15.
Red.....	Aug. 19-26	69.7	87.9	Aug. 24-31	73.2	95.1
Medium red.....	do	70.6	91.2	do	69.4	94.4
Pink.....	Aug. 16-24	80.7	93.5	do	71.4	95.2
Chum.....	do	73.0	94.6	do	68.8	95.6

The accompanying table (Table 24) shows that in 1916 from 69 per cent to 80 per cent of the companies reporting announced their opening prices for reds and medium reds during the same week, August 19-26, and for pinks and chums during the week August 16-24. From 87 to 95 per cent of the companies named their prices between August 15 and September 15, in 1916. In 1917 from 66 to 73 per cent of canners announced their opening prices in the week between August 24-31, while 95 per cent of the opening prices were announced between August 15 and September 15. The few prices reported as being made earlier or later may not have been true opening prices. It is noteworthy that the percentage of companies announcing opening prices between August 15 and September 15 was greater in 1917 than in 1916.

It appears that the reason for the uniformity in the date of the announcement is due to the fact that most canners and brokers wait for one of the two leading factors in the trade to announce its prices. When these prices are fixed they are at once given to the trade, and the other packers then announce their own prices, which are, if not identical, closely similar to those named by the Alaska Packers Association or Deming & Gould.

The average¹ of the opening prices was \$5.14 per full case in 1916 and \$8.33 per full case in 1917, an increase of 62 per cent.

Section 3. Future sales and prices.

Future prices are of less importance in the canned salmon market than in the market for canned vegetables and canned fruits. Although many canners make so-called future contracts, these are generally made on the "S. A. P." basis (subject to approval of price). These S. A. P. contracts are really options under which the buyer can either confirm the purchase of all or of a part of the specified number of cases when the seller notifies him of his prices, or can refuse to confirm the contract entirely. During the latter part of August or the early part of September, after opening prices have been announced, the S. A. P. sales become binding contracts for the quantities confirmed by the buyers. It is obvious that such contracts may easily lead to overbuying or speculative buying by wholesale grocers.

¹ A "weighted average" allowing for different quantities of each grade packed, to be sold at different prices.

Some few packers sell under binding future contracts at firm or specified prices. Such contracts are an aid to the canners in negotiating loans from their banks, as the sale and price of his pack are assured. When such contracts are made before the packing season, the canner assumes the risk of a possible short pack and a possible increase in prices, but is protected against a later decline in prices. However, very few such contracts are made, and most of the salmon is sold on S. A. P. contracts, confirmed when opening prices are announced, or on spot contracts.

In case of a short pack, pro rata deliveries are generally made to buyers just as is done by canners of other commodities under their future contracts.¹

Section 4. Spot prices of canned salmon.

The spot prices of canned salmon on the New York market rose from early in 1916 to May, 1917, rising with especial rapidity during March and April, 1917. After May, the spot price fluctuated, but did not go above the high point reached in early May, and on the whole was somewhat lower.

The price of canned salmon rose at a slightly more rapid rate than the general average of food prices during the winter of 1916-1917. In the early summer of 1917, the advances both in the general average of food prices, and in the prices of canned salmon were checked and slight declines followed. Salmon prices declined somewhat more than the general average of food prices, although both have been subject to frequent fluctuations.

The canners do not draw any definite distinction between future and spot sales. Many sales made or confirmed at the opening prices are reported as spot sales. On the other hand, many canners reported only sales made throughout the year at various prices as spot sales. For this reason it was impossible to ascertain satisfactorily the relative importance of spot and future sales made by the canners. It was also impossible to compare canners spot prices either with their future prices, or with spot prices in the eastern markets, or with prices received by brokers. It seems that canners should make a clear distinction between spot and future sales, and that this distinction should be strictly observed in keeping their records.

Section 5. Broker's prices.

Table 25 shows the average of the high and low monthly prices received by brokers on both brokerage and merchandising sales for red, medium red, pink, and chum grades during 1917.

¹ See Federal Trade Commission Report on Canned Foods: General Report, and Canned Vegetables and Fruits, p. 62, Washington, 1918.

TABLE 25.—BROKERS' PRICES OF CANNED SALMON; AVERAGE OF HIGH AND LOW MONTHLY PRICES PER CASE RECEIVED BY BROKERS ON BROKERAGE AND MERCHANDISING SALES FOR RED, MEDIUM RED, PINK, AND CHUM SALMON: 1917.

Months.	Pacific coast.		Rest of United States.	
	Brokerage sales price per case.	Merchandising sales price per case.	Brokerage sales price per case.	Merchandising sales price per case.
January.....				
February.....	\$5.18	\$5.73	\$5.10	\$5.17
March.....	5.28	5.85	5.80	6.42
April.....	5.32	6.31	5.96	6.72
May.....	6.05	6.43	7.12	7.39
June.....	7.57	7.21	8.12	10.80
July.....	7.30	7.52	6.84	6.40
August.....	7.47	7.46	7.41	6.88
September.....	7.45	7.38	7.73	8.21
October.....	7.78	7.56	8.09	8.04
November.....	7.93	8.08	8.56	8.53
December.....	8.05	8.04	9.21	8.75
.....	7.98	7.19	9.05	8.84
Average for 12 months.....	6.95	7.06	7.42	7.68
Excess of merchandising over brokerage prices.....		.11		.26

Prices were reported by 26 brokerage companies, 18 of which were located on the Pacific coast, and 8 were situated in various cities throughout the central and eastern portion of the country. This table shows that higher prices were received by brokers on their buy-and-sell, or merchandising, business than on their strictly brokerage business, the difference being greater in the case of the eastern brokers than in the case of the Pacific coast brokers.

The average merchandising price for the year was \$0.11 above the average brokerage price for the Pacific coast brokers, and \$0.26 higher than the average brokerage price for the eastern brokers. This indicates that brokers demand and succeed in receiving higher prices for goods which they own than for goods which they sell for others. This fact, however, does not prove that they pay packers more for goods than the packers receive for goods sold on a brokerage basis.

A comparison of the prices on brokerage sales made in the two parts of the country show that the average on the Pacific coast was \$6.95 per case, and in the East was \$7.42 per case, the difference of 47 cents being just about sufficient to cover transportation charges. The average price on merchandising sales of the Pacific coast brokers was \$7.06 and \$7.68 for the eastern brokers, and this difference of 62 cents per case allowed a profit after paying the freight. A reasonable profit is, of course, necessary to induce brokers to engage in this kind of business, as it involves some risk.

In January, June, and July of 1917, brokerage prices were lower in the East than on the coast. The high points in eastern prices were in May, November, and December, while the high point was reached on the Pacific coast in November. Merchandising prices seem to fluctuate more than brokerage prices, and during the year 1917, eastern prices were more irregular than Pacific coast prices.

Section 6. Control of prices by brokers.

It will be pointed out in a later chapter that the salmon canning industry is dominated by a few large companies or groups of companies, each of which is in most cases connected with a large broker or other kind of distributor. It has been shown that the great bulk of the product passes out of the producers hands at prices named by a very few of these companies.

This investigation has not proved the existence of any definite agreement between these companies in fixing these prices or between the various brokers and packers in maintaining them after they have been fixed. It is apparent, however, that the brokers occupy a very important place in the marketing of salmon. Some contracts between brokers and packers state that all prices are to be confirmed by the packers. Just how often packers refuse sales made by brokers on account of unsatisfactory prices is not shown by information at hand. Some contracts give the broker the right to fix the prices of goods sold for his principal. A copy of one contract in the possession of the Commission states that "we [the brokerage company] are at all times to have full authority to meet prices of our competitors." A letter to the packer which accompanied the contract stated "we would not expect to sell without your consent below prices made by ——— for the company he operates and the companies he represents." The information at hand is not sufficient to show what proportion of the contracts give the brokers the right to fix prices. As the broker, however, often (1) finances the packer, (2) sells his entire output, and as (3) the packer is often poorly informed as to market conditions, it appears that the broker is a very important factor in making prices, and, in fact, controls many of the sales, even though the contract may state that all prices are to be confirmed by the packer.

CHAPTER V.

CAPITALIZATION, INVESTMENT, AND PROFITS IN THE SALMON CANNING INDUSTRY.

Section 1. Capitalization.

Table 26 shows the average amount of capitalization, borrowed funds, and outside investments of the American salmon canning companies. In this table a company having canneries in more than one district is tabulated in that district in which it packed the largest number of cases.

TABLE 26.—CAPITALIZATION, BORROWED FUNDS, AND OUTSIDE INVESTMENTS OF SALMON CANNING COMPANIES ON DEC. 31, 1917.

	Western Alaska.	Central Alaska.	South Alaska.	Puget Sound.
Number of companies reporting.....	11	10	41	32
Amount of stock outstanding:				
Common, average par value per company ¹	\$1,319,790.90	\$76,200.00	\$144,140.78	\$170,811.25
Preferred, average par value per company.....			1,951.22	
Bonds, par value outstanding, average per company.....				5,250.00
Average capitalization per company.....	1,319,790.90	76,200.00	146,092.00	176,061.25
Average amount of all borrowed funds per company.....	1,720,919.37	90,742.04	55,979.56	149,427.31
Outside investments:				
Stock, par value, average per company held.....	1,842,290.91		6,959.15	27,492.50
Bonds, par value, average per company held.....	585,100.00		2,341.46	
Loans and advances to other companies, average per company.....	41,159.03	626.86	14,109.98	1,380.91
Average total outside investments.....	2,468,549.94	626.86	23,410.59	28,873.41

	Columbia River.	Outside Rivers.	Total U. S.
Number of companies reporting.....	15	19	128
Amount of stock outstanding:			
Common, average par value per company ¹	\$195,891.60	\$73,154.47	\$242,060.47
Preferred, average par value per company.....		2,105.26	937.50
Bonds, par value outstanding, average per company.....			1,312.50
Average capitalization per company.....	195,891.60	75,259.73	244,310.47
Average amount of all borrowed funds per company.....	48,085.57	28,155.48	204,450.78
Outside investments:			
Stock, par value, average per company held.....	450.00	1,155.26	167,648.32
Bonds, par value, average per company held.....	13,596.66		53,211.33
Loans and advances to other companies, average per company.....	19,406.73	1,322.78	10,921.48
Average total outside investments.....	38,453.39	2,478.04	231,781.13

¹ Includes capital of unincorporated canners.

The largest companies had their major operations in West Alaska. The West Alaska canners also had the largest average amount of borrowed funds per company, the amount of such funds being in excess of the capitalization by an average of \$400,000 per company. The existence of the larger companies in this district is due to the fact that it is farthest away from the base of operations in Washington, Oregon, and California, and so has a larger transportation cost. As this district is sparsely settled, it has been more difficult to develop.

Salmon were so plentiful, however, that companies large enough to meet the difficulties were attracted to this section. When the canneries became too plentiful, consolidations leading to still larger companies were effected in various ways. These companies have a distinct advantage over small companies with a single plant due to their ability to absorb a loss at a particular plant when the expected run of fish fails. The laborers, materials, and supplies can be transferred to another plant where fish are more plentiful. The canner with a single plant may have very high profits one year and the next year may suffer a loss.

The smallest companies are located on the Outside Rivers¹ and in Central Alaska. A relatively small pack is obtained in the former district, and no large firm has its major operations in the latter section.

The preceding table shows that practically no preferred stock or bonds were issued, but that most of the companies had large amounts of borrowed funds. If they had reported as of July 31, instead of December 31, the figures would probably have been much larger. In December, when the season's operations are over, and when a large part of the goods have been sold and paid for, most of the loans for purely operating expenses have been paid off. These figures show that the companies in Southeast Alaska and on the Outside Rivers had the smallest average amount of borrowed funds (\$55,979.56 in Southeast Alaska, and \$28,155.48 on the Outside Rivers), in proportion to their capitalization. The companies in Southeast Alaska, Outside Rivers, and Central Alaska had the lowest average amount of outside investments (\$23,410.57 in Southeast Alaska, \$2,478.04 in Outside Rivers, and \$626.86 in Central Alaska).

Table 26 shows that the average capitalization (i. e., stocks and bonds) for all companies was \$244,310.47. The average by sections is as follows: West Alaska, \$1,319,790.90; Central Alaska, \$76,200; Southeast Alaska, \$146,092; Puget Sound, \$176,061.25; Columbia River, \$195,891.60; and Outside Rivers, \$75,259.73. These are relatively large figures for canners and indicate that it requires a good-sized company to operate efficiently.

Section 2.—Investment in the industry.

The capitalization of a company may vary widely from the amount of money invested therein. Accordingly an effort has been made to approximate the true net investment (capital stock, bonds, and surplus with outside investments and good will deducted) in salmon canning companies, and the results are shown in Table 27.

¹ Coastal streams in Washington, Oregon, and California.

TABLE 27.—INVESTMENT IN SALMON CANNING COMPANIES. TOTALS BY DISTRICTS WITH AVERAGE PER CASE AND PER COMPANY FOR 1916 AND 1917.

District.	Number of companies.	Number of cases packed.	Total investment.	Investment per case.	Average investment per company.
1916					
West Alaska.....	9	1,970,994	\$12,780,507.42	\$6.48	\$1,420,056.38
Central Alaska.....	6	283,351	706,043.48	2.49	117,673.91
Southeast Alaska.....	32	2,010,005	6,658,657.39	3.31	208,083.04
Columbia River.....	5	172,382	835,077.08	4.84	167,015.41
Outside Rivers.....	5	61,978	490,339.10	7.91	98,067.82
Puget Sound.....	19	919,365	5,443,318.70	5.92	286,516.77
Total and averages.....	76	5,418,075	26,913,943.17	4.97	354,130.83
1917					
West Alaska.....	10	2,206,584	15,605,117.00	7.07	1,560,511.70
Central Alaska.....	8	391,441	1,405,807.87	3.59	175,725.98
Southeast Alaska.....	38	3,028,311	8,194,257.15	2.71	215,638.34
Columbia River.....	5	179,184	1,181,848.65	6.60	236,369.73
Outside Rivers.....	5	59,729	544,756.88	9.12	110,951.37
Puget Sound.....	24	1,536,486	4,934,235.19	3.21	205,553.13
Total and averages.....	90	7,401,735	31,866,022.74	4.31	354,066.91

The average investment as shown by the balance sheets for 90 salmon canning companies in 1917 was \$356,066.91, as compared with \$354,130.83 for 76 companies in 1916. The average investment per case was \$4.31 in 1917, as compared with \$4.97 in 1916, the decrease being due chiefly to the larger pack in 1917.

In 1917 the highest average investment per case of output (\$9.12) was in the Outside River district.¹ The average investment per company, however, was the lowest in the same district. The small companies located here have a larger investment in proportion to product than the larger companies even though they purchase most of their fish and in some cases get two packs a year. This may be due to the distance of the canneries from the supply of fish or to the inefficiency of the small plants.

The next highest investment per case of output (\$7.07) was in the West Alaska district, which also has the largest average investment per company (\$1,560,511.70). The reasons for this have already been stated. The Columbia River packers also have a relatively high investment per unit of product.

The lowest investment per case (\$2.71) was in the Southeast Alaska district in 1917, and in the Central Alaska district (\$2.49) in 1916. This is partly due to low labor cost (see table 13), and also indicates either the more economical use of capital in these sections, or possession of the most desirable fishing grounds.

It is plain that the remote West Alaska packers and the packers on the coastal streams, where runs of fish are small or irregular, are at a disadvantage in regard to the amount of investment required per unit of product. The disadvantage of the West Alaska packers is very largely overcome by the fact that most of their pack consists of reds, which commands a high price on the market.

When the average investment per company is compared with the average capitalization, as shown in table 27, it is seen that the average investment per company is larger for each district, showing an average

¹ Includes long-term notes.

undercapitalization. This fact appears to indicate that earnings from past years have been left in the business.

Section 3.—Profits of salmon canning companies in 1916 and 1917.

The average net profit on investment of 76 salmon canning companies in 1916 was 22.1 per cent compared with 52.7 per cent for 90 companies in 1917. The average profit per case packed was \$1.10 in 1916, compared with \$2.27 in 1917. Table 28 shows the average percentage of net profit on investment and the average net profit per case of product by districts for 1916 and 1917.

TABLE 28.—NET PROFITS OF SALMON CANNING COMPANIES—PROFIT PER CASE ON CASES PACKED FOR 1916 AND 1917, AND PER CENT OF PROFIT ON INVESTMENT.

District.	Number of companies.	Total investment.	Total net profits.	Per cent net profit on investment.	Number of cases packed.	Net profit per case packed.
1916						
West Alaska.....	9	\$12,780,507.42	\$3,077,138.01	24.07	1,970,994	\$1.56
Central Alaska.....	6	706,043.48	447,150.66	63.33	283,351	1.58
Southeast Alaska.....	32	6,658,657.39	1,554,216.05	23.34	2,010,005	.77
Puget Sound.....	19	5,443,318.70	615,780.55	11.31	919,365	.67
Columbia River.....	5	835,077.08	189,171.95	22.65	172,382	1.10
Outside Rivers.....	5	490,339.10	73,513.62	14.99	61,978	1.19
Total and averages.....	76	26,913,943.17	5,956,970.84	22.13	5,418,075	1.10
1917						
West Alaska.....	10	15,605,117.00	7,784,238.91	49.88	2,206,584	3.53
Central Alaska.....	8	1,405,807.87	670,321.09	47.68	391,441	1.71
Southeast Alaska.....	38	8,194,257.15	5,888,910.12	71.87	3,028,311	1.94
Puget Sound.....	24	4,934,235.19	2,006,151.05	40.66	1,536,486	1.31
Columbia River.....	5	1,181,848.65	327,942.79	27.75	179,184	1.83
Outside Rivers.....	5	544,756.88	117,208.58	21.52	59,729	1.96
Total and averages.....	90	31,866,022.74	16,794,775.54	52.70	7,401,735	2.27

The highest net profits on investment were made by Central Alaska canners in 1916 (63.3 per cent) and by Southeast Alaska canners in 1917 (71.9 per cent). The large pack in Southeast Alaska in 1917 reduced the labor costs, depreciation charges, and general expenses per case of output and resulted in very large net profits. The lowest profits on investment made in 1917 were those of the Outside River canners,¹ who, however, averaged 21.5 per cent. In 1916 the lowest average was 11.3 per cent, made by Puget Sound canners.

The average net profit per case packed was \$1.10 in 1916 and \$2.27 in 1917. The lowest net profit per case of product was made in both years by the Puget Sound packers (\$0.67 in 1916 and \$1.31 in 1917). In 1916 the highest average net profit per case of product was \$1.58 as made by the Central Alaska packers, while in 1917 the highest was \$3.53, made by the West Alaska packers. The packers of Southeast Alaska made the highest average percentage of profit in 1917 and the third largest in 1916, while the profits per case of these canners were next to the lowest in 1916 and only the third highest in 1917. The relatively low profits per case appear to be due to the large quantity of low-priced fish (pinks and chums) canned in this section.

¹ Coastal streams in Washington, Oregon, and California.

The net profits made by individual canners varied greatly in both years. Table No. 29 shows the range of profit or loss made by individual canners in 1916 and 1917.

TABLE 29.—PROFITS OR LOSSES OF CANNING COMPANIES ON INVESTMENT.

Range of percentages, profit, or loss.	1916						Total	Number of cases packed.
	West Alaska.	Central Alaska.	South-east Alaska.	Puget Sound.	Columbia River.	Outside Rivers.		
Loss:								
Over 30.....						1	1	1,279
20.0-25.....						3	3	59,950
4.9-0.....				2			2	288,010
Profit:								
0-4.9.....		2		1			3	97,040
5-9.9.....		1		1			2	469,310
10-14.9.....	1			4			5	394,837
15-19.9.....	2			2			4	385,224
20-24.9.....	1	1		4		2	6	1,758,317
25-29.9.....	1			5		1	7	532,138
30-34.9.....				2	1		3	137,352
35-39.9.....	1	1		1		1	4	210,670
40-44.9.....				2			2	184,263
45-49.9.....	1			2	1	2	6	223,339
50-54.9.....				1			1	217,012
55-59.9.....		1		1			2	137,481
60-64.9.....							1	104,809
65-69.9.....	1						1	28,220
70-74.9.....							1	100,420
75-79.9.....							1	87,804
80-84.9.....							1	
Over 100.....				2			2	
Total.....	9	6	32	19	5	5	76	5,418,075

Range of percentages, profit, or loss.	1917						Total	Number of cases packed.
	West Alaska.	Central Alaska.	South-east Alaska.	Puget Sound.	Columbia River.	Outside Rivers.		
Loss:								
Over 30.....	1				2		3	40,232
24.9-20.....	1				1		2	29,720
19.9-15.....			1				1	8,743
9.9-5.....			2				2	31,582
4.9-0.....				3			3	122,330
Profit:								
0-4.9.....			1		3		4	188,437
5-9.9.....		1		1			2	38,077
10-14.9.....	1					1	2	87,348
15-19.9.....	1		1				2	126,923
20-24.9.....		1	1				2	83,975
25-29.9.....				1		1	2	74,336
30-34.9.....			1				1	344,680
35-39.9.....			1		5		6	139,388
40-44.9.....	1					3	4	229,529
45-49.9.....	1	2		4			7	1,909,244
50-54.9.....	1	1		2			4	556,926
55-59.9.....	2		3				5	724,005
60-64.9.....		1	1	2			4	339,319
65-69.9.....		1	3	1			5	668,767
70-74.9.....	1						1	87,732
75-79.9.....							1	149,193
80-84.9.....							1	691,619
85-89.9.....							1	56,006
90-94.9.....							1	673,924
Over 100.....			10				10	
Total.....	10	8	38	24	5	5	90	7,401,735

In 1916 the largest loss reported was 70.2 per cent and the largest profit 167.9 per cent. In 1917 the greatest loss was 69 per cent and the highest profit was 238.7 per cent. Between these extremes, the profits of the separate canners varied widely.

In 1916, 10 out of 76 companies, or 7.6 per cent, reported losses. Of this number 5 were located on Puget Sound (out of a total of 19 reporting from that district); 2 were on the coastal streams (out of a total of 5); and 3 were in Southeast Alaska (out of a total of 32). Only 4 of the 10 companies showed a loss of over 5 per cent. Of the 66 companies making a profit, only 21 made less than 15 per cent; 31 made between 15 and 50 per cent; 11 made between 50 and 100 per cent; and 3 made over 100 per cent profit.

In 1917, 12 out of 90 companies failed to make any profit. Of these companies 6 were in the Puget Sound territory; 5 were in Alaska, and only 1 in the Outside River group. Of the 78 companies having a profit, only 12 made under 15 per cent; 30 made between 15 and 50 per cent; 25 made between 50 and 100 per cent, and 11 made over 100 per cent profit. This analysis shows clearly that, taken as a whole, the industry made much larger profits in 1917 than in 1916.

This table shows that most of the companies with the largest profits, in 1917, were located in Alaska, and Puget Sound; those with the very highest profits were in Southeast Alaska. All of the 5 Columbia River companies made between 10 and 50 per cent in both years.

The net profit per case on cases sold, and the percentages of net profit on net sales, and on cost of sales are shown by districts in Table 30.

TABLE 30.—SALES AND PROFITS OF SALMON CANNING COMPANIES. AVERAGE PER CENT NET PROFIT ON SALES, AND COST OF SALES, AND AVERAGE PROFIT PER CASE ON NUMBER CASES SOLD FOR 1916 AND 1917, BY DISTRICTS.

District.	Number of companies.	Number of cases sold.	Net sales.	Cost of sales.	Net profit. ¹	Per cent of net profit on sales.	Per cent of net profit on cost of sales.	Profit per case on cases sold.
1916.								
West Alaska.....	9	2,668,890½	\$13,954,145.96	\$10,914,439.44	\$3,077,133.01	22.05	28.19	\$1.15
Central Alaska.....	6	255,937	1,206,365.29	906,413.18	277,150.66	22.97	30.53	1.08
Southeast Alaska.....	26	1,657,642	7,031,551.90	5,493,898.17	1,273,928.35	18.12	23.19	.77
Puget Sound.....	18	1,218,872	5,940,885.07	5,438,376.57	820,257.85	10.44	11.41	.51
Columbia River.....	4	125,851	822,317.59	698,930.21	123,387.38	15.00	17.65	.98
Outside Rivers.....	5	70,761½	449,948.18	380,070.16	80,592.06	17.91	21.20	1.14
Total and average...	66	5,998,004	29,405,213.99	23,832,118.73	5,452,454.31	18.54	22.88	.91
1917.								
West Alaska.....	10	2,348,033	19,298,450.76	11,420,631.88	7,811,995.67	40.48	68.40	3.33
Central Alaska.....	5	257,948	1,892,410.93	1,273,293.80	596,614.98	31.57	46.96	2.31
Southeast Alaska.....	25	2,031,927	13,185,457.14	8,391,177.74	4,511,794.15	34.22	53.77	2.22
Puget Sound.....	18	1,088,659	7,052,899.67	5,606,604.74	1,492,093.95	21.15	26.61	1.37
Columbia River.....	4	135,242	1,055,124.83	914,296.39	140,404.06	13.31	15.36	1.04
Outside Rivers.....	5	51,471	566,840.84	445,708.70	117,208.53	20.68	26.30	2.28
Total and average...	67	5,913,280	43,051,184.17	28,051,713.25	14,670,111.39	34.08	52.23	2.43

¹ The average gross profit per case sold was \$2.54 in 1917 and \$0.93 in 1916. Adjustments due to adding other income and making other deductions account for the difference between gross and net profits.

The net profit per case on number of cases sold increased from \$0.91 for 66 companies in 1916 to \$2.48 for 67 companies in 1917. This was a smaller profit per case than was made on the number of cases packed in 1916, and larger than that made on the number of cases packed in 1917. This was probably due to the fact that a part of the 1916 profit was applicable to goods produced in 1915, as these companies sold more cases than they packed in 1916. Much salmon packed in 1917 was carried over into 1918. Thus, when net profits were divided by number of cases sold, the unit profit was larger than when divided by the number of cases packed.

The largest profit per case on cases sold was made by West Alaska cannery in both years (\$1.15 in 1916, and \$3.33 in 1917); the second largest profit in 1916 (\$1.14) was made by the Outside River cannery, and in 1917 (\$2.31) was made by the Central Alaska packers. The lowest profit per case in 1916 (\$0.51) was realized by the Puget Sound packers, and the lowest profit per case in 1917 (\$1.04) was realized by the Columbia River cannery.

The average net profit on cost of sales in 1916 was 22.9 per cent, varying from 11.4 per cent in the Puget Sound district to 30.6 per cent in the Central Alaska district. In 1917 the net profit on cost of sales was 52.2 per cent, being as low as 15.4 per cent in the Columbia River district, and as high as 68.4 per cent in the West Alaska district. These percentages of net profit on sales for the industry as a whole closely resemble the percentages of net profits made on investment, indicating a general turnover of capital at the rate of once a year. The figures for some of the districts, however, vary considerably. For instance, the percentage of profit on investment in 1916 was much higher than the percentage of profit on cost of sales in the Central Alaska district, due to low investment per case of product.

The average net profit on net sales was 18.5 per cent in 1916, and 34.1 per cent in 1917, varying between the districts in somewhat the same ratio as did the percentage of net profits on the cost of sales.

Section 4. The investment and the profits of the brokers.

The capital needed to operate a brokerage business depends largely upon the nature of the business. For a strictly brokerage business, little capital is needed, as it is only necessary to maintain an office and to pay salaries from one delivery season to the next. In such cases the profit is really a return for personal services or selling ability, and its relation to an investment, which is often small, may prove misleading. A broker, however, who acts as sales agent and who finances several canners must have a large working capital or must have credit sufficient to enable him to help carry his financially weak principals. If this working capital is permanently invested in the business, the calculation of a percentage of net profits on the investment may be more significant.

Tables 31 and 32 show the investment, the earnings from operations, the total net profits, the salaries and the return on investment¹ for 1916 and 1917, for 13 Pacific Coast canned salmon brokers and 8 general canned-food brokers, located in other sections of the country.

¹ Officers' salaries are included with net earnings in figuring these percentages.

TABLE 31.—INVESTMENTS AND EARNINGS OF CANNED-FOOD BROKERS WHO HANDLED CONSIDERABLE QUANTITIES OF CANNED SALMON DURING 1916.

Number of company.	Investment. ¹	Gross earnings.	Net earnings from operations.	Total net profit.	Salaries.	Net earnings plus salaries.	Per cent of net earnings plus salaries on investment. ¹
Pacific coast salmon brokers:							
1.....	\$171,399.85	\$222,699.19	\$136,595.49	\$136,595.49	\$51,335.00	\$187,930.49	109.6
2.....	385,377.34	188,095.09	56,936.32	56,936.32	25,811.56	82,747.88	21.46
3.....	7,305.81	43,389.84	38,081.58	38,081.58	1,021.88	39,103.46	534.41
4.....	48,316.70	45,352.37	9,217.14	9,217.14	5,333.50	14,750.64	30.52
5.....	257,364.24	254,280.32	63,396.11	78,889.25	34,449.00	97,845.11	38.01
6.....	100,000.00	62,145.11	845.96	56,951.31	27,907.25	28,753.21	28.75
7.....	60,960.31	28,194.78	10,960.31	10,960.31	11,899.60	22,859.91	37.49
8.....	2,832.69	9,886.37	2,547.43	2,547.43	3,600.00	6,147.43	217.72
9.....	15,297.23	11,605.85	892.22	3,892.22	2,100.00	5,992.22	39.17
10.....	17,189.08	30,371.41	16,555.70	16,555.70	8,887.50	25,443.20	148.01
11.....	43,370.59	55,208.10	44,100.70	44,184.00	7,424.55	51,525.25	118.80
12.....	228,358.82	47,902.61	22,351.18	63,533.34	23,055.00	45,406.18	19.88
13.....	124,215.16	23,273.24	10,269.46	10,269.46	6,942.19	17,211.65	13.85
Total.....	1,461,585.82	1,022,404.28	415,769.60	415,235.93	209,967.03	625,736.63	.....
Average per company.....	112,459.00	78,651.09	31,982.28	31,941.23	16,151.31	48,132.80	42.80
General canned-food brokers in other sections:							
1.....	79,119.65	126,445.54	62,371.74	84,565.69	31,837.57	94,209.31	119.07
2.....	32,086.79	48,328.22	26,376.80	26,376.80	16,108.03	42,484.83	129.97
3.....	46,146.74	72,830.12	46,807.23	46,807.23	5,000.00	51,807.23	114.43
4.....	68,139.60	54,400.10	47,111.77	47,111.77	11,200.00	4,088.23	5.99
5.....	5,006.28	28,187.41	15,469.89	15,469.89	.....	15,469.89	274.86
6.....	48,713.34	27,533.82	18,269.78	21,187.20	7,559.14	25,828.90	53.02
7.....	9,210.27	51,553.82	18,851.44	19,093.23	6,156.67	25,008.11	271.52
8.....	24,354.36	79,370.02	24,674.97	24,674.97	35,132.74	59,807.71	24.57
Total.....	313,977.03	488,669.05	205,650.06	231,603.24	112,994.15	318,644.21	.....
Average per company.....	39,247.13	61,083.63	25,706.26	28,950.41	14,124.27	39,830.53	101.48

¹ See discussion on pp. 64, 66-67.

² Loss.

TABLE 32.—INVESTMENTS AND EARNINGS OF CANNED-FOOD BROKERS WHO HANDLED CONSIDERABLE QUANTITIES OF CANNED SALMON DURING 1917.

Number of company.	Investment. ¹	Gross earnings.	Net earnings from operations.	Total net profit.	Salaries.	Net earnings plus salaries.	Per cent of net earnings plus salaries on investment. ¹
Pacific coast salmon brokers:							
1.....	\$287,995.34	\$401,664.78	\$163,452.54	\$163,452.54	\$58,000.00	\$221,452.54	76.89
2.....	272,388.95	293,984.29	58,162.99	58,162.99	34,604.70	92,767.59	34.05
3.....	7,305.81	86,506.00	34,672.97	34,672.97	21,788.12	56,461.09	772.82
4.....	54,122.22	104,808.55	41,449.61	41,449.61	7,283.50	48,739.11	90.05
5.....	306,253.49	302,401.42	77,293.47	79,301.54	35,195.00	112,488.47	36.73
6.....	100,000.00	102,355.82	2 55.09	8,386.60	44,242.20	44,187.11	44.18
7.....	60,960.31	101,052.67	72,328.42	72,328.42	17,088.00	89,416.42	146.67
8.....	4,644.61	18,452.82	1,888.83	1,888.83	6,000.00	7,888.83	169.84
9.....	16,149.45	35,623.59	11,189.57	11,889.57	4,580.00	16,169.57	99.87
10.....	21,744.78	24,833.61	10,648.15	10,648.15	9,600.00	20,248.15	93.11
11.....	52,608.25	80,426.03	45,478.05	46,187.54	19,909.00	65,387.05	124.29
12.....	238,780.16	45,703.25	19,289.69	36,105.90	23,023.00	42,312.69	17.72
13.....	126,718.57	39,999.49	15,163.87	15,163.87	7,564.35	22,728.22	17.93
Total.....	1,549,711.94	1,607,812.32	550,963.07	579,738.83	289,283.77	840,246.84	.....
Average per company.....	119,208.61	123,677.88	42,381.77	44,595.29	22,252.00	64,634.37	54.21
General canned-food brokers in other sections:							
1.....	100,622.72	208,484.61	109,154.85	132,358.14	71,482.82	174,637.67	173.55
2.....	32,686.79	78,674.53	43,371.17	45,371.17	27,095.45	72,466.62	221.70
3 ¹	49,425.30	110,207.08	59,304.14	59,304.14	5,000.00	64,304.14	130.10
4.....	75,251.37	89,782.05	6,865.85	6,865.85	11,372.74	18,238.59	24.23
5.....	5,606.28	58,343.58	36,575.56	36,575.56	.....	36,575.56	652.40
6.....	48,713.24	34,875.32	19,615.44	21,772.90	12,856.66	32,472.10	66.45
7.....	9,216.07	71,417.44	37,894.01	40,016.26	9,960.00	47,854.01	519.58
8.....	28,734.02	94,605.63	30,166.68	30,166.68	42,405.84	72,572.52	252.56
Total.....	350,249.89	746,370.24	338,947.70	372,430.70	180,173.51	519,121.21	.....
Average per company.....	43,781.24	93,296.28	42,368.46	46,553.81	22,521.69	64,890.15	148.21

¹ See discussion on pp. 64, 66-67.² Loss.³ Includes only eight months.

These tables show that the average investment for the brokers on the Pacific Coast was \$112,459 in 1916, and \$119,208.61 for 1917. The largest investment in 1917 was \$306,253.49 and the smallest was \$4,644.61. The largest investment in 1916 was \$385,377.34 and the smallest was \$2,832.69.

Some companies took out most or all of the net profits as officers' salaries. In most instances, to get figures which correctly represented the actual net profits, officers' salaries had to be added to earnings, and for the sake of uniformity this was done in all cases. The average percentage of net earnings (including salaries) on investment was 54.21 per cent for the 13 Pacific Coast companies in 1917, as compared with 42.80 per cent for the same companies in 1916. The highest percentage earned in 1916 was 534 and the lowest was 10.9. Of the 13 companies, 4 made over 100 per cent, 3 made between 10 and 20 per cent, and the other 6 made between 20 and 50 per cent. The highest percentage in 1917 was 772.8, and the lowest was 17.7. Four of the companies made over 100 per cent; 2 made between 15 and 20 per cent; 3 between 30 and 50 per cent; and 4 made between 50 and 100 per cent. It should be noted again that investment in a brokerage business is relatively unim-

portant as compared with a manufacturing business, and consequently that a large percentage of return on investment is not necessarily an excessive one.

These tables show that the eight general canned-food brokers in the Eastern States had an average investment of \$43,781.24 in 1917, compared with \$39,247.13 in 1916. The largest investment in 1917 was \$100,622.72, and the lowest was \$5,606.28. The average relation of net earnings (including salaries) on investment was 101.57 per cent in 1916 and 148 per cent in 1917. Five of the eight companies made over 100 per cent in 1916. Six of them made over 100 per cent, and four of them made over 200 per cent in 1917.

The average net earnings (including salaries) was \$64,890.15 per company in 1917 and \$39,830.53 in 1916. The ordinary brokerage company has only one or two officers, and their salaries have been added to the earnings. If six per cent were allowed on the investment for interest, the remainder would amount to \$62,263.28 per company for 1917 and \$37,475.70 for 1916. If this is taken as a reward for personal services, it is evident that the brokerage business paid handsomely in both years, especially as the largest firms were not included. The average earnings (including salaries) for the 13 brokers on the Pacific Coast was \$64,634.37 in 1917 and \$48,132.80 in 1916. When 6 per cent interest on investment is deducted, \$57,481.85 per company was left for the owners and managers in 1917 and \$41,385.26 was left in 1916.

The eastern brokers had a smaller average investment, and made a lower average profit per company, but showed a higher percentage of profit. This was apparently due, at least in part, to the fact that they financed few cannerys.

Section 5. Brokers' earnings.

The earnings and net profits made by three representative Seattle brokers on brokerage and merchandising sales during 1916 and 1917 are shown in Table 33.

TABLE 33.—REPRESENTATIVE SALMON BROKERS' EARNINGS PER CASE; AVERAGE BROKERAGE AND MERCHANDISING INCOME AND PROFITS PER CASE MADE BY TYPICAL CANNED SALMON BROKERS; 1916 AND 1917.

Company.	Location.	Year.	Kind of sale.	Average brokerage received per case.	Sub-brokerage paid.	Net brokerage.	Operating expense.	Net profit.	Average sale value.	Per cent net profit on value.
1	Seattle.....	1916	Brokerage.....	\$0.223	\$0.112	\$0.111	\$0.051	\$0.060	\$4.45	1.3
1	Seattle.....	1916	Merchandising..	.254	.....	.....	.051	.203	3.77	5.4
1	Seattle.....	1917	Brokerage.....	.398	.187	.209	.096	.113	6.92	1.6
1	Seattle.....	1917	Merchandising..	.123	.....	.....	.096	.027	7.46	.4
2	Seattle.....	1916	Brokerage.....	.152	.0549	.0971	.057	.0401	3.88	1.0
2	Seattle.....	1917	Brokerage.....	.316	.181	.135	.043	.092	6.55	1.4
3	Seattle.....	1916	Brokerage.....	.208	.140	.068	.016	.052	4.26	1.2
3	Seattle.....	1917	Brokerage.....	.296	.166	.130	.111	.019	6.42	.3
3	Seattle.....	1917	Merchandising..	.946	.....	.....	.122	.842	7.54	11.1

The average brokerage per case was 19.4 cents in 1916 and 33.7 cents in 1917. About one-half of this was paid to sub-brokers, so that the net brokerage amounted to 9.2 cents in 1916 and 15.8 cents

TABLE 32.—INVESTMENTS AND EARNINGS OF CANNED-FOOD BROKERS WHO HANDLED CONSIDERABLE QUANTITIES OF CANNED SALMON DURING 1917.

Number of company.	Investment. ¹	Gross earnings.	Net earnings from operations.	Total net profit.	Salaries.	Net earnings plus salaries.	Per cent of net earnings plus salaries on investment. ¹
Pacific coast salmon brokers:							
1.....	\$287,995.34	\$401,664.78	\$163,452.54	\$163,452.54	\$58,000.00	\$221,452.54	76.89
2.....	272,388.95	203,984.29	58,162.99	58,162.99	34,604.60	92,767.59	34.05
3.....	7,305.81	86,506.00	34,672.97	34,672.97	21,788.12	56,461.09	772.82
4.....	54,122.22	104,808.55	41,449.61	41,449.61	7,283.50	48,733.11	90.05
5.....	306,253.49	362,401.42	77,283.47	79,301.54	35,195.00	112,488.47	36.73
7.....	100,000.00	102,355.82	55.00	8,386.60	44,242.20	44,187.11	44.18
8.....	60,960.31	101,052.67	72,328.42	72,328.42	17,088.00	83,416.42	146.67
9.....	4,644.61	18,452.82	1,888.83	1,888.83	6,000.00	7,888.83	169.84
10.....	16,189.45	35,623.59	11,189.57	11,989.57	4,980.00	16,169.57	99.87
11.....	21,744.78	24,833.61	10,648.15	10,648.15	9,600.00	20,248.15	93.11
12.....	52,608.25	80,426.03	45,478.05	46,187.84	19,909.00	65,887.05	124.29
13.....	238,780.16	45,703.25	19,289.69	36,105.90	23,023.00	42,312.69	17.72
13.....	126,718.57	39,999.49	15,163.87	15,163.87	7,964.35	22,728.22	17.93
Total.....	1,549,711.94	1,607,812.32	550,963.07	579,738.83	289,283.77	840,246.84	.....
Average per company.....	119,208.61	123,677.88	42,381.77	44,595.20	22,252.60	64,634.37	54.21
General canned-food brokers in other sections:							
1.....	100,622.72	208,484.61	103,154.85	132,358.14	71,482.82	174,637.07	173.55
2.....	32,686.79	78,674.53	45,371.17	45,371.17	27,095.45	72,466.62	221.70
3 ^a	49,425.30	110,207.08	59,304.14	59,304.14	5,000.00	64,304.14	130.10
4.....	75,251.37	89,762.05	6,865.85	6,865.85	11,372.74	18,238.59	24.23
5.....	5,606.28	58,343.58	36,575.56	36,575.56	.....	36,575.56	652.49
6.....	48,713.34	34,875.32	19,615.44	21,772.90	12,856.66	32,472.10	66.45
7.....	9,216.67	71,417.44	37,894.01	40,016.26	9,900.00	47,854.01	519.58
8.....	28,734.02	94,665.63	30,166.68	30,166.68	42,405.84	72,572.52	252.56
Total.....	350,249.89	746,370.24	338,947.70	372,430.70	189,173.51	519,121.21	.....
Average per company.....	43,781.24	93,296.28	42,308.46	46,553.84	22,521.69	64,890.15	148.21

¹ See discussion on pp. 64, 66-67.² Loss.³ Includes only eight months.

These tables show that the average investment for the brokers on the Pacific Coast was \$112,459 in 1916, and \$119,208.61 for 1917. The largest investment in 1917 was \$306,253.49 and the smallest was \$4,644.61. The largest investment in 1916 was \$385,377.34 and the smallest was \$2,832.69.

Some companies took out most or all of the net profits as officers' salaries. In most instances, to get figures which correctly represented the actual net profits, officers' salaries had to be added to earnings, and for the sake of uniformity this was done in all cases. The average percentage of net earnings (including salaries) on investment was 54.21 per cent for the 13 Pacific Coast companies in 1917, as compared with 42.80 per cent for the same companies in 1916. The highest percentage earned in 1916 was 534 and the lowest was 10.9. Of the 13 companies, 4 made over 100 per cent, 3 made between 10 and 20 per cent, and the other 6 made between 20 and 50 per cent. The highest percentage in 1917 was 772.8, and the lowest was 17.7. Four of the companies made over 100 per cent; 2 made between 15 and 20 per cent; 3 between 30 and 50 per cent; and 4 made between 50 and 100 per cent. It should be noted again that investment in a brokerage business is relatively unim-

portant as compared with a manufacturing business, and consequently that a large percentage of return on investment is not necessarily an excessive one.

These tables show that the eight general canned-food brokers in the Eastern States had an average investment of \$43,781.24 in 1917, compared with \$39,247.13 in 1916. The largest investment in 1917 was \$100,622.72, and the lowest was \$5,606.28. The average relation of net earnings (including salaries) on investment was 101.57 per cent in 1916 and 148 per cent in 1917. Five of the eight companies made over 100 per cent in 1916. Six of them made over 100 per cent, and four of them made over 200 per cent in 1917.

The average net earnings (including salaries) was \$64,890.15 per company in 1917 and \$39,830.53 in 1916. The ordinary brokerage company has only one or two officers, and their salaries have been added to the earnings. If six per cent were allowed on the investment for interest, the remainder would amount to \$62,263.28 per company for 1917 and \$37,475.70 for 1916. If this is taken as a reward for personal services, it is evident that the brokerage business paid handsomely in both years, especially as the largest firms were not included. The average earnings (including salaries) for the 13 brokers on the Pacific Coast was \$64,634.37 in 1917 and \$48,132.80 in 1916. When 6 per cent interest on investment is deducted, \$57,481.85 per company was left for the owners and managers in 1917 and \$41,385.26 was left in 1916.

The eastern brokers had a smaller average investment, and made a lower average profit per company, but showed a higher percentage of profit. This was apparently due, at least in part, to the fact that they financed few canners.

Section 5. Brokers' earnings.

The earnings and net profits made by three representative Seattle brokers on brokerage and merchandising sales during 1916 and 1917 are shown in Table 33.

TABLE 33.—REPRESENTATIVE SALMON BROKERS' EARNINGS PER CASE; AVERAGE BROKERAGE AND MERCHANDISING INCOME AND PROFITS PER CASE MADE BY TYPICAL CANNED SALMON BROKERS; 1916 AND 1917.

Company.	Location.	Year.	Kind of sale.	Average brokerage received per case.	Sub-brokerage paid.	Net brokerage.	Operating expense.	Net profit.	Average sale value.	Per cent net profit on value.
1	Seattle.....	1916	Brokerage.....	\$0.223	\$0.112	\$0.111	\$0.051	\$0.060	\$4.45	1.3
1	Seattle.....	1916	Merchandising..	.254	.....	.....	.051	.203	3.77	5.4
1	Seattle.....	1917	Brokerage.....	.398	.187	.209	.096	.113	6.92	1.6
1	Seattle.....	1917	Merchandising..	.123	.....	.....	.096	.027	7.46	.4
2	Seattle.....	1916	Brokerage.....	.152	.0549	.0971	.057	.0401	3.88	1.0
2	Seattle.....	1917	Brokerage.....	.316	.181	.135	.043	.092	6.55	1.4
3	Seattle.....	1916	Brokerage.....	.208	.140	.068	.016	.052	4.26	1.2
3	Seattle.....	1917	Brokerage.....	.296	.166	.130	.111	.019	6.42	.3
3	Seattle.....	1917	Merchandising..	.946	.....	.....	.122	.842	7.54	11.1

The average brokerage per case was 19.4 cents in 1916 and 33.7 cents in 1917. About one-half of this was paid to sub-brokers, so that the net brokerage amounted to 9.2 cents in 1916 and 15.8 cents

in 1917, an increase of 72 per cent. This increase was due principally to the increased prices of salmon in the latter year. When the operating expenses were deducted from the net brokerage, there remained an average net profit of 5 cents per case in 1916 and 7.5 cents per case in 1917. This represents an increase of 50 per cent, and shows that only a part of the increased brokerage was taken up by increased operating expenses. However, none of these three companies kept records which made it possible to make an entirely satisfactory distribution of operating expenses between their brokerage business and their merchandising business. In distributing these expenses, it was necessary to prorate between the two kinds of business on the basis of sales. This probably placed too heavy a burden on the brokerage department, and consequently the net profits on brokerage sales were probably larger than shown in the table.

Figures for earnings on the merchandising or buy-and-sell business are shown for only one company in 1916 and for two companies in 1917. The gross profits were larger than on the brokerage business in two out of the three instances, and as no sub-brokerage was paid, the net profit was relatively even larger. If a proper distribution of operating expenses could have been made, these figures might have been somewhat reduced, but would still have shown a greater profit than the brokerage business except for one company in 1917.

Two out of three of the average sales values in merchandising transactions were higher than the sales values shown in the brokerage business, and the lower value shown was due to a lower grade of fish.

CHAPTER VI.

ORGANIZATION AND CONTROL IN THE SALMON CANNING INDUSTRY.

Section 1. Advantages of large companies.

From a business point of view there are several advantages in large-scale production and also in large business units controlling several salmon canneries. Among these are reduction of local hazard, better credit facilities, ability to own a fleet, and ability to secure and to utilize the best trap locations.

A company with several canneries is able to equalize or absorb local losses without incurring a deficit for the season. The salmon run varies from year to year, not only from district to district, but within any one district. A large company may have a small run in one locality, thus depleting the supply of raw fish for one cannery, but it is not likely to have a small run in every locality. For instance, a company with six plants in 1917 lost \$115,000 at one plant and yet made a net profit on canning operations of over \$1,000,000. A cannery with only one plant, however, especially if in a location where fish run irregularly, may have very uncertain profits. One year his profits may be very large and the next year he may have a heavy loss.

A large amount of seasonal capital is needed, and in getting necessary banking support, the packer who can show great stability over a period of years has the advantage. A packer should also show considerable surplus, so as to be able to withstand a poor season. The large cannery has a distinct advantage over the small cannery, speaking generally, in the seasonal borrowing of capital. The large companies, with their large output and with capital or credit sufficient to carry the bulk of their pack for several months, also have an advantage in the marketing of their product. In recent years the Puget Sound canners have experienced more credit difficulties than the Alaska canners who have offices in San Francisco. These large Alaska companies have been able to build up strong banking connections.

A large cannery is able to own his own fleet and this is another advantage, for it gives him greater certainty of getting his supplies and enables him to move materials and labor from one plant to another as necessitated by the size of the salmon run in various localities. The large cannery is also able to spend more money for exploration or search for new trap locations, or to buy desirable locations from others. The control of such desirable locations gives such canners a decided advantage.

Section 2. The size of the companies and plants from a social point of view.

In the salmon canning industry centralization of control had reached such a point in 1917 that five companies, or groups of companies, with a unified control, in 1917, packed 53.4 per cent of the total output. The advantages enumerated on the preceding page—and not a lower cost of production—seem to have led to the growth of these large companies. The figures presented in Table 21, of Chapter III, gave the costs of production at typical plants having large and small outputs, located in Southeast Alaska, West Alaska, and the Puget Sound districts, and prove that the cost of production varied with the size of the pack in each plant rather than with the size of the company which controlled the plant. The reasons for this fact were mentioned in section 2 of Chapter III.

It seems reasonably clear, then, that the large companies have shown no exceptional efficiency and that their size has redounded to their own advantage rather than to that of the public. In this industry large and efficient plants rather than large companies, perhaps resulting from the consolidation of a number of small plants, would be socially desirable. A further centralization of control, therefore, could offer no economies which would balance the dangers of monopoly in the industry.

Section 3. The companies that dominate the industry.

The Alaska Packers Association¹ is the largest single producer of salmon and packed 1,346,292 cases in 1917. This corporation is controlled by the California Packing Corporation, through the ownership of 79 per cent of its stock. All the product sold in the United States (783,413 cases in 1917) is marketed through the California Packing Corporation on a commission basis.

The California Packing Corporation was sales agent for the MacLeay Estate Co., the Warren Packing Co., and the Columbia River Packers Association. This latter company packed 217,581 cases in 1917, but less than 2½ per cent of this pack was handled by the California Packing Corporation. In 1917 the California Packing Corporation also handled 61,575 cases for other companies. The Alaska Packers Association is affiliated with the Naknek Packing Co. through the common ownership of 57.6 per cent of its stock. The directors of the Naknek Packing Co. own 84.9 per cent of the stock in the Red Salmon Canning Co., the directors of the two companies being practically identical. The numbers of cases packed by these companies in 1917 were: Alaska Packers Association, 1,346,292; Naknek Packing Company, 87,732; Red Salmon Canning Company, 96,485; MacLeay Estate Co., 20,551; Warren Packing Co., 32,797. The total packed by these companies was 1,583,857 cases, or 18.4 per cent of the total year's pack.

It has come to the attention of the Commission that Elisha Walker, one of the controlling factors of Wilson & Co., has lately been made a director of the California Packing Corporation.

The Deming & Gould or Pacific American Fisheries group is the second most important factor in the industry. The Pacific American

¹ See Sec. 1, of Chap. I.

Fisheries' controls several other companies through the common ownership of stock, interlocking directorates or advances of money. The Hoonah Packing Co. is controlled through the ownership of 39.2 per cent of its stock by the Pacific American Fisheries Co. and 14.7 per cent more by Pacific American Fisheries stockholders. These two companies also have the same president and the Pacific American Fisheries advanced the Hoonah Packing Co. \$100,000 (as of Dec. 31, 1917). Four of the five directors of the Nelson Lagoon Packing Co. are also directors of the Pacific American Fisheries. At least 72 per cent of the stock is owned by Pacific American Fisheries stockholders and 24 per cent is owned by members of a large New York brokerage firm. The Nelson Lagoon Packing Co. was also advanced \$57,000 on its note by Deming & Gould. The Friday Harbor Packing Co. is controlled through the ownership of 25 per cent of its stock by the Pacific American Fisheries stockholders and an advance of \$5,128.75 (as of Dec. 31, 1917) has been made by the same company.

The number of cases packed by these companies in 1917 was as follows:

The Pacific American Fisheries Group:	Cases.
Pacific American Fisheries.....	434,265
Hoonah Packing Co.....	231,656
Friday Harbor Packing Co.....	53,560
Nelson Lagoon Packing Co.....	25,474
Total.....	744,955

The president of the Pacific American Fisheries is president of the brokerage firm of Deming & Gould, and with another member of his family owns all of the stock of this firm. The firm of Deming & Gould is a very large factor in the marketing of salmon and has the exclusive sales agency for ten canners, for whom it sold 623,790 cases in 1917. Deming & Gould in addition to its exclusive agency for the Pacific American Fisheries and its directly controlled companies, is the exclusive agent for the following companies: Point Warde Packing Co. (United States only), Copper River Packing Co. (United States only), Hillside Canning Co., Key City Packing Co., San Juan Canning Co. (advances were made to this company by Deming & Gould and by a stockholder of Pacific American Fisheries) and Bellingham Canning Co.

The number of cases packed by these companies in 1917 was as follows:

Pacific American Fisheries with controlled companies.....	Cases.
Point Warde Packing Co.....	744,955
Copper River Packing Co.....	38,907
Hillside Canning Co.....	48,328
Key City Packing Co.....	26,443
San Juan Canning Co.....	31,998
Bellingham Canning Co.....	34,654
Total number of cases packed by controlled companies.....	56,198

Total number of cases packed by controlled companies..... 981,483

This was 11.4 per cent of the total American pack in 1917.

In addition to the foregoing, the Valdez Packing Co. and the Nook-sack Packing Co. appear to be affiliated with this group. The former company has one and the latter company has two stockholders in com-

¹ The officers and directors of this company are reported to be as follows: E. B. Deming, president; A. W. Deming, vice-president; S. C. Scotten, treasurer; C. M. Mitchell, secretary; J. G. Snyder, second vice-president. The directors are: H. H. Hitchcock, E. B. Deming, S. C. Scotten, J. G. Snyder, George B. Harris, S. B. Steele, J. F. Harris, F. C. Letts, C. E. Wilcox.

mon with the Pacific American Fisheries. The Nooksack Packing Co. is in turn closely affiliated with the Thlinket Packing Co. The president and largest stockholder of the former is the president and a director of the latter.

Companies apparently affiliated with the Pacific American Fisheries:	Cases.
Valdez Packing Co.....	34,936
Nooksack Packing Co.....	55,790 $\frac{1}{2}$
Thlinket Packing Co.....	128,152 $\frac{1}{2}$
Total.....	218,879

The Booth Fisheries Company¹ is one of the largest canners of salmon. This company formerly owned the Northwestern Fisheries Co. and the Anacortes Fisheries Co., but these companies have now been consolidated with the parent company, being known as departments A and B. The Booth Co. also has a cannery at Astoria, Oregon. The output of these plants in 1917 was: Astoria plant, 33,468; department A, 472,750; department B, 251,559. This made a total of 757,777 cases, or 8.8 per cent of the year's output.

The Booth Fisheries Co. marketed a large part of its salmon through Gorman & Co., a salmon brokerage firm of Seattle. Gorman & Co. is the sole agent for the Astoria and Anacortes branches, except that part of the pack sold through the company's own organization, and along with Kelley-Clarke Co. have the same rights for the Northwestern branch (department A). Gorman & Co. also own 1,437 shares of the preferred stock of the Booth Fisheries Co., which, however, has no voting power.

Gorman & Co. was the exclusive agent for four other companies and also advanced three of them large amounts of money. These companies with the number of cases packed in 1917 were as follows:

	Cases.
West Coast Packing Co.....	46,406
Tenakee Fisheries Co.....	35,329
Straights Packing Co.....	33,038
Salmon Bank Canning Co.....	31,105
Total.....	145,878
Salmon handled during year for others.....	38,993

In 1917 a large part of the Northwestern Fisheries Co's. pack was marketed by the brokerage firm of Kelley-Clarke Co. of Seattle, which was the exclusive sales agency for four other American salmon canners. These companies with the number of cases packed in 1917, were as follows:

	Cases.
Alaska Sanitary Packing Co.....	42,838
Ainsworth & Dunn.....	71,803
Coast Fish Co.....	44,994
Cascade Packing Co.....	49,296
Total.....	208,931
Salmon handled during the year for others.....	85,209

The total 1917 pack of the Booth plants and of the companies for whom Gorman & Co. and Kelley-Clarke Co. were exclusive sales agents was 1,112,586 cases, or 13 per cent of the 1917 pack.

The firm of Libby, McNeil & Libby, which is controlled by Swift & Co. and the stockholders of which are large holders of the

¹ The officers of this company are K. L. Ames, president; P. L. Smithers, vice-president and treasurer, W. G. Weil, secretary and assistant treasurer; Wm. F. Cochran, assistant secretary. The following are directors: K. L. Ames, P. L. Smithers, W. G. Weil, W. J. Feron, Geo. F. Goodnow, A. M. Lawrence, Herbert C. Wright, and R. S. Futhill, jr.

preferred stock of Wilson & Co., purchased and took over the North Alaska Salmon Co. in November, 1916, which with plants previously owned made it one of the largest canners of salmon. In 1917 the eight plants of Libby, McNeil & Libby packed 435,077 cases, or 5.1 per cent of the year's output. Libby, McNeil & Libby sold the entire pack of the Taku Canning & Cold Storage Co., of Seattle, under the buyers' labels and received therefor a 10 per cent commission. Libby, McNeil & Libby thus had practically complete control of the output of this company. The Auk Bay Salmon Co. was controlled by officers and stockholders of the Taku Canning & Cold Storage Co. These two companies together packed 128,163 cases in 1917. These packs combined with Libby, McNeil & Libby's own output made a total of 563,240 cases, or 6.5 per cent of the year's output.

The fifth of the large groups is the Wilson-Wakefield group, dominated by Wilson & Co., of Chicago, who entered the salmon business in February, 1917. The Wilson Fisheries Corporation, 51 per cent of whose stock is owned by Wilson & Co. and 49 per cent by Lee H. Wakefield, an established factor in the canning and marketing of salmon, owns 995 out of 1,000 shares of the capital stock of J. L. Smiley & Co. and 245 out of 250 shares of the Alaska Herring & Sardine Co. Another company controlled by the Wilson Fisheries Co. is the Lisianski Packing Co., with a new plant said to be exceptionally well located on Stag Bay, Linianski Strait, Alaska. This plant was ready for operation in 1918.

Mr. Wakefield is president of the Wilson Fisheries Co.; president and a stockholder of J. L. Smiley & Co. and the Alaska Herring & Sardine Co.; owner of 498 out of 500 shares of the Apex Fish Co.; and is president and owner of 100 out of 300 shares of the stock of the Northland Fish Co., the other 200 shares being held by men who are directors in one or more of the companies mentioned above.

This merger of the Wilson and Wakefield interests, according to a leading trade journal,¹ is expected to have "far reaching results in the development of the Pacific fisheries."

Mr. Wakefield is also the owner of the brokerage firm of Wakefield & Co., which is the exclusive selling agency for the Apex Fish Co., the Pure Food Fish Co., the Shaw Island Packing Co., the Beegle Packing Co., the Northland Fish Co., the Liberty Packing Co., R. L. Cole, the Alaska Herring & Sardine Co. and for 49 per cent of the pack of the J. L. Smiley & Co. In 1917 Wakefield & Co. handled 28,358 cases of salmon for others than the companies mentioned.

The companies composing this group and the number of cases packed by them in 1917 were as follows:

	Cases.
J. L. Smiley & Co.....	114,863
Alaska Herring & Sardine Co.....	24,330
Apex Fish Co.....	110,975
Northland Fish Co.....	18,632
Pure Food Fish Co.....	33,963
Beegle Packing Co.....	33,743
Shaw Island Packing Co.....	7,292
R. L. Cole.....	885
Liberty Packing Co.....	9,021

Total number of cases packed or controlled by Wilson-Wakefield interests..... 353,704

¹ Pacific Fisherman, January, 1918, p. 95.

This was 4.1 per cent of the total pack in 1917.

These five groups (or four if Libby and Wilson are considered as one group) in 1917 packed 4,594,870 cases or 53.4 per cent of the total American output, as follows:

	Cases.	Per cent of total pack.
Alaska Packers Association and affiliated companies.....	1,583,857	18.4
Deming & Gould—Pacific American group.....	981,483	11.4
Booth Fisheries, Gorman & Co., and Kelley-Clark Co. group.....	1,112,586	13.0
Libby, McNeil & Libby and affiliated companies.....	563,240	6.5
Wilson-Wakefield group.....	353,704	4.1
Total.....	4,594,870	53.4

The number of cases of salmon handled during 1917 by the selling agencies included in the above groups for companies not included in these groups was 214,135, which was equivalent to 2.5 per cent of the 1917 pack.

There are several other smaller groups of affiliated companies, but the above are the largest and most important in the industry. The control of over 53 per cent of the production of an essential food by five groups of companies shows great concentration of control, and, as has been shown (Section 1, Chapter IV), two of these companies make the prices at which the great majority of the packers dispose of their product.

Section 4. Relation with outside interests.

Several of the large Chicago meat packers are important in the salmon canning industry. The interests of Libby, McNeil & Libby (Swift & Co.) and of Wilson & Co. have already been mentioned. The Cudahy Brothers Co. and Armour & Co. appear to be closely affiliated with large salmon canning companies. Among the stockholders of the Pacific American Fisheries appear the names of members of the Cudahy family, of the Cudahy Brothers Co., The Western Grocer Co., of Chicago, is a stockholder, and its president, Mr. F. C. Letts, is both a stockholder and a director in the Pacific American Fisheries Co. The Booth Fisheries Co. was reorganized in 1909, and the reorganization committee was composed of F. C. Letts and P. A. Valentine, of Armour & Co. Mr. Letts was the first president of the reorganized Booth Fisheries Co. These facts show that the Booth Fisheries Co. formerly, at least, was closely connected with both the Pacific American Fisheries Co. and Armour & Co. Two of the stockholders of the Pacific American Fisheries Co. are connected with two of the large Chicago wholesale grocery firms. S. B. Steele is president of the Steele, Wedeles Co., and C. E. Wilcox is head of the canned goods department and a director of Sprague, Warner & Co.

Evidence shows that the California Packing Corporation (Alaska Packers Association) works in harmony with Armour & Co., of Chicago, keeping the Chicago firm advised as to market conditions, etc., although no joint ownership of the Armour and the California Packing Corporation was found. One of the four bankers, however, who exerts substantial control over Wilson & Co., is a director of the California Packing Corporation.

CHAPTER VII.

LEGISLATION TO PROTECT THE SUPPLY OF SALMON.

Fears have long been expressed that the supply of salmon would soon become seriously depleted. As far back as 1889 Congress passed a law against barricading and fencing streams in Alaska. The Secretary of the Treasury, in 1900, ordered that all Alaska salmon cannery construct and operate private hatcheries. This seems to have been an impossible requirement so far as the small packers were concerned, and was rescinded in 1906. Some of the large companies, however, operate hatcheries. In 1917 there were four salmon hatcheries operated by American companies in Alaska. In the same year the United States Bureau of Fisheries operated 22 salmon hatcheries, of which 2 were in Alaska; 46 hatcheries were operated by the Pacific Coast States; 11 were operated by Canada; and 1 was operated by the Province of British Columbia. These hatcheries conserve the supply of fish by protecting the eggs from being devoured by fish or from being destroyed in other ways. In addition, some hatcheries rear the young fish until they are partially grown. Most of the young fish are released when in the "fry" stage or when about 30 days old. However, in recent years many fish have been reared in nursery ponds until therefore large enough to have an even better chance for their lives than if released in the fry stage. Such fish are known as fingerlings or yearlings. The output of the salmon hatcheries increased until, in addition to eggs, a total of 535,401,818 fry and 18,245,575 fingerlings, yearlings, or adults were distributed in the streams of the Pacific Coast of North America in 1915. In addition, a large number of eggs and fry were shipped to other sections.

Wood River, which empties into Nushagak Bay, in West Alaska, has been set aside as a breeding preserve for salmon. A rack has been constructed across the entrance, and the fish are counted as they pass through a tunnel in this rack. The number of salmon that have passed into the Wood River has decreased, as is shown by the following figures: 1908, 2,600,655; 1909, 893,244; 1915, 259,341; 1916, 551,956. (Figures from Bureau of Fisheries.)

Besides the inroads made upon the salmon supply by fishing operations and natural enemies, the pollution of the streams, the construction of dams without adequate fishways, and the failure to place screens at the head of all irrigation ditches connecting with the streams on the Pacific Coast also present grave dangers.

Two bills for the protection of the salmon and the regulation of the fishing industry in Alaska have been introduced and are now (July, 1918) pending before Congress. One of these bills, known as the Sulzer bill (H. R. 9092), is said to be indorsed by the people of Alaska and is opposed by the salmon cannery. The other bill, known as the Alexander bill (H. R. 1753), is based upon data gathered by Government committees, and is indorsed by the cannery and the Bureau of Fisheries.

The Sulzer bill, in order to protect the salmon, abolishes the weekly closed day (Sunday) and in lieu thereof provides that all salmon fishing and canning operations shall close in Bering Sea on August 1, in the Gulf of Alaska on August 15, and in southeast Alaska on September 1. The canners object to this provision for two reasons: First, they claim that it would necessitate fishing on Sunday, to which they say the fishermen are opposed; second, they claim that the abolition of the weekly closed period would lead to an exhaustion of the supply of salmon. The Alexander bill retains the present weekly closed day.

Both bills include regulations prescribing the size of streams in which commercial fishing may be carried on, the size of nets, seines, and traps which may be used, the size of passageways which must be left between fixed fishing appliances. The provisions of this kind in the two bills are similar, but those in the Sulzer bill appear to be designed to restrict operations somewhat more closely than those in the Alexander bill. Some canners oppose certain details in each bill as being impracticable or as being unfair to the canners in certain localities.

The bills differ materially with regard to the rights of the canners to maintain trap and net locations. At present, leases for such locations in Alaska are only good for one year. Theoretically, all such locations are open to the first comer each season. Practically, however, the canners and fishermen observe "squatter sovereignty" and the canner who occupies a trap or net location every year seldom has it "jumped." Canners with desirable trap locations undoubtedly enjoy a distinct advantage over those who have less desirable sources of raw fish. The canners would like to have a greater security in their rights to such locations, and would like to hold locations which are not fished every year. The Sulzer bill provides for five-year leases which may be renewed at the end of each five-year period. The Alexander bill provides for a 15-year lease, at the end of which period the location reverts to the United States and may be leased to any applicant.

Fears have been expressed that under a system of long leases the good locations, which are limited in number, would all pass into the possession of a few large canners, and that this would prevent new companies from entering the industry. (See Chapter VI.) The small canners, however, have expressed no fear to the Commission that the long leases provided for by the Alexander bill would lead to monopoly.

The Sulzer bill provides elaborate machinery for its enforcement, which the canners say would entail unnecessary expense. The Alexander bill leaves the enforcement of the law to the Secretary of Commerce.

The Sulzer bill levies a tax of \$0.01 for each salmon caught. The canners say this tax is altogether too high. The Alexander bill provides license fees for the operation of nets, traps, wheels, etc., and a production tax for each case packed as follows: \$0.06 for red and king, \$0.05 for medium red and steelhead, \$0.04 for pink and chum.

The Sulzer bill gives the Territory of Alaska the right to levy additional taxes or to appeal, alter, or amend the law in any respect. The canners are opposed to giving the Territory of Alaska any authority to regulate the industry, and favor leaving all control with the United States Government, as the Alexander bill provides; while many of the people of Alaska believe that the Alexander bill would unduly deprive

that Territory of control over its salmon resources and tend to deliver those resources into the hands of a few large corporations.

The Alexander bill provides, in section 6, the following:

That any person occupying, or desiring to occupy, any location where it may be lawful to construct a pound net in the waters of Alaska shall cause such location to be accurately surveyed by a competent engineer, unless the survey thereof has already been made, in which event such existing survey may be used, and shall cause three maps to be made of such location from the actual survey thereof, which shall contain a plat and description of said fishing location for its ascertainment and identification on the premises. Said maps shall also contain a certificate by the claimant, or by his agent or attorney, stating that he claims the fishing location shown thereon, specifying the date and number of the license under which the same is held, or the fact that application has been made therefor. Such maps, with the certificate thereon, shall be filed in the office of the commissioner of records in the districts wherein the location is situated, which commissioner shall indorse thereon the hour and date of filing, and shall forward one of these maps to the Secretary of Commerce and another to the Pacific Coast office of the Bureau of Fisheries. From and after the date of filing in the office of the commissioner of records, such maps shall constitute full and complete notice that the locator has complied with all the provisions of this act and that such location is owned, held, occupied, and claimed by the person designated thereon as the claimant. From and after the filing of such maps the claimant of the fishing location shown thereon, his heirs, administrators, executors, successors, and assigns shall have the right to hold, occupy, fish in such location, to renew the license therefor, and to mortgage, sell, and transfer the same during the time that he or they in other respects shall comply with the law pertaining thereto: *Provided*, That it shall not be necessary to file any map or plat of any fishing location before January first of the calendar year next after this act takes effect.

It shall not be necessary to file any map or plat of any fishing location in any case where any map or plat has heretofore been filed with the Secretary of Commerce and the commissioner of records in the district in which the location is situated. All the pound net or other fishing locations lawfully occupied during the calendar year next preceding the passage of this act shall continue valid: *Provided*, That if any owner or locator shall fail to construct and operate his appliance in a bona fide manner for the three consecutive years covered by his license, the location shall be deemed abandoned.

Clearly the trend of such a measure would be to place securely in the hands of the present occupiers the pound-net locations now operated, and would facilitate the acquisition of long-time rights in new locations. While a reasonable security of tenure is desirable, it is doubtful if sufficient limitations are contained in the Alexander bill or similar measures. In the first place, no right should be granted to hold a net location unused for more than a short period; and, in the second place, the maximum period for which a location should be held by a given interest, whether operated or not, should not be so long as 15 years. It would seem reasonable, and appears to be in accord with the ideas of those who, while familiar with the problem, are unbiased, that the maximum period for which a location may be held should be limited to about five years, and that the holder be required to operate the location at least as often as every other year and three years out of the five.

CHAPTER VIII.

SUGGESTIONS FOR THE IMPROVEMENT OF CONDITIONS IN THE SALMON CANNING INDUSTRY.

Only a part of the recommendations made by the Commission in its general report on Canned Foods¹ have any application to the salmon canning industry, the nature of which is in many respects different from the other branches of the canning industry.

General recommendations.—The recommendations in the Commission's general canned-foods report on (1) economy in boxes, (2) the further standardization of grades, (3) the regulation of the use of labels, and (4) the restriction of unnecessary reselling, however, should be considered in any regulation of the salmon industry.

Prevention of future monopoly by the dominant interests.—The recommendations in the general report, which deal with the control over price and with the tendencies toward monopoly, are of special interest in this connection. In the canning of fruits and vegetables, on account of the absence of concentration in any one locality and the small amount of capital required to start a new undertaking, competition naturally tends to be free. Prices have been maintained by the associations and not by the consolidation of companies and by the centralization of control. This is not true of the salmon industry. In this industry the limited number of valuable locations and the large amount of capital needed for an undertaking have led to an important degree of centralization of control.

Pending before Congress at present are two bills for the regulation of salmon fishing in Alaska. These bills are the Alexander bill and the Sulzer bill. The principal point at issue between the advocates of the two bills concerns the administrative authority. Both of these bills contain many excellent provisions. The Sulzer bill gives the Territory of Alaska the right to alter or amend the law in any way, while the Alexander bill vests the administration of the fisheries in the hands of the United States Bureau of Fisheries.

It would seem to be in the interest of good administration that the United States Bureau of Fisheries should have the same control over Alaskan fisheries that it has elsewhere in the United States. Aside from the question as to who would best administer a law regulating the industry, however, it is the Commission's judgment that no one should be allowed to hold for any unreasonable period the right to locations which are unused, for this might easily lead to speculation and to monopoly. It seems clear that the title to any location left unfished for two successive years should be forfeited. It also seems that all parties should have the same opportunity to secure the rights to such locations. Lessees should not be allowed to renew their leases for successive periods in such a way as to keep all others out, or so as to be able to monopolize such locations. Newcomers should have the chance to secure such locations by competitive bidding or in other

¹ General Report Canned Foods: Federal Trade Commission, Washington, D. C., May, 1915.

ways. The 15-year tenure of licenses, provided for in the Alexander bill represent probably too long and too complete a control of the valuable trap locations.

Additional legislation to protect the supply of salmon.—The need for additional protection for the salmon fishing industry appears urgent. In this respect the provisions of the Sulzer and Alexander bills seem to be satisfactory.

Agreement between Canadian and American fishermen.—There is a need for an agreement with the Dominion of Canada for a joint regulation of fishing in Puget Sound. During the war an agreement fixing uniform prices to be paid for the various species of salmon caught in Puget Sound seemed to be advisable.

Limitation on maintenance of nominally separate sales agencies.—The second recommendation in the Commission's general report on the canning industry, which is of particular interest in this connection, is the "limitation on maintenance of nominally separate sales agencies." It reads as follows:

It is common in the canned-foods business, and notably so in the case of canned fish, to have the entire pack of canneries handled by exclusive sales agents, their exclusive field covering either a given locality or the whole market. In many cases the packers or stockholders in the canning companies are interested in the selling agency. In some cases the two organizations are identical. In such cases the costs of the selling agent should be added to the cost of the canning company, and the profits made by the selling agent should be regarded as intercompany profits and not included in the canning companies' costs. A commission of 5 per cent, which is often received by sales agencies, has yielded a very large profit to such agencies, and where they are virtually identical with the manufacturing company, such profits are not properly included in cost."

In the salmon-canning industry, it seems that the ordinary brokerage of 5 per cent could be greatly reduced by the canners forming direct connections with eastern brokers and paying them only the ordinary brokerage of 2½ per cent. The Pacific Coast brokers, who receive the 5 per cent commission, pay half of it in many cases as sub-brokerage to eastern brokers, as very few of the Pacific Coast brokers have sales organizations extending over the country. Many canners have a firm member act as sales agent, and so pay only 2½ per cent or 3 per cent brokerage to outsiders. It does not seem to be economical for the ordinary salmon canner to maintain an expensive sales department and to sell directly to the wholesale grocers, but it does seem practical for the medium and large sized canners to establish connections with eastern brokers and to reduce their marketing expense almost by half. Such a practice should lead to lower prices to the consumer.

Announcement of opening prices.—One of two men usually sets the opening price of canned salmon. The highest figure set ordinarily prevails. Inasmuch as selling prices should generally maintain a reasonably close relation to cost, the advisability of the announcement of any opening price should be questioned. In any case, the present custom of allowing one or two leading interests to dominate the price situation is fraught with danger to the consumer.

S. A. P. Sales.—It seems very doubtful if the S. A. P. (subject approval of price) sales, so common in the trade, really serve any good purpose. They may easily lead to speculative buying on the part of the jobbers, and they do not protect the canner, as he is not sure of his sales until these contracts or options are confirmed or closed

in the late summer. It seems that such sales could be greatly limited without any injury being done the canners and with much benefit to others.

Prices of cans.—The prices paid for cans by different canners varied considerably. While this was due in part to the fact that some made their own cans, it was partly due to differences in prices charged by the large manufacturers. No reason was found which justified the can manufacturers in charging such different prices for the same size of can to different canners, except as such differences arose out of differences in the times at which contracts were made. The exclusive long term contracts exacted from the canners by the large can companies bind the canners to buy all of their cans from the can company making the contracts during a period of years (generally 5). Such contracts are likely to be abused and should be discontinued.

Uniform accounting.—The salmon canners greatly need instruction in accounting; in the light of the reports submitted by the salmon packers it is clear that better cost accounting methods should be installed. In this connection, attention is called to Report¹ of the Federal Trade Commission on Canned Foods, in which it is stated "that while it is clearly desirable that each producer should accurately know his own costs, it is very doubtful if any public interest is served by the producers having meetings to discuss each other's costs."

¹ Government Printing Office, Washington, 1918.

INDEX.

	Page.
Alaska.....	7, 13
Alaska Packers Association.....	13, 49, 70
Alexander bill.....	11, 75-77
Armour & Co.....	74
Bonds.....	58, 59
Booth Fisheries Co.....	72
British Columbia, Canada.....	14, 31
Brokers.....	21
Location of.....	22, 56
Rates of brokerage.....	9, 22, 26, 28
Control of canners.....	22, 57
Merchandising.....	56
Investment of.....	66
Canned food.....	67
Distribution of expenses.....	68
Brokers' prices.....	55, 57
California Packing Corporation.....	70
Catching salmon, method of.....	18
Cans. (See Cost analysis).....	35, 39, 80
Capitalization.....	58
Central Alaska.....	34, 60
Channels of trade.....	24
Chinese labor.....	13
Coastal streams.....	33
Columbia River.....	13, 17, 33
Competition:	
In the export trade.....	31
In the salmon industry.....	13, 20, 49, 57, 74
Consolidation of the first canners.....	13
Consumption of canned salmon.....	7, 31
Countries producing canned salmon.....	31
Contracts for sale of salmon.....	54, 55
Centralization of control.....	70
Cost:	
Difficulty on finding.....	35
Compilation of.....	35
Analysis of.....	37, 38
Items of.....	35, 36
Sectional.....	38
Range of cost.....	40-43
By grades of fish packed.....	42-44
Of canning by different size cans.....	44-45
Of large and small companies.....	46-47
Of large and small plants.....	46-47
Cudahy Packing Co.....	74
Deming & Gould.....	49, 70, 71
Depreciation (see Cost analysis).....	36, 40
Distribution of canned salmon.....	21, 22, 54
Eagle Cliff.....	13
Expense.....	36, 47
Export trade.....	31, 32
Factory swells (see Cost analysis).....	36
Fish, difficulty of securing.....	20, 21
Food value of salmon.....	31
Founding of the salmon-canning industry.....	13
Fraser River.....	16
Future sales.....	54
General expenses.....	36
Gorman & Co.....	72

	Page.
Grades of salmon:	
Cost.....	42-44
Waste in canning.....	39
Opening prices.....	49
Average price.....	54
Growth of the industry.....	13-14
Hapgood, Andrew S.....	13
Hazard.....	36
Hatcheries.....	75
History of the salmon canning industry.....	13
Hume, Wm. and G. W.....	13
Investment:	
Borrowed funds, stocks, and bonds.....	58
Average per company.....	60
Average per case packed.....	60
Canners profit on.....	61
Brokers profit on.....	64-67
Items of cost.....	37, 38, 39, 40
Japan.....	31
Jobbers (<i>see</i> Wholesale grocers).....	21, 22, 24, 28
Kelley-Clarke Co.....	72
Labels (<i>see</i> Cost analysis).....	35
Packers, jobbers, and brokers.....	28, 30
Labor (<i>see</i> Cost analysis).....	35, 39, 40
Large-scale production.....	69
Legislation to protect the supply of salmon.....	19, 75, 76
Libby, McNeil & Libby.....	73
Licenses.....	19
Nets.....	18
New York.....	32, 49
Nushagak Bay.....	75
Opening prices:	
Average for 1916-17.....	54
For different grades.....	50, 52, 53
Statistics of.....	50, 51, 52
Outside rivers.....	19
Overhead expense (<i>see</i> Cost analysis).....	36, 40
Pacific American fisheries.....	71, 72
Pack in cases.....	32
Pack of different grades.....	34
Ports, for export shipping.....	32
Packers, meat, relation of to salmon industry.....	74
Prices (<i>see</i> Opening prices):	
Importance of opening prices.....	49
Factors in naming.....	49
Uniformity of opening prices.....	49, 52, 53
Dates for naming.....	54
Brokers.....	55, 56, 57
Profits:	
Packers.....	61
On investment.....	61
Per case packed.....	61
Per case sold.....	10, 64
By districts.....	63
Cost of sales.....	64
Puget Sound.....	13, 32, 33, 49, 52
Raw fish (<i>see</i> Cost analysis).....	35, 38
Recommendations.....	78-80
Sacramento.....	13
Sales:	
Future.....	54, 55
Spot.....	55
S. A. P.....	54, 55
Merchandising.....	55, 56
Sales agents.....	21, 22, 26, 28

	Page.
Salmon (raw fish):	
Kinds and grades.....	14, 17
Rise in price.....	20
Competition in securing.....	21
Cost (<i>see</i> Cost analysis).....	21
San Francisco.....	32, 69
Seattle.....	32
Seines.....	18
Selling expense (<i>see</i> Cost analysis).....	47
Shooks—boxes (<i>see</i> Cost analysis).....	35, 40
Siberia.....	31
Spoils (<i>see</i> Factory swells).....	36
Stocks:	
On hand.....	49
Carried over.....	64
Sulzer bill.....	11, 75, 76
Swift & Co.....	73, 74
Traps:	
Locations.....	18, 76
Valuation.....	18
Licenses.....	19
Operations of.....	19, 76
Advantages of desirable.....	11, 18, 69
Transportation of men and supplies.....	35, 40
Wakefield & Co.....	73
Wakefield, Lee H.....	73
Washington.....	19
Waste in canning.....	39
Wholesale grocers overbuying.....	54
Wilson & Co.....	73
Wilson Fisheries Co.....	73
Wilson-Wakefield.....	73
Wood River.....	75

ADDITIONAL COPIES
OF THIS PUBLICATION MAY BE PROCURED FROM
THE SUPERINTENDENT OF DOCUMENTS
GOVERNMENT PRINTING OFFICE
WASHINGTON, D. C.
AT
10 CENTS PER COPY

COLUMBIA UNIVERSITY LIBRARIES



0041402731

D310

Un 322

U.S. Fed. Trade Comm.

Food investigation ...

OCT 18 1946

Bertha Paul

10/25 659 1625T

MSH 03404

NEH

OCT 07 1994

JUN 26 1984

Date Due

OCT 18	1946	10/25	

Ⓜ



**END OF
TITLE**