AN ANALYSIS OF MICHIGAN'S FROZEN FOOD LOCKER PLANTS

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This is to certify that the

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AN ANALYSIS OF MICHIGAN'S FROZEN FOOD LOCKER PLANTS

By

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A THESIS

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ROBERT CHRISTIAN KRAMER

TABLE OF CONTENTS

TABLE OF CONTENTS - Cont'd

TABLE OF CONTENTS - Cont'd

LIST OF TABLES

LIST OF TABLES - Cont'd

LIST OF ILLUSTRATIONS

LIST OF ILLUSTRATIONS - Cont'd

CHAPTER I

INTRODUCTION

The locker plant movement started in Chico, California in 1903 when the Chico Ice and Cold Storage Company rented an upstairs cold-storage space to local merchants for storing eggs, apples, and other produce. In 1908 it extended this service to farmers for the storing of meat in boxes. Beginning in 1910 individual family locker compartments were installed and rented at the Chico plant and in a plant in Crete, Nebraska.

The frozen food locker industry began in 1917 when an ice plant in Centralia, Washington furnished freezer-storage space to farmers and butchers for storing game and home-killed meat. The locker movement spread rapidly in the Pacific Northwest and lockers were used extensively after World War I. The first locker plants furnished no processing services; the patrons prepared and packaged their own products and placed them directly in the locker.

The locker industry expanded eastward in the 1920's and 1930's; nevertheless, in 1937 most of the locker plants were west of the Mississippi River. During the middle 1930's the modern locker plant, with its sharp-freezer and meat-processing service, was born in the Midwest.

L. B. Mann recently stated that there were less than 1,300 plants in the United States in 1938, but that the

number had grown to an estimated 10,000 in February, 1948.[1/] These 10,000 plants have a capacity of processing and storing annually over 1,600,000,000 pounds of food for approximately 15,000,000 persons. The total investment in these locker plants is estimated at approximately $225,000,000 with an annual gross income of about $715,000,000.

Michigan entered the frozen locker field in 1938, and by the end of that year there were six plants in operation. About the same number of plants were opened each successive year and at the end of 1942 there were thirty-two plants in the state. During and after World War II there was a tremendous increase in the growth of the locker industry and in May, 1948, there were 375 plants in Michigan (Figure 1).

Seventy-five percent of these 375 plants were located south of the Bay City-Muskegon line, and ten percent were located in the Upper Peninsula. The smallest plant in the state had thirty lockers and the largest had 3,500. It is estimated by the author that the total investment in the 375 plants was over $12,000,000 and that the total number of lockers in the state was over 215,000. These 375 plants had a capacity of processing and storing annually approximately

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1/ L. B. Mann, The Locker Plant - A Factor in Marketing, a talk given at the Annual Convention of the Association of Southern Agricultural Workers, Washington, D.C., February 13, 1948. (Mimeographed)

L. B. Mann is Senior Agricultural Economist in the Farm Credit Administration. He has made studies and surveys of locker plants for the last ten years.

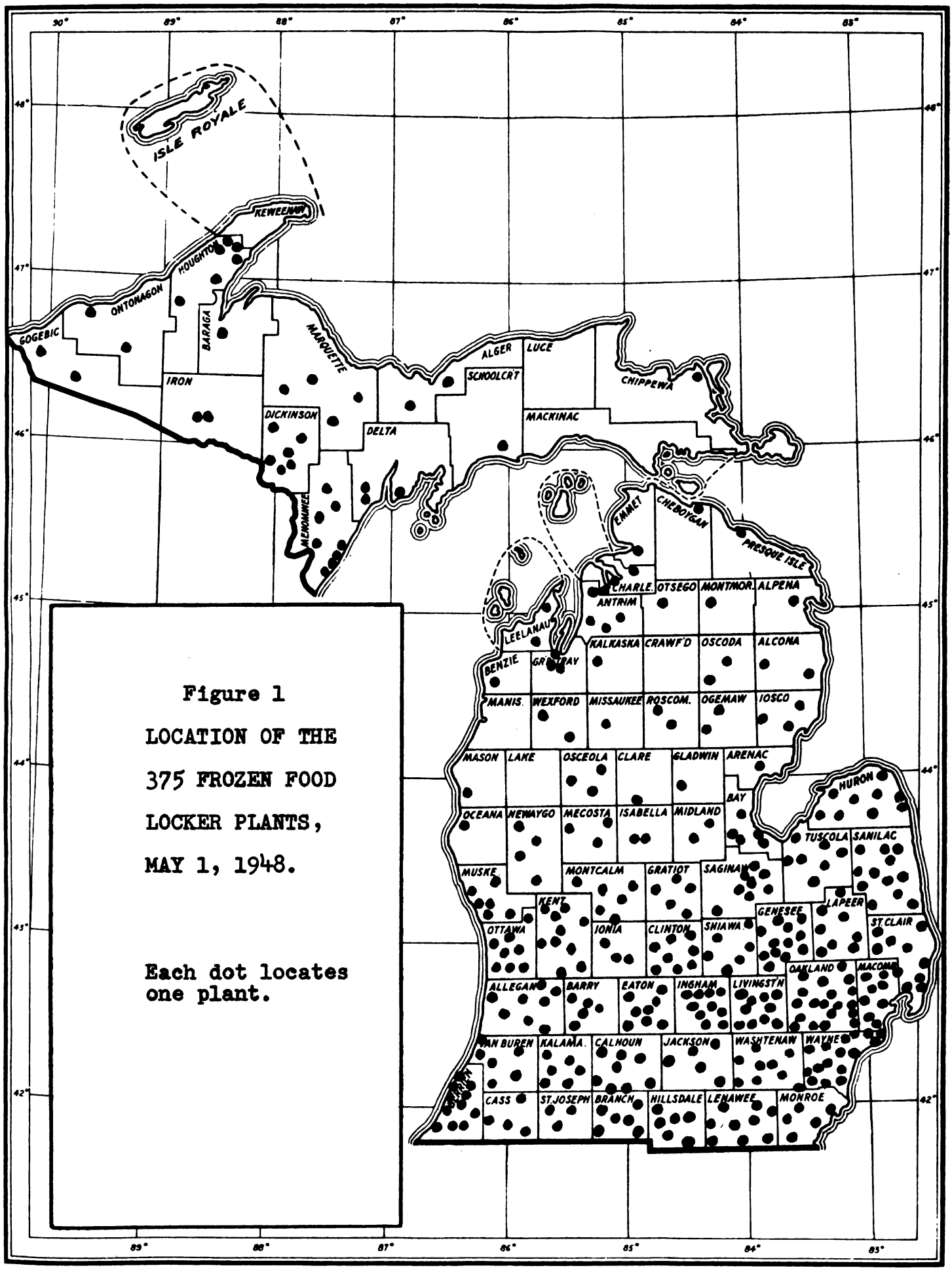

Figure 1

LOCATION OF THE 375 FROZEN FOOD LOCKER PLANTS, MAY 1, 1948.

Each dot locates one plant.

85,000,000 pounds of food if the lockers were filled twice each year.

Purposes of the Study. The purposes of this study were to determine the extent of the development of locker plants in Michigan as local markets for meat, to ascertain the present practices in the operation of these plants, and to inquire into the possibilities and limitations of locker plants in increasing their services to their communities.

Utility of the Study. Although there have been locker plants in the State of Michigan for the past ten years, there has been no previous state study of their operations. The existence of locker plants in most counties of the state created a large potential local market for livestock. How had these locker plants affected local slaughter of livestock? Where did locker plants sell their bones, suet, and offal items? Did the locker plants act as wholesale distributors of meats? What products were retailed by locker plants? Answers to these questions and to other similar questions were attempted in this study.

This study was used as a part of the regional study entitled, "The Place of Frozen Food Locker Plants and Home Freezer Units in the Slaughtering, Processing, Distribution, and Consumption of Meats." The participating states were in the North Central region of the United States. The schedule or questionnaire used in the study was prepared by the technical committee of the regional committee.

Sources and Scope of Data. The historical data were obtained from Farm Credit Administration publications. The names, locations, and sizes of the locker plants were obtained from The Bureau of Marketing and Enforcement in the Michigan Department of Agriculture. The detailed data were obtained from personal interviews of managers and owners of a representative random sample of the locker plants in the state.

Many locker plant owners and managers did not keep detailed records. When detailed records were not kept, estimates had to be used. The use of these estimates prohibited exact findings; however, it was felt that the findings were fairly representative of the true picture. For example, some plant managers did not know exactly how many pounds of beef were processed, but they knew the number of cattle processed. The total number of pounds was obtained by multiplying the estimated average weight of the cattle by the number of cattle. Reasonably accurate estimates of income from various sources were used when exact figures were unavailable.

Sampling Procedure. The questionnaire used in this study was so comprehensive that it was deemed desirable to personally interview owners or managers of locker plants to obtain the desired information. Since funds were limited, it seemed best to visit only a small percentage of the total number of plants in the state. The data on a complete year's

operation was wanted from each plant visited, so only those plants which had been in operation under the same management for a complete year were considered. The calendar year 1947 was used for this study and the field work was done in March, 1948.

Of the 330 plants which were in operation on January 1, 1948, only 257 had been in operation under the same management for the calendar year 1947. These 257 plants were separated into groups or cells according to their location in one of the seventeen type-of-farming areas (Figure 2), and according to their size. Three size groups were used. The small group consisted of those plants which had less than 401 lockers; the medium group had between 400 and 751 lockers; and the large group had over 750 lockers. Table I shows how the 257 plants were thus divided. The plants were then numbered from 1 to 257 across and down the table within each cell.

Table I shows that there were nine plants in Type-of-Farming Area 1 and Size Group 1, and that there was only one plant (#257) in Type-of-Farming Area 17 and Size Group III. There were no plants in some of the cells. One can also notice that the number 1 is in the upper left corner of the table and number 257 is in the lower right corner. Each number in the table identifies one of the 257 plants.

It was considered desirable to take a sample representing approximately fourteen percent of the plants; hence one

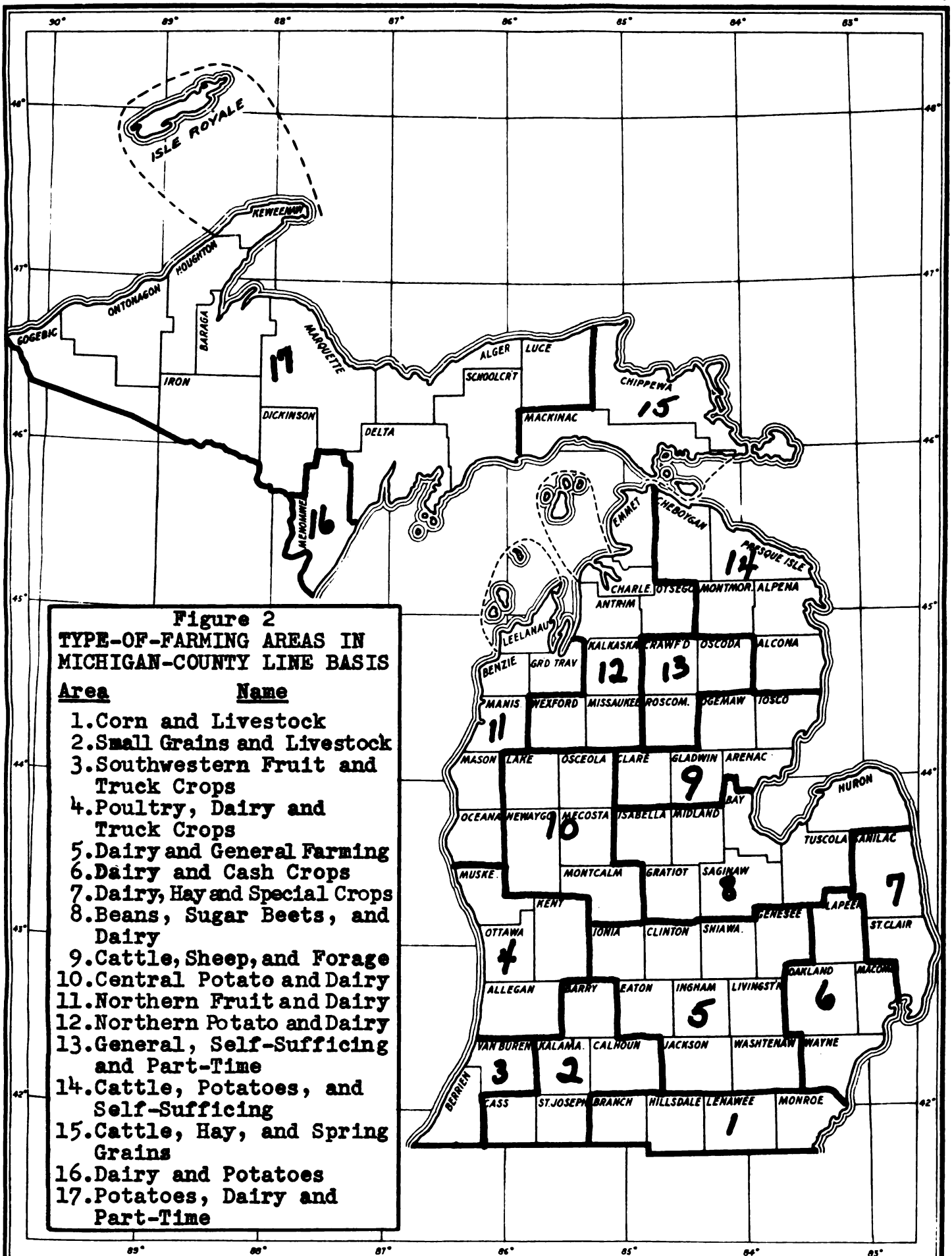

Figure 2
TYPE-OF-FARMING AREAS IN MICHIGAN-COUNTY LINE BASIS

Area	Name
1.	Corn and Livestock
2.	Small Grains and Livestock
3.	Southwestern Fruit and Truck Crops
4.	Poultry, Dairy and Truck Crops
5.	Dairy and General Farming
6.	Dairy and Cash Crops
7.	Dairy, Hay and Special Crops
8.	Beans, Sugar Beets, and Dairy
9.	Cattle, Sheep, and Forage
10.	Central Potato and Dairy
11.	Northern Fruit and Dairy
12.	Northern Potato and Dairy
13.	General, Self-Sufficing and Part-Time
14.	Cattle, Potatoes, and Self-Sufficing
15.	Cattle, Hay, and Spring Grains
16.	Dairy and Potatoes
17.	Potatoes, Dairy and Part-Time

Table I - Distribution of Michigan's 257 Eligible Locker Plants According to Size and Type-of-Farming Areas, March, 1948.

Sizes	I	II	III
T.O.F. Areas	(30-400 lockers)	(401-750 lockers)	(over 751 lockers)
1	1-9 (1)[2]	10-16[3] (1)	17,18 (0)
2	19-22 (1)	23-31 (1)	32,33 (0)
3	34-37 (1)	38-44 (1)	45-47 (0)
4	48-62 (3)	63-70 (1)	none (0)
5	71-94 (3)	95-119 (4)	120-125 (1)
6	126-135 (1)	135-151 (2)	152-161 (2)
7	162-164 (0)	165-171 (1)	172 (0)
8	173-177 (1)	178-194 (2)	195-200 (1)
9	201-204 (1)	205-207 (0)	208 (0)
10	209-216 (2)	217-222 (0)	none (0)
11	none (0)	223-226 (1)	227 (0)
12	228-230 (1)	231-234	none (0)
13	none (0)	none (0)	none (0)
14	235-236 (0)	237 (1)	238 (0)
15	239 (0)	none (0)	none (0)
16	240-244 (1)	none (0)	none (0)
17	245-252 (1)	253-256 (0)	257 (0)

2/ The number in parentheses in each cell is the number of plants that was chosen from that cell to compose the representative random sample. The sum of the numbers in the parentheses is thirty-six.

3/ The numbers not in parentheses in each cell, i.e. 1-9, 10-16, etc., designate the number of locker plants falling in each cell and the number assigned these plants.

plant in seven was selected. After the number of plants to be taken from each cell was found, a book of random numbers was used to determine which plant or plants in the cell was or were to be visited. Again referring to Table I and to the cell representing T.O.F. Area 1 - Size I, the number in parentheses shows that one plant fell there. The numbers in that cell were 1 through 9 and the book of random numbers was used to find which one of the nine numbers was to be used in the study.

Starting with number six and choosing every seventh number a sample of 36 plants was obtained. This sample of 36 plants is very close to 14% of 257. As a check on the representativeness of the sample, adding the numbers in parentheses either horizontally by T.O.F. areas or vertically by Size Classifications and dividing by the total number of plants in that Area or Size Group, a percentage figure of approximately fourteen was obtained. Figure 3 shows the location of the 257 eligible locker plants and the location of the 36 plants in the sample.

Definition of Terms. (a) Frozen Food Locker Plant: As used in this thesis a frozen food locker plant means any place artificially cooled to or below a temperature of forty-five (45) degrees above zero Fahrenheit in which articles of food are sharp frozen and stored in lockers, such lockers being rented to the public.[4/]

4/ This definition was taken from the Rules and Regulations Governing Frozen Food Locker Plants published by the Bureau of Marketing and Enforcement which is in the State of Michigan Department of Agriculture. The actual temperatures prescribed for the Chill Room, Locker Room, and Sharp Freeze Room are given in their definitions.

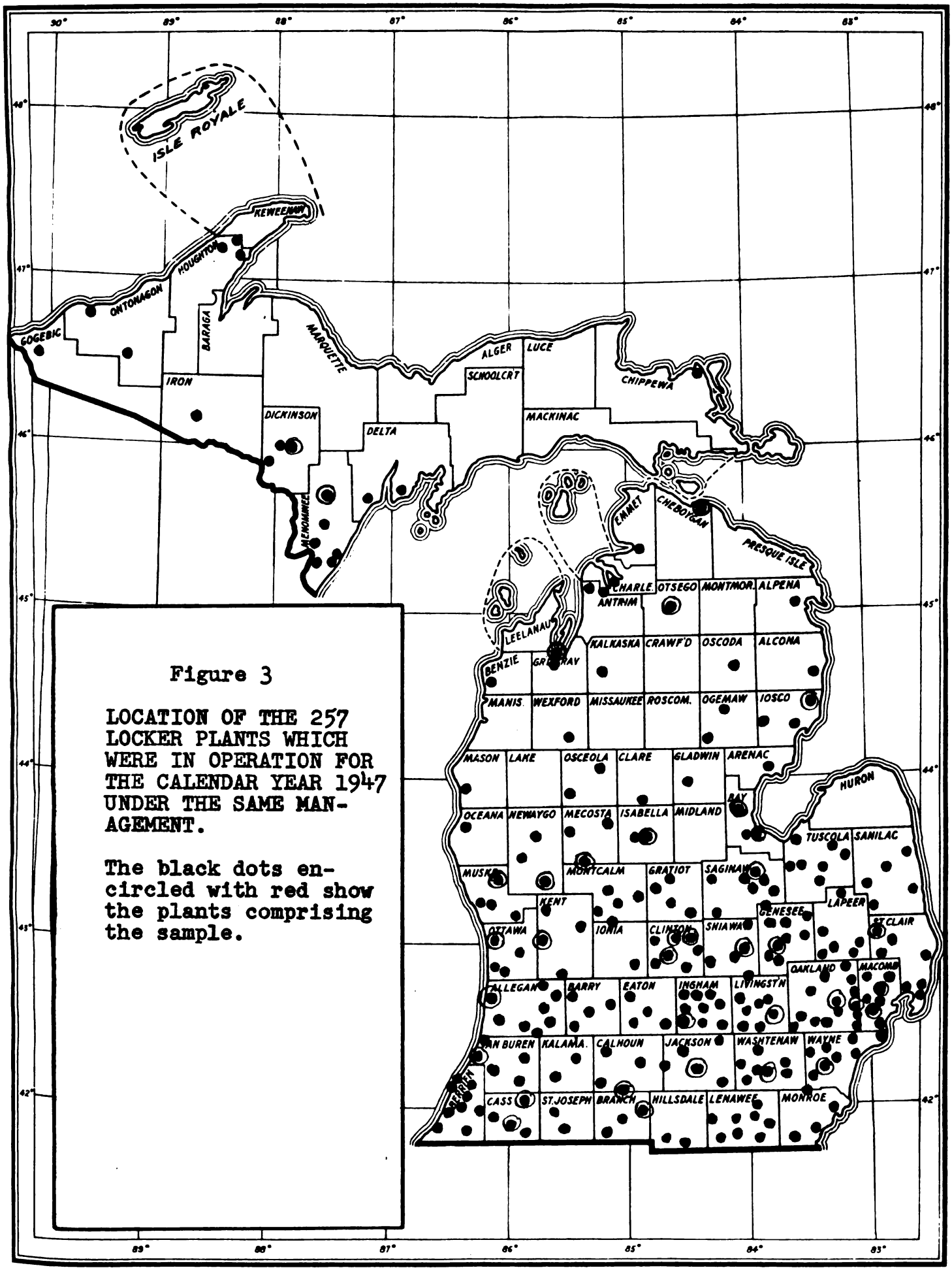

Figure 3

LOCATION OF THE 257 LOCKER PLANTS WHICH WERE IN OPERATION FOR THE CALENDAR YEAR 1947 UNDER THE SAME MANAGEMENT.

The black dots encircled with red show the plants comprising the sample.

(b) Main Plant: This means a frozen food locker plant which provides processing and storage services.

(c) Branch Plant: A branch plant means a frozen food locker plant which provides storage services only. The foods are processed for storage in the main plant, but stored in the branch plant as a convenience for those patrons living far away from the main plant.

(d) Processing: Processing means the preparation of food for storage. Chilling, cutting, wrapping, freezing, curing, smoking, grinding, rendering, and glazing are included in processing.

(e) Chill Room: The chill room has temperatures within two (2) degrees Fahrenheit of thirty-five (35) degrees Fahrenheit with a tolerance of ten (10) degrees Fahrenheit for a reasonable time after fresh food is put in for chilling.

(f) Sharp Freeze Room: The sharp freeze room is where food is frozen. It has temperatures of minus ten (10) degrees Fahrenheit or lower, or temperatures of zero (0) degrees Fahrenheit or lower when forced air circulation is employed, with a tolerance of ten (10) degrees Fahrenheit for either type of installation for a reasonable time after fresh food is put in for freezing.

(g) Locker Room: The locker room means the room in which the individual lockers are located. The temperatures in this room are not to exceed zero (0) degrees Fahrenheit with a plus tolerance of five (5) degrees Fahrenheit.

CHAPTER II

GROWTH, OWNERSHIP, INVESTMENT, BUSINESS ASSOCIATION, AND SIZE OF MICHIGAN'S LOCKER INDUSTRY

Growth. In eleven years 375 frozen food locker plants in Michigan opened their doors to locker patrons. At the end of 1937 there were no locker plants in Michigan, but by the end of 1938 six plants had started business. Five more opened in 1939, ten opened in 1940, eight opened in 1941, and three opened in 1942. During World War II the number of frozen food locker plants opening each year increased greatly. Eighty-one opened in 1943; 18 opened in 1944; and 55 opened in 1945. A similar expansion occurred in other sections of the United States. This expansion movement continued after the war had ended and in 1946, 93 new plants started operations. More new locker plants opened in 1946 than in any other year. From the end of 1946 until May 1, 1948, 96 more locker plants began operating. Figure 4 shows graphically the growth in Michigan from 1937 to 1948.

The 36 plants which were interviewed showed a growth trend similar to the growth trend of all plants in the state. Three percent of the 36 plants opened in 1938; eleven percent began business in both 1939 and 1940; no plants in the sample opened in 1941; six percent opened in 1942; three percent opened in 1943; eight percent opened in 1944; fourteen percent opened in 1945; and forty-four percent opened in 1946 (Figure 5). It must be remembered that only those plants

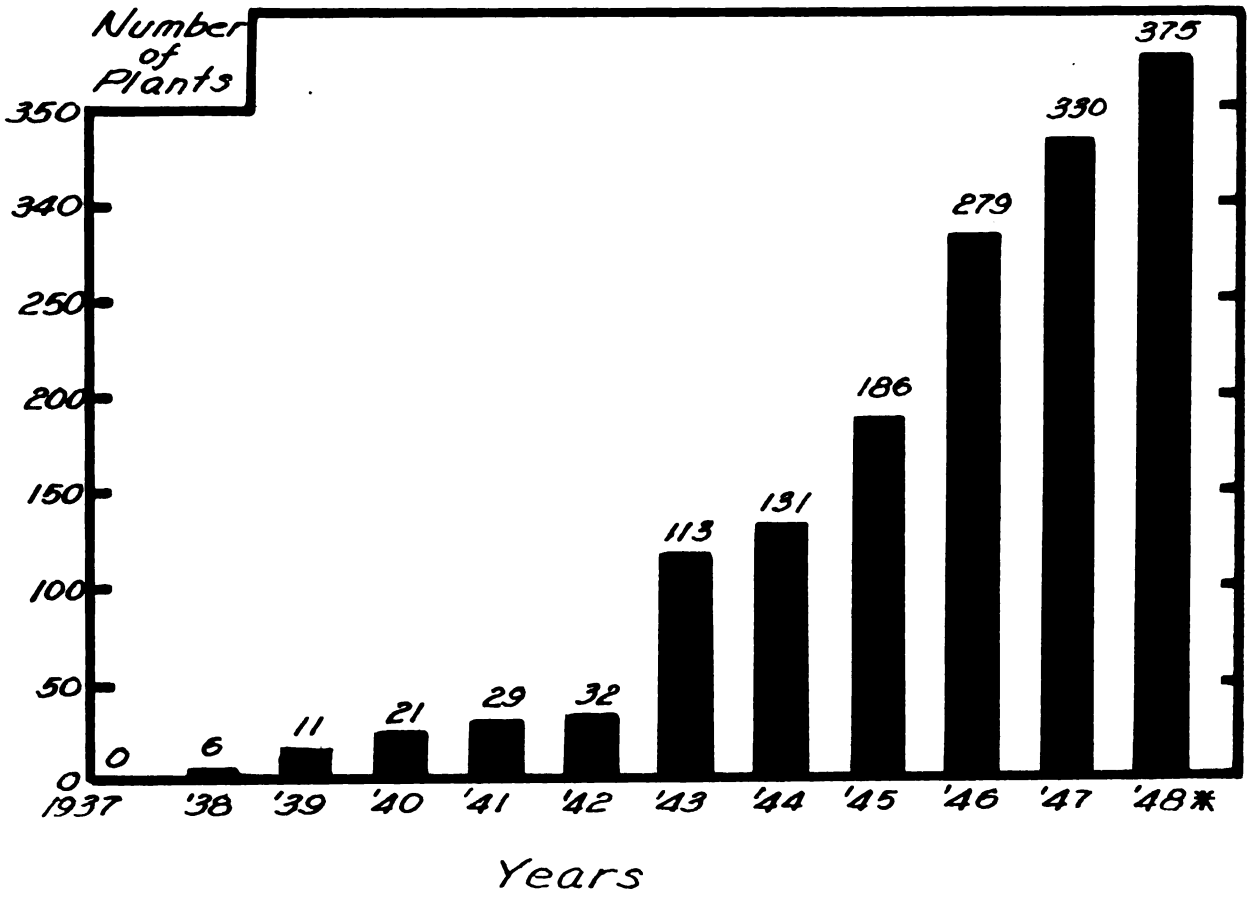

FIGURE 4. GROWTH OF LOCKER PLANTS IN MICHIGAN.

NUMBER ON BAR WAS TOTAL NUMBER ON DECEMBER 31 OF YEAR INDICATED.

* AS OF MAY 1, 1948.

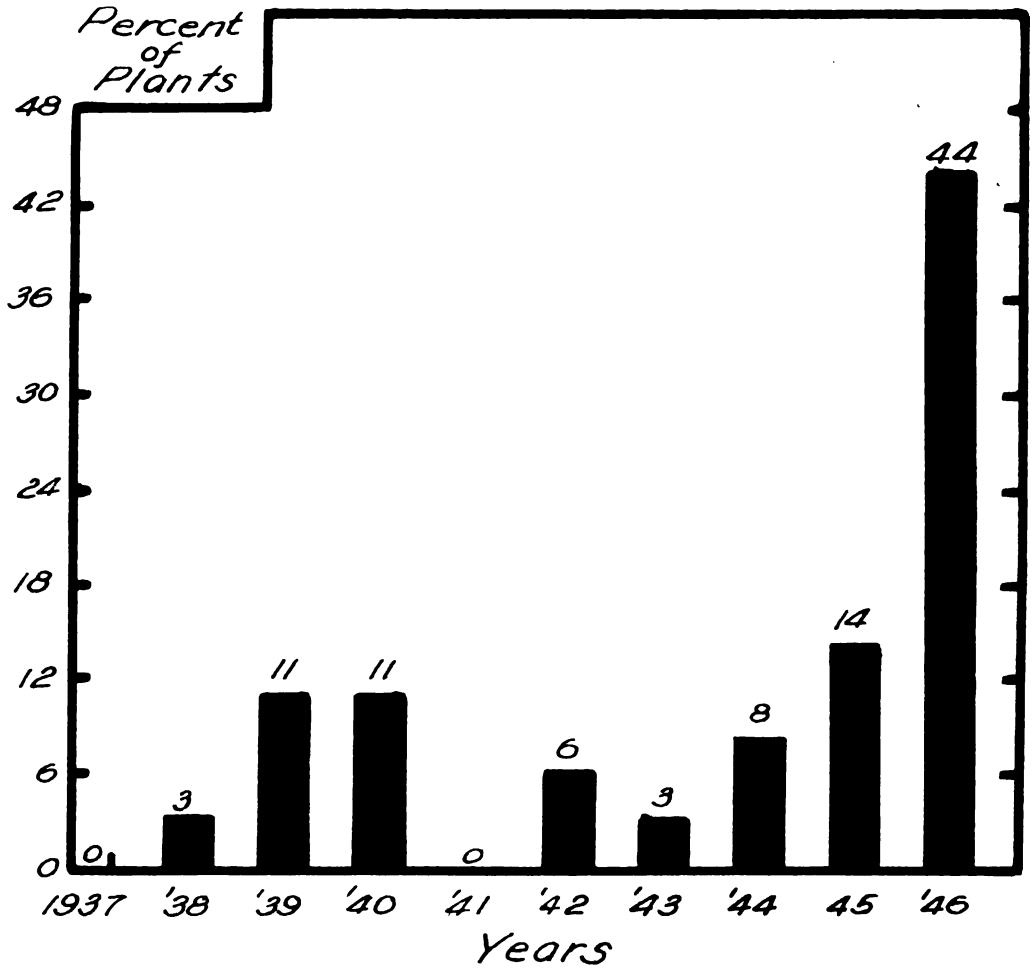

FIGURE 5. YEARS IN WHICH 36 SAMPLE PLANTS BEGAN OPERATIONS.

IN 1946 FORTY-FOUR PERCENT OF THE THIRTY-SIX SAMPLE PLANTS OPENED FOR BUSINESS.

which were in operation for the full calendar year 1947 were included in this sample, so plants opening in 1947 and 1948 are not included.

Ownership. Generally speaking, the first locker plants in Michigan were started as supplements to, or side lines of, established small business enterprises. Owners of grocery stores, creameries, produce plants, and meat markets added locker facilities to their existing businesses, and in most cases, these existing businesses were operated by single individuals as proprietorships. It appears only natural that the first locker plants in the state were in the main operated as proprietorships.

As the locker movement progressed, additional lockers were added to the existing plants, and larger new plants were built; consequently, the capital investments involved usually were larger than single individuals could or were willing to finance. The partnership, incorporated and cooperative type of ownership thus came into the picture.

In Michigan there was a rather close correlation between type of ownership and size of plant. The smaller plants were usually operated as proprietorships and the larger plants were operated as partnerships, cooperatives, or corporations. Information was not available at one location so that the type of ownership for all plants could be accurately determined. Results from the field work for this study showed that 48 percent of the plants sampled were operated as

proprietorships, 37 percent as partnerships, 13 percent as corporations, and 2 percent as cooperatives (Figure 6).

It is significant that only two percent of the locker plants operating in Michigan were cooperative. Recent studies have shown that approximately 16 percent of the locker plants operating in eight Southeastern states were owned cooperatively; 14 percent of the plants in the North Central states were owned cooperatively; and 8 percent of the plants in the Western states were owned cooperatively. In the United States in 1946, 13 percent of all locker plants were owned cooperatively.

Cooperatives in Michigan were generally hesitant in entering this new industry. When the locker plant movement began in Michigan, cooperatives were reluctant to enter the field. Furthermore, as adjuncts to existing cooperatives, there was less opportunity than in other states having a larger number of creameries, cheese factories, and other cooperative businesses. Private investors, however, jumped in and got an early start in most communities.

Investment. Over one-half of the locker plants in the sample interviewed had an original investment of less than $20,000 (Figure 7). The minimum investment per plant was $2,500 and the maximum investment was $95,000. The average investment in the plants interviewed was $32,630. There was no direct correlation between size of plant and original investment because of differences in the price level when plants

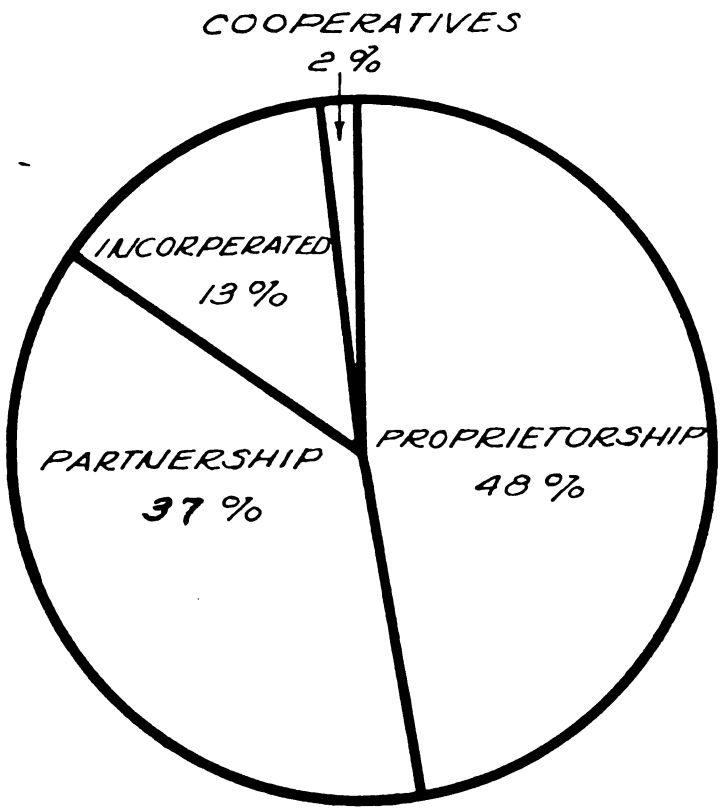

FIGURE 6. TYPE OF OWNERSHIP OF LOCKER PLANTS.

IN MICHIGAN ALMOST ONE-HALF OF THE LOCKER PLANTS WERE OPERATED AS PROPRIETORSHIPS. THE COOPERATIVE TYPE OF OWNERSHIP WAS VERY SMALL.

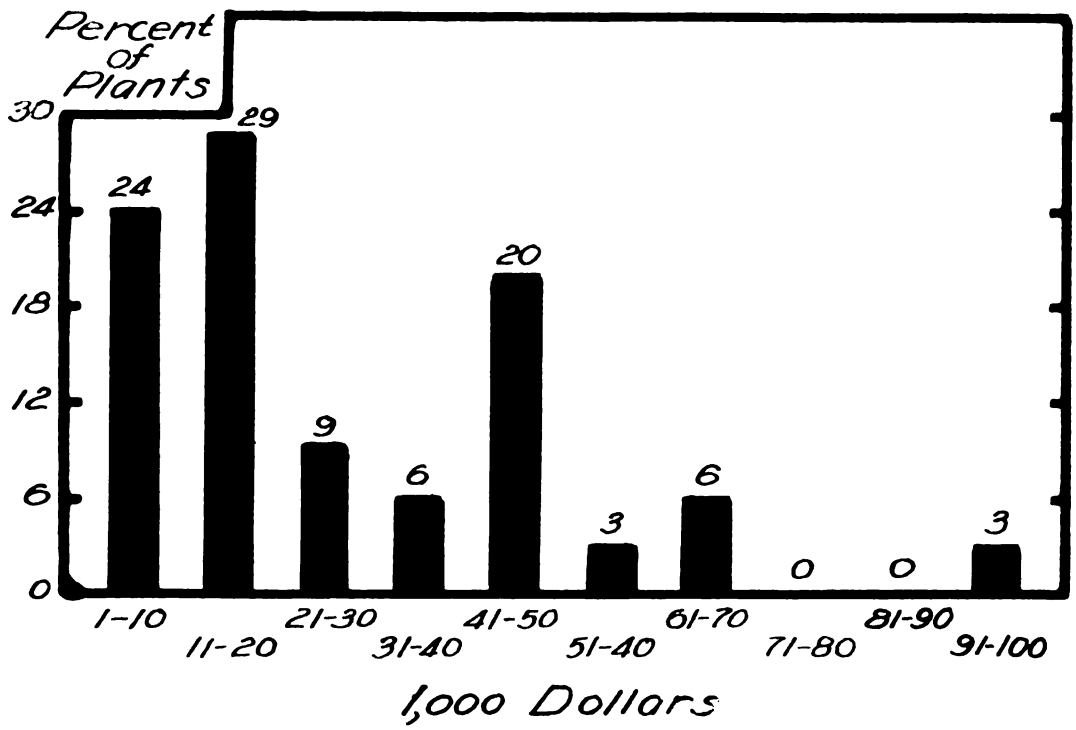

FIGURE 7. TOTAL ORIGINAL INVESTMENT - 34 PLANTS

INFORMATION FROM TWO PLANTS WAS NOT AVAILABLE. OVER ONE-HALF OF THE LOCKER PLANT OWNERS HAD LESS THAN $20,000 INVESTED IN THEIR PLANTS.

were built, the types of building used, and the location of the plant (rural or urban area). Some plants were built by the owner's manual labor and some were built by commercial contractors. The estimated total investment in the 375 locker plants was over $12,000,000.

The investment per locker ranged from a low of $18.35 to a high of $100.00. One plant visited had an investment of $176.67 per locker, but this figure was high because this plant had an unusually large amount of refrigerated bulk storage space. The average investment per locker in the plants visited was $53.83 (Figure 8). Investment per locker fluctuated in the same manner and for the same reasons as the original investment.

Business Association. It was mentioned earlier that most locker plants were run in conjunction with other businesses. In fact, only 19 percent of the plants sampled had no other business association (Figure 9). Over one-half (53 percent) of the locker plants visited were associated with a meat market or a grocery store; 11 percent of the locker plants sold home freezers; 6 percent were operated with ice plants; and 11 percent were associated with other businesses. Other businesses include: cream buying stations; ice cream jobbing; restaurants; cheese factories; and retailing of fresh and frozen fruits and meats.

Discussions with locker owners revealed several reasons why they conducted other businesses with their locker plant.

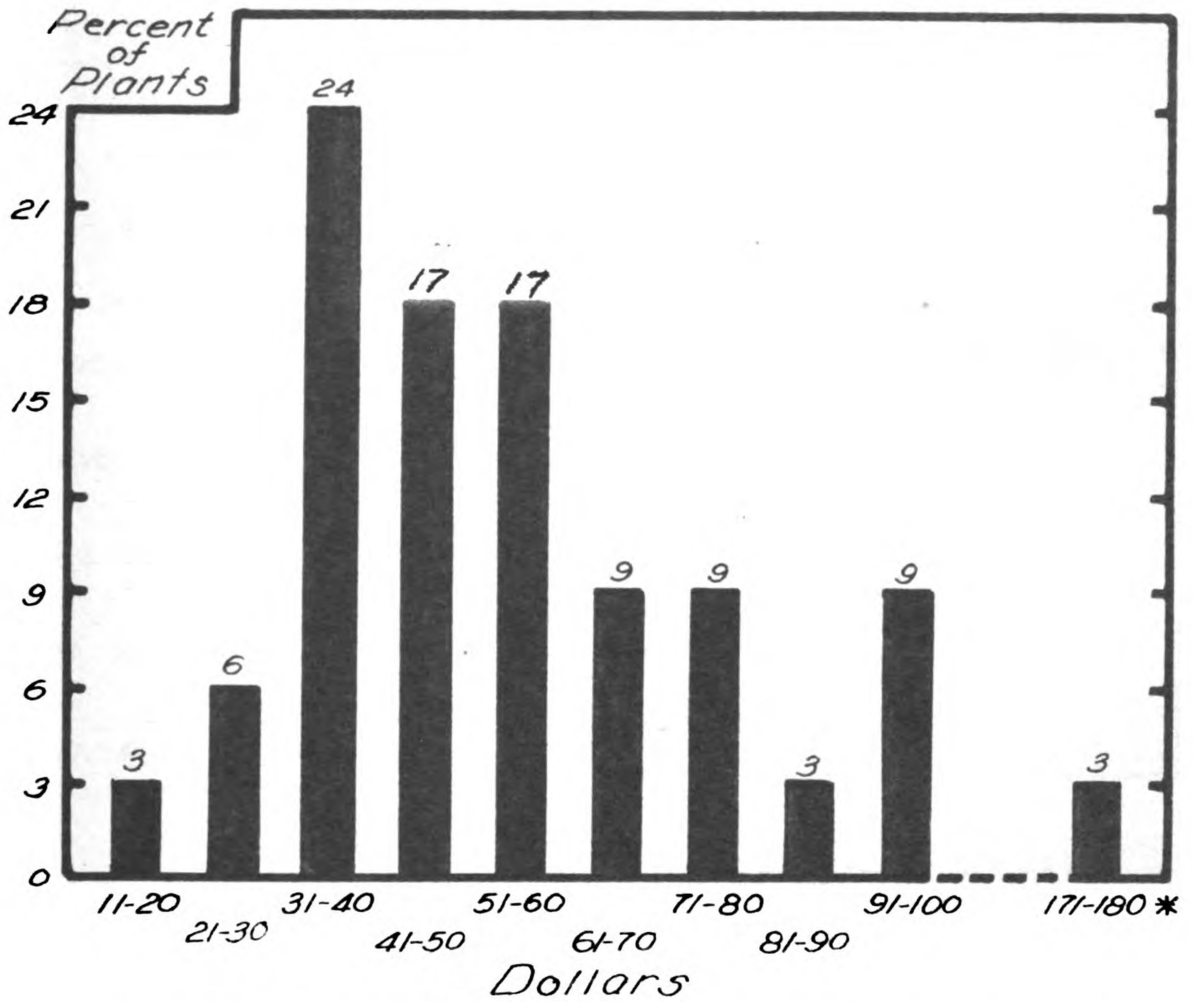

FIGURE 8. INVESTMENT PER LOCKER - 34 PLANTS.

INFORMATION FROM TWO PLANTS WAS NOT OBTAINED.

* SOME PLANTS HAD A LARGE AMOUNT OF REFRIGERATED BULK STORAGE SPACE WHICH MADE THE INVESTMENT PER LOCKER OUT OF PROPORTION.

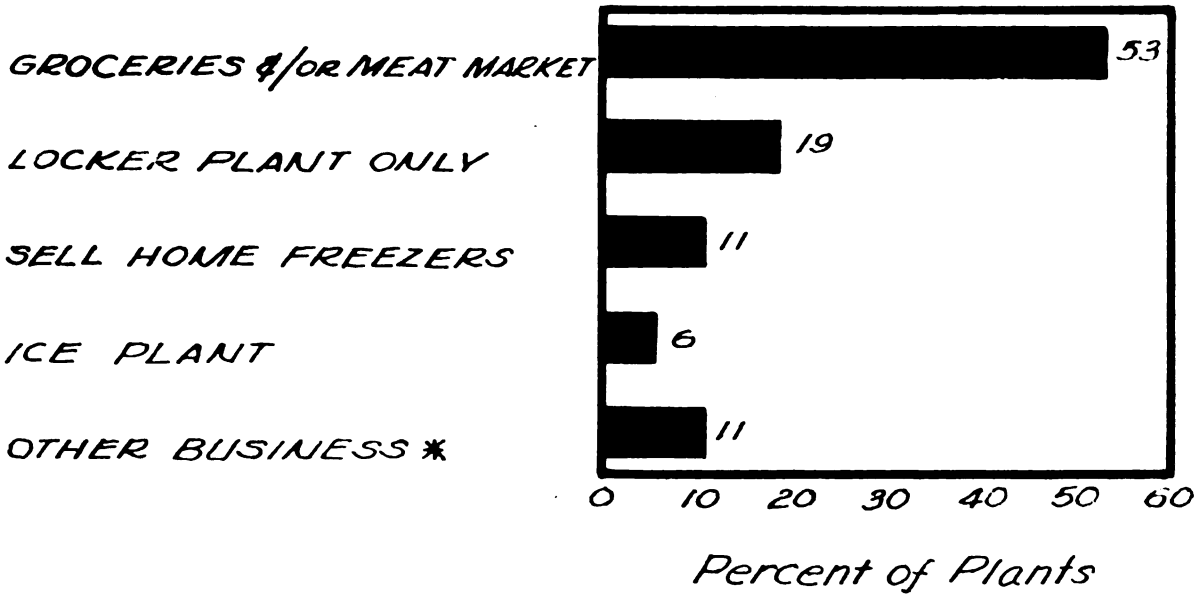

FIGURE 9. OTHER BUSINESS OPERATED WITH LOCKER PLANT.

*CREAM BUYING STATION, ICE CREAM JOBBING, RESTAURANT AND CABINS, AND RETAILING OF FROZEN TURKEYS AND FROZEN BLUEBERRIES.

Several had added the locker business to their grocery business because they felt the locker patrons would purchase more groceries than they otherwise would, since they came to their lockers frequently to take home stored frozen foods. The reverse situation was equally true. Several locker owners who started with just a locker plant have added groceries as a service to their locker patrons and a supplement to their locker business. The addition of other items for sale followed the same reasoning. In about one-half of the cases the locker business was the major enterprise and the other business was a supplement or minor business.

Sizes of Locker Plants. When data from the 257 eligible plants were being analyzed in preparation for determining the plants to be interviewed, it was found that 105 of them had fewer than 401 lockers; 118 had between 400 and 751 lockers; and 34 had over 750 lockers.

The smallest known locker plant in the state had 30 lockers and the largest plant had 3,500 lockers. The largest plant which fell in the sample had 1,554 lockers and the smallest had 60 lockers. The average number of lockers in the sample was 573.

Two of the locker plants visited in the sample were self-contained plants having 60 lockers each. These two plants were operated in association with grocery stores and sat on the floors in the two stores. These units were assembled on location and required no separate or individual room; the

refrigeration was built into the unit. After they were assembled, they were connected with the electric circuit and the built-in refrigeration unit started functioning. The author learned that the owners of these two plants were in quite a bit of trouble when the electric power went off for a few hours.

Using the average number of lockers per plant found in the sample (573) and the number of locker plants in business as of May 1, 1948 (375), it was estimated that there were approximately 215,000 lockers in the state at the time of this writing. If these 215,000 lockers were filled twice each year, approximately 85,000,000 pounds of frozen foods could be stored annually in the existing locker plants. These statements indicate the present capacity for storing frozen foods.

Only five of the thirty-six plants in the sample had branch plants. The largest branch plant had 804 lockers and was five miles from the main plant. The smallest branch plant had 222 lockers and was eleven miles from the main plant. This distance of eleven miles was the longest distance any branch was from the main plant.

In March, 1948, when the sample plants were visited, ninety-two percent of their lockers were rented. Eight of the thirty-six had all of their lockers rented; however, one owner had only 50 percent of his lockers rented and two owners had only 70 percent rented. These three owners had empty

lockers principally because of competitive conditions in their locality.

Several of the locker plant owners stated that their percentage of lockers rented had fallen off in the last year. They attributed this to the opening of new locker plants in their locality and to the increasing use by families of home freezers.

CHAPTER III

ANALYSIS OF SERVICES OFFERED

The processing services are the major services offered by locker plants. These include chilling, aging, cutting, wrapping, freezing, curing, smoking, grinding, rendering, glazing, waxing, dressing, and drawing. Some plants offered other services to their patrons and these included packing fruits and vegetables, delivering frozen foods from the locker to the patron's home, making sausages, and slaughtering.

Meats. Six percent of the plants visited did not provide the major processing services for their locker patrons. The only services these plants provided were sharp freezing and storing. The other ninety-four percent rendered complete or fairly complete services. All of the latter group provided for chilling, cutting, wrapping, and freezing of meats. Most of them provided an aging service. The locker plants which did no cutting or wrapping were just cold storage buildings with individual lockers provided.

The services just mentioned were generally grouped together and only one charge was made for the group. Results from the field work showed variations in the rates charged. The rates ranged from 2½ to 5 cents per pound. Forty-four percent charged 3 cents per pound (Table II), which was most common. A comparison of charges was made between

Table II - Percentage Distribution of Processing Charges for Services Offered on Meats and Meat Products, 36 Locker Plants, Michigan, March, 1948

Services	Service Not Offered	Processing Charges											
		Included With Other Service	Cents Per Pound										
			½ or less	1	1½	2	2½	3	3½	4	4½	5	Total %
Meats:	%	%	%	%	%	%	%	%	%	%	%	%	
Chill, cut, wrap and freeze	6						17	44	10	17		6	100
Freeze only	0	12	6	37	14	25		6					100
Cure	44					3	17	22	3	8			97 5/
Smoke	44			3		8	17	19	3			3	97 5/
Grind only	8	8		11	17	47		3					97 5/
Grind, make sausage	32	11		6	3	17		14	3	8		3	97 5/
Render lard	38	6				3		28		11		14	100
Wax	91							3	3	3			100

5/ About 3% of the plants had a flat charge per cut or quarter.

type-of-farming areas, size of cities in which the plants were located, years when the plants opened, and size of the plants.[6/] It was found that there were more variations within the groups than there were between them.

When freezing only was considered, the variations in rates charged were wide. Six percent of the plants did not do custom freezing; six percent did do custom freezing but they charged the same for freezing as they did for chilling, cutting, wrapping, and freezing; six percent charged ½ cent or less per pound; thirty-seven percent charged 1 cent; fourteen percent charged 1½ cents; twenty-five percent charged 2 cents; and six percent charged 3 cents per pound (Table II). One cent per pound was the most common charge for freezing meats.

Only fifty-six percent of the plants visited cured meats. Thirty-nine percent charged either 2½ or 3 cents per pound for curing. The most common charge was 3 cents per pound. Curing and smoking were usually done together. Fifty-six percent smoked meat. The range of charges for smoking was wider than that for curing; however, the most common charge was also 3 cents per pound.

Two cents per pound was the most common charge for grinding meat. The charges varied from 1 to 3 cents and some plants included this charge with other services.

6/ Statistical F-tests were run.

Thirty-two percent of the plants visited did not make sausage and eleven percent did not levy a separate charge for making sausage. The charges ranged from 1 to 5 cents per pound, and the most common charge was two cents per pound.

Only sixty-two percent of the plants rendered lard. Six percent of the plants included the charge for rendering lard with other services. The most common charge was 3 cents per pound on seventy percent of the green weight of the fat.[2/]

A new processing service in the frozen food locker business was waxing. Only nine percent of the plants in the sample had begun waxing. The average charge for this service was 3½ cents per pound.

It is evident from the above discussion that many possibilities existed for providing more complete services on meats for locker patrons. By providing more, the locker plants could not only better satisfy their customers, but they could also supplement their income, especially by the addition of curing and smoking equipment.

Poultry. Sixty-three percent of the plants sampled did not dress and draw chickens (Table III). Sixty-seven percent

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2/ Locker plants used several systems of charging for rendering lard. Some plants took a percentage of the lard. Some charged a definite rate per pound on each 70 pounds of lard from each 100 pounds of fat, and if more than 70 pounds of lard were rendered from the 100 pounds of fat, the locker plant kept this. Some plants charged on the basis of the green weight of the fat and returned all lard to the patron. The majority of the plants charged on the basis of 70 pounds of lard from each 100 pounds of fat. The rates from all plants were adjusted and given in Table II on this basis.

Table III - Percentage Distribution of Processing Charges for Services Offered on Poultry and Fish Products, 36 Locker Plants, Michigan, March, 1948

Services	Service Not Offered	Processing Charges															Total %
		Cents Per Pound					Cents Per Bird										
		1	2	3	4	5	5	10	15	20	25	30	35	40	45	50	Over 50	
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
Dress and draw chickens	63						3	3	8	11	6		6					100
Dress and draw turkeys	67						3			3	11		3	8		3	3	100
Wrap and freeze chickens	11		11	31	3	3	6	24	8	3								100
Wrap and freeze turkeys	11		14	31	3	3		6	14		13							100
Wax and freeze chickens	94			6														100
Wax and freeze turkeys	94			6														100
Wrap and freeze fish	22	3	11	48	8	8												100

did not dress and draw turkeys. For the thirty-seven percent of the plants which did dress and draw chickens, 20 cents per bird was the most common charge; however, the charges ranged from 5 cents to 35 cents per bird. The range of charges for turkeys was much wider. Three percent charged 5 cents per bird, and three percent charged over 50 cents per bird. Several locker plants' managers admitted that they disliked dressing and drawing poultry and that they either flatly refused to do that type of work or that they charged an unusually high fee for performing the service.

There were two methods of levying service charges for wrapping and freezing poultry; namely, by the pound and by the bird. Eleven percent of the plants did not wrap and freeze poultry. About half of all the plants sampled charged by the pound. For wrapping and freezing both chickens and turkeys, three cents per pound was the most common charge. Ten cents per chicken was the most common charge on the bird basis. Twenty-five cents per turkey was the most common charge for this type poultry.

Only six percent of the plants froze and waxed chickens and turkeys. This six percent charged three cents a pound for the service.

Fish. The most common charge for wrapping and freezing fish was 3 cents per pound (Table III). Here again many locker plant managers stated that they disliked handling fish in their processing room. Twenty-two percent did not process

fish. One locker owner charged 3 cents a pound for processing fish. He added a 10 cent charge for each package and had a one dollar minimum for each mess of fish brought to his plant. In this way he discouraged the practice of having two or three small fish brought in for processing.

Fruits and Vegetables. Locker plants used two methods of charging for the freezing of fruits and vegetables. One was by the container, either quart or pint, and the other was by the pound. In the plants sampled, the most common charge was 2 cents per pound. Some plants charged as high as 5 cents per quart and others charged 3 cents per pound.

Changes in Processing Charges. Seventy-two percent of the plants in the sample made no changes in their rates for processing services during the calendar year 1947. Many plant managers who did not change their rates in 1947 stated that they had raised their rates in the latter part of 1946 when O.P.A. was ended. Eleven percent raised the rate for chilling, cutting, and wrapping meat ½ cent per pound. Eleven percent raised the rate for this same group of services 1 cent per pound. Three percent of the plants raised the rate for these services 1½ cents per pound. Six percent of the plants raised their rates for processing poultry and for fish.

Delivering Stored Frozen Foods. Six percent of the locker plants in the sample delivered frozen foods from the patron's locker to his home. The plants in this group also

ran grocery stores and delivered groceries. When a locker patron called in an order for groceries, he told the manager to include some packages from his locker. No charge was made for this service. Other locker operators talked of starting this, so it will probably increase in the future. It appears to be one of the many little ways of increasing business and satisfying customers.

Conclusions. Many locker plants do not offer complete processing services because they dislike doing certain types of jobs. It is the writer's opinion that competition will force them to perform these services when economic conditions become stabilized and a greater number of locker plants are operating. If more services were provided, locker patrons could be served more completely, the labor force could be better and more evenly utilized, and income could be increased.

CHAPTER IV

LOCKER RENTAL RATES IN 1947

Arrangement of Lockers. In the typical locker plant the individual lockers were arranged in rows, and the lockers were five tiers high in each row. The bottom three tiers of lockers were drawer-type lockers, and the two top tiers were door-type lockers. There were many variations from this standard set-up, and most locker owners adapted the number of tiers of lockers to the height of the storage room, as many locker plants were being operated in buildings built for other purposes. Locker plants were visited which had lockers four tiers high and others had lockers nine tiers high. The number of tiers of drawers and of doors varied widely from all doors to all drawers.

In most plants the drawer-type lockers formed the bottom tiers, and the door-type lockers comprised the top tiers. Door-type lockers were more difficult to use than drawer-type lockers. The drawer type lockers could be pulled out and the locker patron could easily sort through his packages and locate different cuts or cartons. To get a package in the back of a door-type locker most of the packages in front had to be first removed. And since the door-type lockers were usually placed at the top of the tiers of lockers, a step ladder was necessary in most plants to use these lockers.

Description of the Most Common Locker. The standard frozen food locker was about six cubic feet in size. This

six-foot locker was 30 inches long, 24 inches wide, and 16 inches high. It held slightly over 200 pounds of frozen food. The standard lockers were made of metal.

There were many variations from the standard locker. The type of material used in constructing the lockers varied as did the size. Several plants had home-made lockers built of ply-wood or wire-mesh which held from 1/3 to 1½ times as much frozen food as the standard lockers.

Rental Rates. Because of their location and the accessibility of the packages, drawer-type lockers most generally rented for more money per year than did the door-type lockers. In the thirty-six plants which were visited the rental rates for drawer-type lockers varied from $10.60 to $25.50 per year (Figure 10). Two-thirds of the plants charged from $14.00 to $17.00 annually for the drawer-type lockers. The lockers renting for over $20.00 were in the small, self-contained plants mentioned earlier.

In the plants sampled, the door-type lockers rented from $9.00 to $23.50 per year. Thirty-seven percent of the plants charged between $12.00 and $13.00 per year. This was the most common charge, but the charges varied widely (Figure 11). In most plants door-type lockers rented from two to three dollars less than the drawer-type lockers.

Locker Insurance. Sixty-four percent of the plants in the sample had their locker patrons pay for insurance to cover their stored frozen foods. About twenty percent had

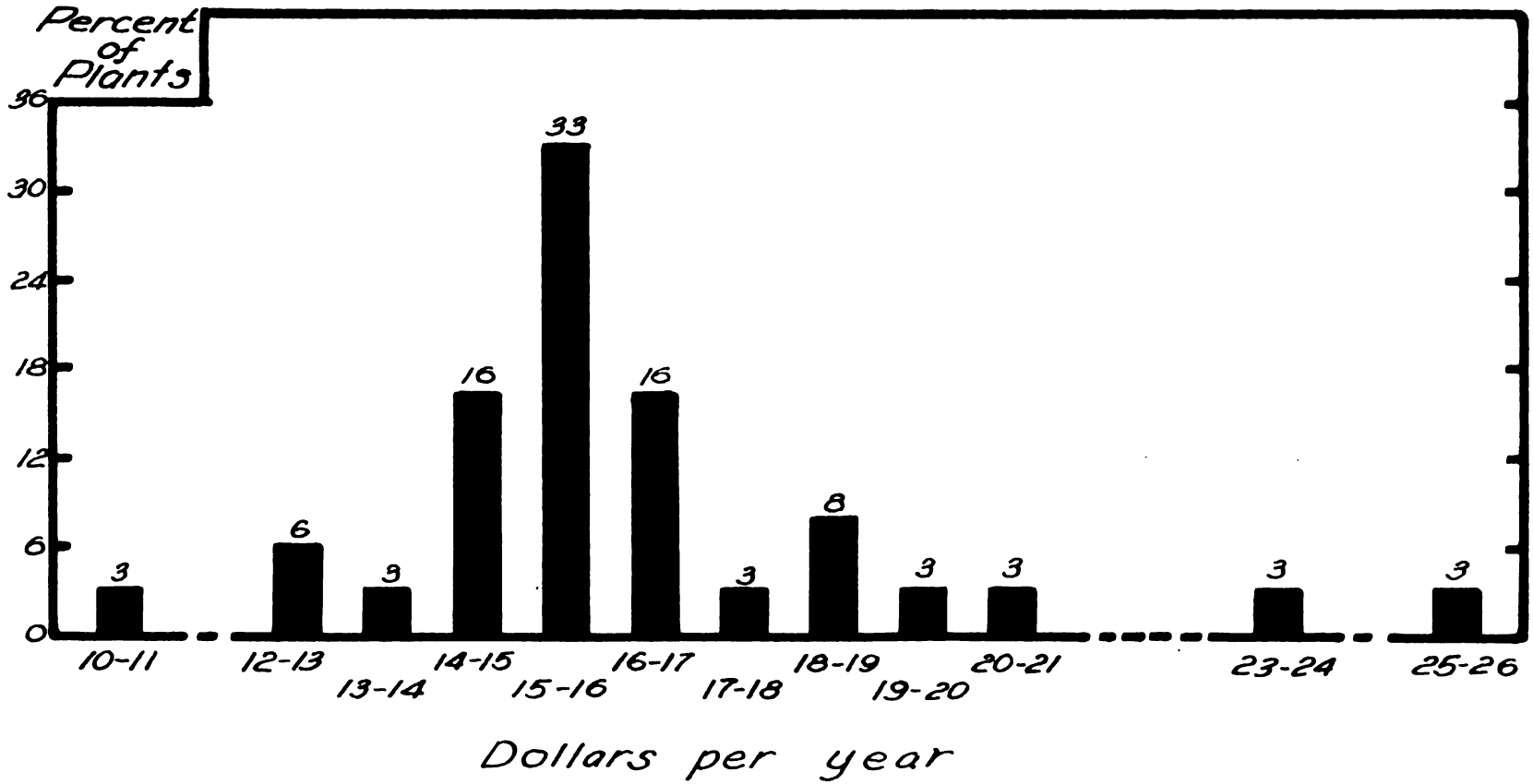

FIGURE 10. RENTAL RATES FOR DRAW-TYPE LOCKERS.

SIXTY-FIVE PERCENT OF THE PLANTS CHARGED. FROM FOURTEEN TO SEVENTEEN DOLLARS PER YEAR FOR DRAW-TYPE LOCKERS.

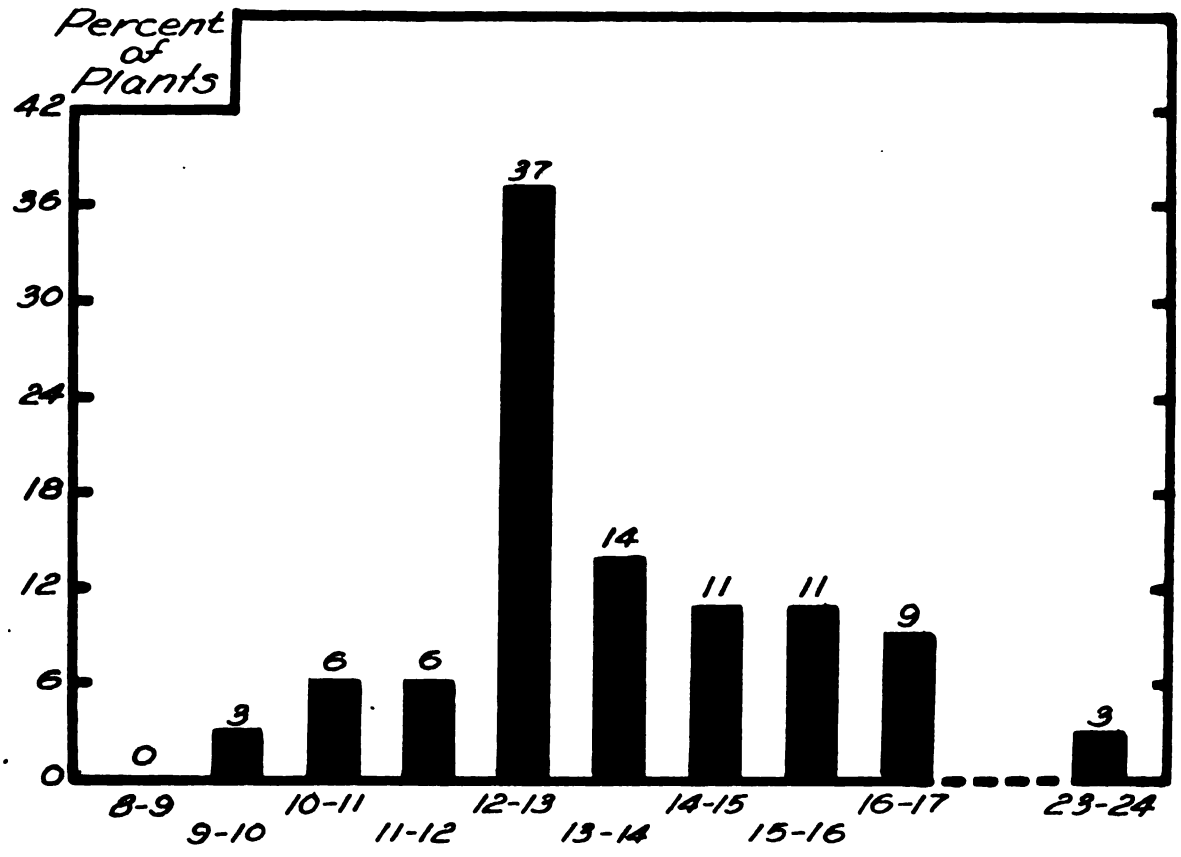

FIGURE 11. RENTAL RATES PER DOOR-TYPE LOCKERS.

SOME PLANTS DID NOT HAVE DOOR-TYPE LOCKERS.

THIRTY-SEVEN PERCENT OF THE PLANTS HAVING DOOR-TYPE LOCKERS CHARGED FROM TWELVE TO THIRTEEN DOLLARS.

the frozen food insured, and the insurance was added to the locker rentals without the patrons' knowledge. The average charge the patrons paid for locker insurance was 68.4 cents per locker per year. The minimum charge was 50 cents and the maximum charge was $1.00 per locker per year.

Change in Rates. Eighty-two percent of the locker plants visited did not change their rental rates in 1947. Six percent raised the rental rates on all lockers one dollar per year. Six percent lowered the rental rates on either all lockers or some tiers of lockers one dollar per year.

Over-flow Lockers. Most plants had over-flow lockers which patrons rented for short periods of time when they had frozen foods which could not be placed in their lockers. These over-flow lockers were usually rented by the month, and the product of the monthly rate multiplied by twelve usually was two to three dollars more than the annual rate for comparable lockers.

The One-Charge Plants. A few plants had started levying a flat charge to cover the annual locker rent and all processing for one year. For those patrons who used their lockers regularly and placed frozen food in their lockers almost every month this system worked out fine; but for those patrons who did not use their lockers much this system was expensive. In 1947 one locker plant charged a flat fee of $32.00 for drawer-type lockers and $28.00 for door-type lockers. These rates included the rental and processing

rates for the year, and processing charges were to average $20.00. If processing had averaged $20.00, the drawers would have cost $12.00 and the doors $8.00 each. The actual average processing cost per locker patron was around $11.50. This means that the drawers actually averaged $20.50 for the year and the doors averaged $16.50. Since these figures are averages, some patrons actually paid more than this for their lockers. If this system is used, the patron should sit down and figure out, before he rents a locker, just how much processing he plans to have done.

Conclusions. The ordinary locker had six cubic feet of space and held about 200 pounds of frozen foods. The drawer-type lockers were usually placed nearer the floor than the door-type lockers. The drawer-type lockers were more easily accessible and generally rented from two to three dollars more per year than the door-type lockers.

In the 36 sample plants which were visited the most common annual rental rate for drawer lockers was between $15.00 and $16.00. The most common charge for door-type lockers per year was $12.00 to $13.00. Only eighteen per-cent of the locker plants visited changed their rental rates in the calendar year 1947.

Some locker plants charge a flat fee which covered the annual locker rental and processing charges. Locker patrons should predetermine how much they plan to use their locker before renting lockers in these plants.

CHAPTER V

SOURCE OF MEAT STORED IN LOCKERS AND SLAUGHTERING DATA

Eleven percent of the locker plants visited bought livestock, slaughtered it or had it slaughtered, and sold the meat. Only six percent of all locker plants had their own slaughter houses. The livestock was bought mainly from local farmers; however, some was bought from local livestock dealers and from local auction markets. Three percent of the plants did on-the-farm slaughtering.

In previous locker studies in other states it was found that two-thirds or more of the locker patrons were rural people. These rural people generally raised and slaughtered their own meat; however, on-the-farm butchering was decreasing. The estimated one-third of the locker patrons living in urban areas had to purchase their meat from the locker plant or elsewhere.

Resale of Meats at Wholesale Prices. Eighty-nine percent of the locker plants bought wholesale meats and resold them to their locker patrons at the wholesale price plus a small mark-up. The usual mark-up for handling these meats was 2 or 2½ cents per pound. Forty-seven percent of the plants charged from 2 to 3 cents per pound for handling the meat (Figure 12). There was no normal curve of brokerage charges. Six percent of the plants handled the meat without charging a mark-up, while three percent of the plants charged 25% over cost.

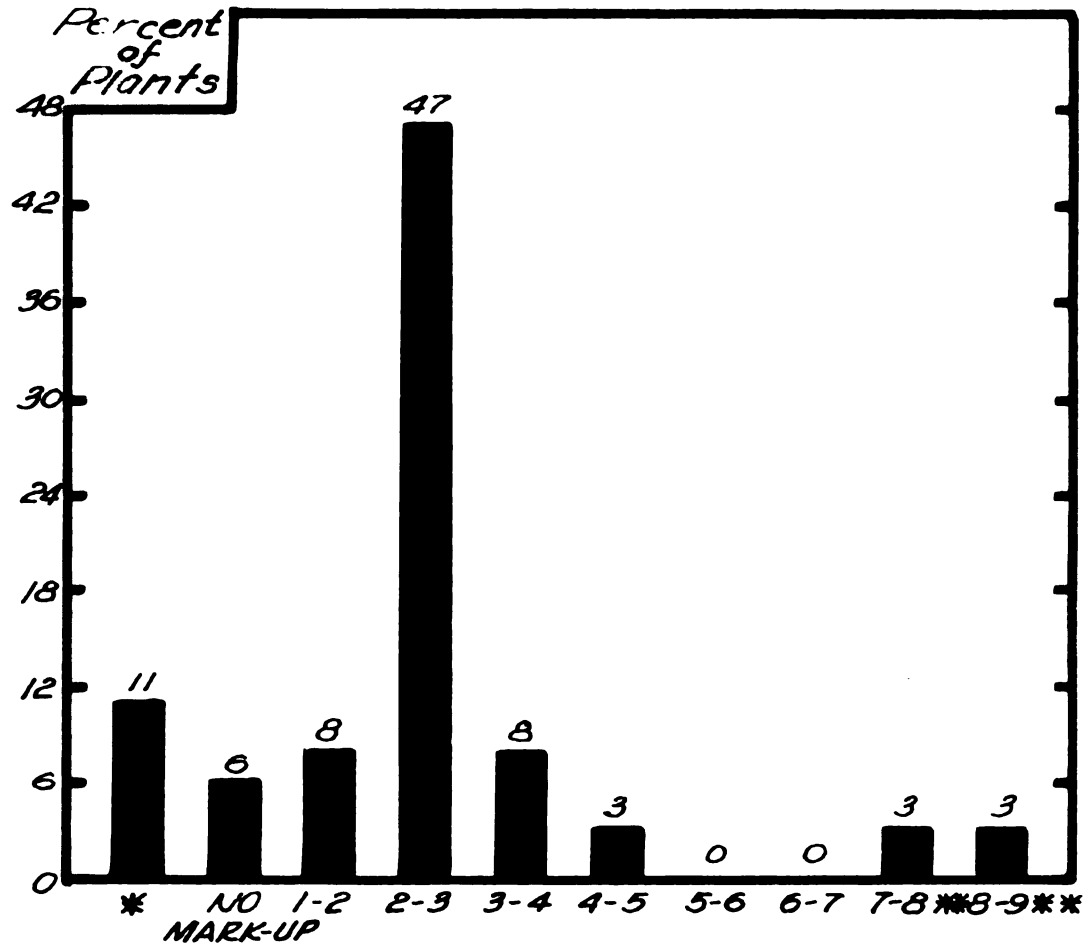

FIGURE 12. MARK-UP ON WHOLESALE MEAT SALES.***

* ELEVEN PERCENT OF THE PLANTS DID NOT SELL MEAT AT WHOLESALE.

** THE PLANTS WHICH CHARGED 7 TO 9 CENTS PER POUND BROKERAGE HANDLED ONLY HIND QUARTERS OF BEEF.

*** ELEVEN PERCENT OF THE PLANTS WERE NOT INCLUDED IN THE FIGURE SINCE THEY COMPUTED THEIR MARK-UP AS A PERCENTAGE OF COST.

Locker plant managers reported that prime, choice, good, and common meat was bought for the locker renters. The answers they gave were not reliable enough to present a percentage breakdown. One manager was telling of his ability to judge meats and name the correct government grade. He pointed to a side of beef and said, "That's a good side of beef. It would grade commercial choice." The writer thought it was a low commercial.

Location of Slaughtering Facilities. Only six percent of the locker plants had slaughtering facilities. Where were the animals slaughtered? When the field work was done for this study, the locker plant managers were asked to estimate the approximate percentage of livestock slaughtered for locker storage by farmers, custom slaughterers, and locker plants. Results from these estimates show that for cattle: 48 percent were slaughtered by farmers; 47 percent were slaughtered by custom slaughterers; and 5 percent were slaughtered by locker plants. Estimates for calves showed: 56 percent were slaughtered by farmers; 41 percent were slaughtered by custom slaughterers; and 3 percent were slaughtered by locker plants. For hogs: 46 percent were slaughtered by farmers; 51 percent by custom slaughterers; and 3 percent by locker plants. For sheep and lambs: 47 percent were slaughtered by farmers; 47 percent were slaughtered by custom slaughterers; and 6 percent were slaughtered by locker plants.

All locker plant managers stated that very little lamb or mutton was stored. This was easily understood when one remembered that the average annual per capita consumption was only about seven pounds and that the eastern and far western states lead in lamb and mutton consumption.

Source of Livestock. The locker plants which sold meat to their locker patrons and users of home freezers obtained it mainly from two sources. Local farmers supplied some of it and meat packers furnished most of the rest. Some was bought from string butchers and local meat markets, but very little. Fifty-five percent of the plants reported that all meat that they resold at wholesale was purchased from meat packers; twenty-two percent stated that they bought meat from both meat packers and local farmers; six percent obtained all of their meat from local farmers; six percent bought meat from all four sources mentioned above; and eleven percent sold no meat at wholesale. When it was stated that the plants bought from both local farmers and meat packers, usually the beef was obtained from the packers and the pork and poultry was gotten from local farmers.

Many custom slaughterers began operations during World War II. Some began in properly equipped buildings and others began in converted barns and sheds. Generally speaking, much meat was slaughtered under conditions which were not sanitary. Locker plants would be doing a service to their community if they installed sanitary slaughtering facilities so they could slaughter for their locker patrons and also do custom work.

Slaughtering Charges. It was found that slaughtering charges varied greatly. Some custom slaughterers charged one dollar and the hide for slaughtering cattle. People who permitted this, when hides were sixteen to twenty cents per pound, were paying a very high price for having their work done. The six percent of the plants having slaughtering facilities charged similar prices. They took the hides for slaughtering cattle and calves, one cent per pound for butchering hogs, and the pelt and fifty cents or $1.50 for slaughtering sheep and lambs. Plants which had no slaughtering facilities were asked how much custom slaughterers charged. Over fifty percent stated they did not know. In the group that did know over one-half said the hide was taken for slaughtering cattle and calves; and the rest said the charge for cattle ranged from $2.25 to $7.00 per head; calves cost from $1.00 to $3.00 per head. The average charge for butchering hogs was two cents per pound with a $3.00 minimum charge, but charges ranged from one cent per pound to a flat $5.00 charge. Three percent of the plants in the sample of thirty-six did on-the-farm slaughtering. Their charges were: $3.50 for cattle; $2.00 to $3.00 for hogs; and they had no set charge for sheep and lambs because they had never been asked to slaughter any.

The plant which did the most slaughtering slaughtered 306 head of hogs, 96 head of cattle, 10 head of sheep, and 10 head of calves in 1947.

In Michigan locker plants must store hides and pelts in a building which is not a part of the locker plant. Because of this requirement, the small profit involved, and the character of hides fifty-eight percent of the plants sampled did not buy hides.

Over one-half of the plants sampled in the state sold bones, suet, and by-products to one rendering company. In areas which have several locker plants a cooperative rendering company to use the by-products from the cutting rooms of these plants might well be established.

Economic Aspects. The meat packing industry is the third largest industry in the United States in plant value of products. It operates on a very small margin, and the price of the meat it sells at wholesale is only slightly above the cost of the meat in the form of livestock because of the large volume of meat handled and the complete use of by-products.

By-products from animals slaughtered by farmers and custom slaughterers generally are not used, because a large number of animals is required to get a sufficient volume of by-products to make their use worth while.

On the surface the question might well be asked why the large meat packers should not handle all of the nation's meat. For many years they handled most of it, and their plants were established in large cities in the midwest. Competition from smaller packers caused a decentralization, and this decen-

tralization movement is still in progress. It appears that the locker plant movement is causing further decentralization, and rising transportation costs may make this further decentralization advisable.

From the standpoint of meat storage, the development of the locker plants over the United States is very important. Using locker plant facilities, farmers can slaughter and have their meat processed in the summer months as well as in the customary winter months. In the past farmers have slaughtered hogs during the winter months and have home-cured the pork for use during the rest of the year. There was considerable waste to this system, as the meat often spoiled around the bone or got too salty to be palatable. A beef was usually slaughtered and fresh meat was eaten for a time, and the rest was canned for use during the warm months. Fresh beef during the summer had to be purchased from retail meat markets. During the summer the livestock producer had to buy fresh meat from the retail meat market and pay for all the services and margins involved.

When a livestock producer sends his livestock to market he has to pay transportation costs, insurance, yardage fees, and commission fees. If he buys meat in a retail meat market which came from his own livestock, he would pay a price which included the above charges plus the packer's small margin, more transportation costs, and the wholesaler's and retailer's margins. Maybe placing meat from his own livestock

into a locker would be cheaper than sending his livestock to market and buying meat in the retail butcher shop. Many people get satisfaction from knowing the source of the meat they eat.

Many agencies today are devoting much time and effort to consumer education. Housewives are being taught the many different grades of food products, how to prepare and use frozen foods, how to determine a product's quality, etc. Locker plants are helping in this program with information on the freezing and use of meats, fruits, and vegetables. They are stressing that freezing a product does not enhance its quality. If a product is to have a high quality when it comes out, it must be a high quality product when it is put in the locker. Because of this, today's families are becoming more quality conscious.

Many urban residents are renting lockers. They own a farm, know a farmer, or have connections so that they can obtain produce from the farm or at wholesale prices. By buying at wholesale they have more purchasing power with which to buy other goods, and they are usually getting and eating a high quality product.

The economy as a whole stands to benefit from the development of locker plants. Everyone should be alert for changes which may come. Our population is expanding and people are eating more meat. Many will rent lockers and many will continue buying their meat at the corner meat

market. It will take time for locker plants to sell some people on frozen foods and to develop local sanitary slaughtering facilities. Locker plants should consider cooperating in some way in utilizing the valuable by-products. Some butchers may have to move to the locker plant or start a plant of their own. Some people may have to change their jobs and some may have to shift to other types of work.

Conclusions. Six percent of the locker plants in the sample had their own slaughtering facilities. Eleven percent of the locker plants bought live animals, slaughtered them or had them slaughtered, and sold the meat at wholesale to locker patrons or home freezer users. Local farmers and local livestock auctions furnish most of the animals to the locker plants.

On-the-farm slaughtering was decreasing and custom slaughtering was increasing. The locker operators stated that much of the slaughtering done by custom slaughterers was done in unsanitary buildings. Locker plants should investigate the possibilities of offering sanitary slaughtering facilities to their communities.

Eighty-nine percent of the locker plants in the sample sold meat at wholesale, plus a small handling charge, to locker patrons and users of home freezers. The normal mark-up was two to three cents per pound. Meat packers furnished most of the meat to these plants.

One rendering company in Michigan bought the by-products from over one-half of the locker plants which were visited. The big meat packers derive a large income from the use of by-products, and it seems that locker plants should consider the possibility of disposing of their by-products cooperatively.

Slaughtering charges varied considerably from plant to plant. Custom slaughterers and locker plants have charged what the traffic would bear; consequently, locker patrons in 1947 often paid as high as $15.00 for having a steer slaughtered. Everyone having livestock slaughtered should learn what hides, pelts, heads, livers, etc., are worth before consenting to let the slaughterer have them to pay for his service.

CHAPTER VI

SALES OF MEAT AND FROZEN FOODS AT RETAIL

Sales of Meat at Retail. It has been mentioned previously that over one-half of the locker plants in the sample sold groceries and meats at retail. A retail meat trade worked out well in most locker plant operations. Locker patrons many times found that they did not have the kind of meat in their lockers that they wanted and they then bought it at the locker plant. A frozen food box in the locker plant also offered the locker patron frozen foods to supplement the food he had stored in his locker, and it provided the locker plant owner with an additional source of income.

Fifty-five percent of the thirty-six plants in the representative random sample sold meats at retail. Sixty-one percent sold frozen foods at retail. The volumes of meats and frozen foods sold at retail varied as did the size of the plants and the volumes of processing.

In the group of locker plants which sold meats at retail, Table IV shows the average amounts of meats sold and the respective average mark-up.

Estimates Were Used. The averages given in Table IV were computed from estimates given by the plant managers. A very small percentage of the locker plants kept records and knew, in an itemized way, exactly how much income was received

Table IV - Average Number of Pounds of Fresh Meats Sold at Retail and the Average Percentage Mark-up in Michigan's Frozen Food Locker Plants in 1947

Kind of Meat	Average Quantity Sold	Average Percentage Mark-up
	(pounds)	(percent)
Beef	46,908	22
Veal	4,146	24
Pork	18,928	22
Lamb and Mutton	1,258	23
Pork Sausages	2,045	24
Bacon	3,451	23
Cold Cuts	12,626	27

from their various services and how much was paid for each group of expenses. It appeared that the lack of itemized bookkeeping was one of the weaknesses of the present organization of most of the locker plants in Michigan. Many plant owners and managers said as long as receipts were so much above expenses they did not worry how much each service brought in or cost.

Pounds of Meat Sold at Retail. It has been mentioned that the amounts of meat sold at retail varied greatly. The amount of beef sold varied from a low of 6,000 pounds to a high of 200,000 pounds. The percentage mark-up varied from 10 to 30 percent. The amount of veal sold ranged from 1,000 pounds to 12,000 pounds. The mark-up on veal ranged between 20 and 30

percent. The amount of pork sausages sold ranged from 200 to 10,000 pounds, and the mark-up from 20 to 30 percent. The amount of bacon sold varied from 500 to 12,000 pounds and the mark-up from 17 to 30 percent. The quantities of cold cuts sold varied from 50 to 75,000 pounds, and the mark-up from 20 to 33 1/3 percent.

Lowered Mark-up. Many of the locker plant operators, who had sold meats at retail for years, reported that they could not use their old standard mark-ups in 1947. They said in previous years they always marked up beef cuts a certain percentage and bacon another definite percentage. In 1947 the cost of food and meat caused them to use a lower mark-up which would move their meats.

The locker plants which sold frozen foods started selling them mainly in 1947. Some plants sold them before this, but 1947 seemed to be the year when most of the plants began. The mark-ups on frozen foods ranged from 20 to 30 percent. Some plants added 10 cents per pound to the cost price.

Several locker operators stated that they had entered the locker business so that more customers could be drawn into their established store and purchase more groceries and meats. Other operators said they added groceries and meats to their locker business for similar reasons. At the time the field work was being done the locker operators were asked the approximate percentage of retail meat sales made to locker renters. Results from this question showed that on the

average 38 percent of the meat sold at retail was sold to locker renters. This percentage varied from 10 to 90 percent of retail meats being sold to locker renters.

Frozen Foods in the Future. A bright future seems to loom for the handling of frozen foods by the locker plants. They can either process and freeze foods for sale, or they can handle frozen foods prepared by other firms. Some locker plants could become community warehouses for large frozen food companies.

When the field work for this study was being done, a locker plant was visited which had developed a huge frozen food business. The owners of the locker plant also owned a blueberry farm and a turkey farm. Both blueberries and turkeys were processed at the plant, frozen, and sold at retail. Locker plants should think about supplementing their present business with a phase of this sure-to-come frozen food business.

Conclusions. Over one-half of the locker plants sold groceries and meats at retail. These businesses worked in well with the locker business. One supplemented the other. Sixty-one percent of the locker plants sold frozen foods at retail. The frozen food business also worked in well.

The plants that sold meat at retail in 1947 said they had to abandon their old standards when marking up meats. High meat prices caused them to adjust the mark-up downward so that the meat would sell.

Some locker plants have started processing, freezing, and selling frozen foods. Doing this stabilized the work load for plant employees and should supplement the plant income. Locker plants should watch developments in the frozen food field and be prepared to enter it further.

CHAPTER VII

POUNDS FOOD PRODUCTS PROCESSED IN 1947

Processing volumes varied from plant to plant. Beef, pork, veal, lamb, and mutton were the food products which constituted the largest volume processed in most plants. Averages showed that these red meats made up two-thirds of the total processing volumes.

Red Meats. In nearly all locker plants the managers estimated that they processed more beef than they did pork. Here again the lack of sufficient records kept by locker plants prohibited one from determining exactly how many pounds were actually processed. The volume of meats processed per locker plant differed from plant to plant because of size of plant, location, aggressiveness of plant manager and other reasons. Table V shows how the volume of beef processed per plant varied.

Of more value for comparisons is Figure 13 which shows the pounds of beef processed per locker. As the figure shows, 37 percent of the plants processed between 100 and 149 pounds of beef per locker per year. The average number of pounds of beef processed per locker in 1947 for all plants in the sample was 138 pounds.

It has been mentioned that very little veal was placed in frozen food lockers. From the estimates of the locker operators, a smaller amount of veal was placed in lockers in 1947 than previously. Probably the reason for this was

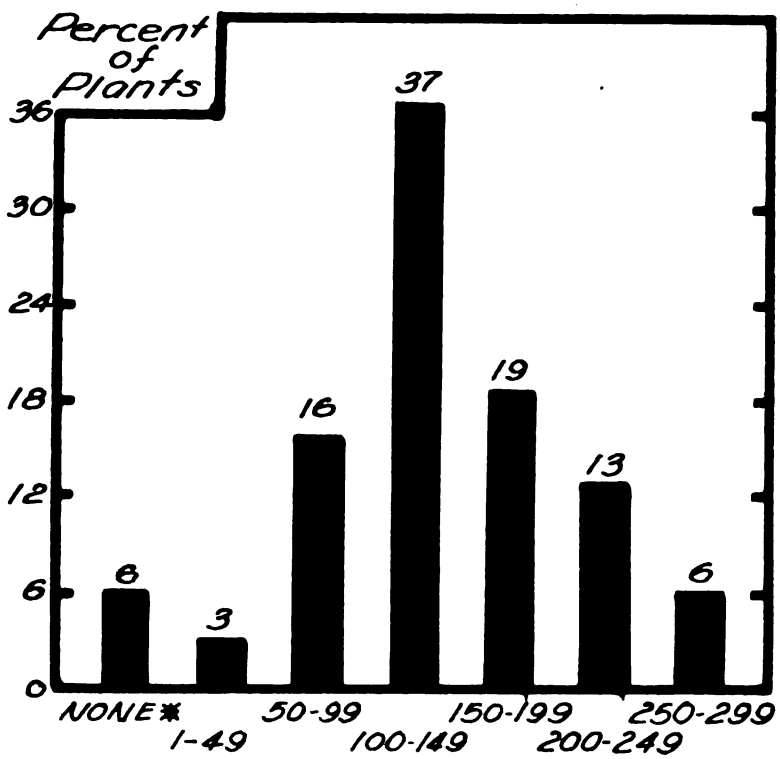

FIGURE 13. POUNDS OF BEEF PROCESSED PER LOCKER - 32 PLANTS

* SIX PERCENT OF THE PLANTS DID NOT HAVE PROCESSING FACILITIES.

FOUR PLANTS DID NOT GIVE ESTIMATES.

THE AVERAGE NUMBER OF POUNDS OF BEEF PROCESSED PER LOCKER WAS 138.

Table V - Beef Processed per Plant in Michigan in 1947, Frequency Distribution

Amount of Beef (pounds)	Plants (percent)
None	6
1 - 19,999	16
20,000 - 39,999	14
40,000 - 59,999	14
60,000 - 79,999	16
80,000 - 99,999	6
100,000 - 119,999	6
120,000 - 139,999	11
140,000 - 159,999	8
160,000 - 179,999	3
Total	100%

Table VI - Veal Processed per Plant in Michigan in 1947, Frequency Distribution

Amount of Veal (pounds)	Plants (percent)
None	6
1 - 499	27
500 - 999	6
1,000 - 1,499	16
1,500 - 1,999	11
2,000 - 2,499	14
2,500 - 2,999	8
3,000 - 3,499	3
Over 4,000	9
Total	100%

the high prices of veal calves on the livestock markets in 1947. Table VI shows how the poundage of veal processed per plant ranged from zero to over 10,000 pounds.

Figure 14 shows the pounds of veal processed per locker in 1947. The plants in the sample which did no processing are grouped with plants which processed no veal in 1947. Figure 14 shows that there was no similarity of veal to beef in volume processed. The average number of pounds of veal processed per locker was 3.3 pounds. The high was 9 pounds per locker and the low was zero.

The volume of pork processed in 1947 was lower than that of beef. There were variations in the amounts processed as there were for beef and veal. Table VII shows how the poundage of pork processed per plant varied.

Table VII - Pork Processed per Plant in Michigan in 1947, Frequency Distribution

Amount of Pork (pounds)	Plants (percent)
None	6
1 - 19,999	30
20,000 - 39,999	22
40,000 - 59,999	27
60,000 - 79,999	3
80,000 - 99,999	3
100,000 - 119,999	0
120,000 - 139,999	6
140,000 - 159,999	3
Total	100%

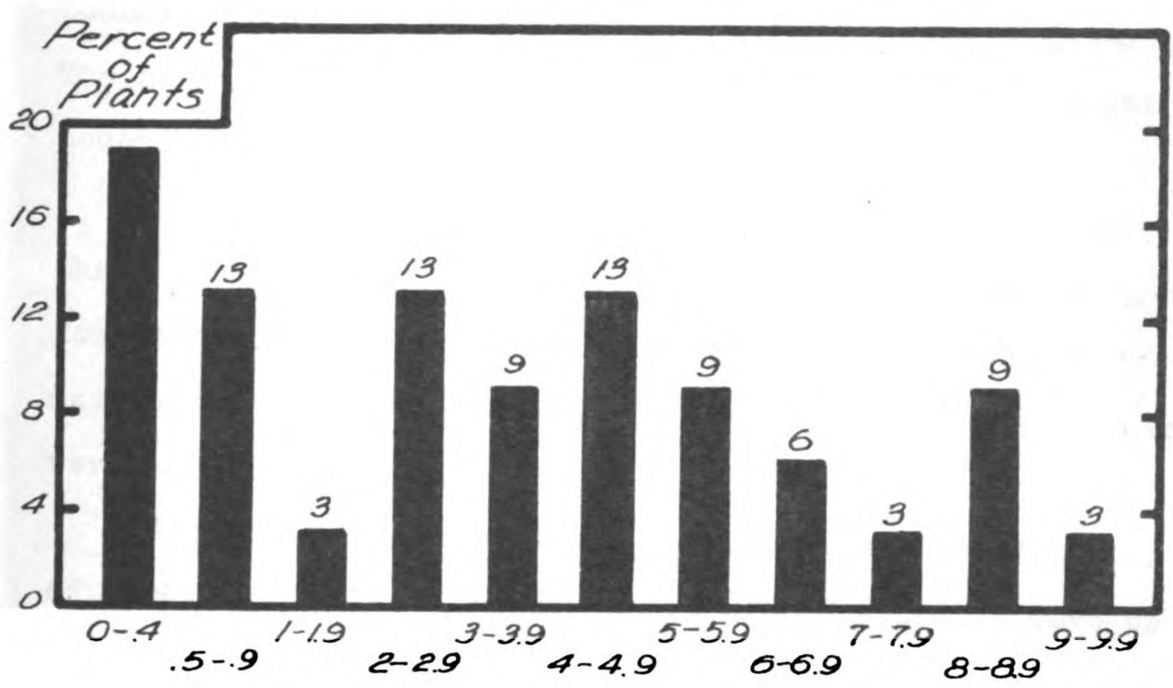

FIGURE 14. POUND OF VEAL PROCESSED PER LOCKER - 32 PLANTS.

SEVERAL PLANTS DID NOT PROCESS ANY VEAL, AND IT WAS REPORTED THAT THE STORAGE OF VEAL WAS SMALLER IN 1947 THAN USUAL. THE PRICE OF VEAL CALVES WAS HIGH IN 1947 AND THIS FACT PROBABLY ACCOUNTS FOR THE SMALL AMOUNT STORED.

Figure 15 shows the percent of plants which processed various amounts of pork per locker. The average number of pounds of pork processed per locker in 1947 was 77 pounds. The high volume was 204 pounds per locker and the low was 3 pounds per locker.

Locker plant managers reported that there was almost three times as much veal stored as lamb and mutton. Sixty-four percent of the plants processed less than 500 pounds of lamb and mutton. On a per locker basis only tenths of pounds were sometimes reported.

Six percent of the plants processed over 6,000 pounds of lamb, but on a per locker basis only 5.5 pounds were processed. These data confirm once more that very little lamb and mutton is consumed in the mid-west when compared to beef and pork. The volume processed per locker ranged from a high of 7 pounds to zero. The average poundage of lamb and mutton processed per locker was 1.3 pounds (Figure 16).

Fish and Game. The volume of fish and game processed in 1947 was almost twice as large as the volume of mutton, lamb, and veal combined. Game made up most of the poundage of fish and game, and venison constituted the largest volume of the game meats.

There were many plants which processed over 50 bucks in 1947. The largest number of bucks processed by one plant in the sample was 256. Although it was not possible to determine exactly the average number of deer processed, it

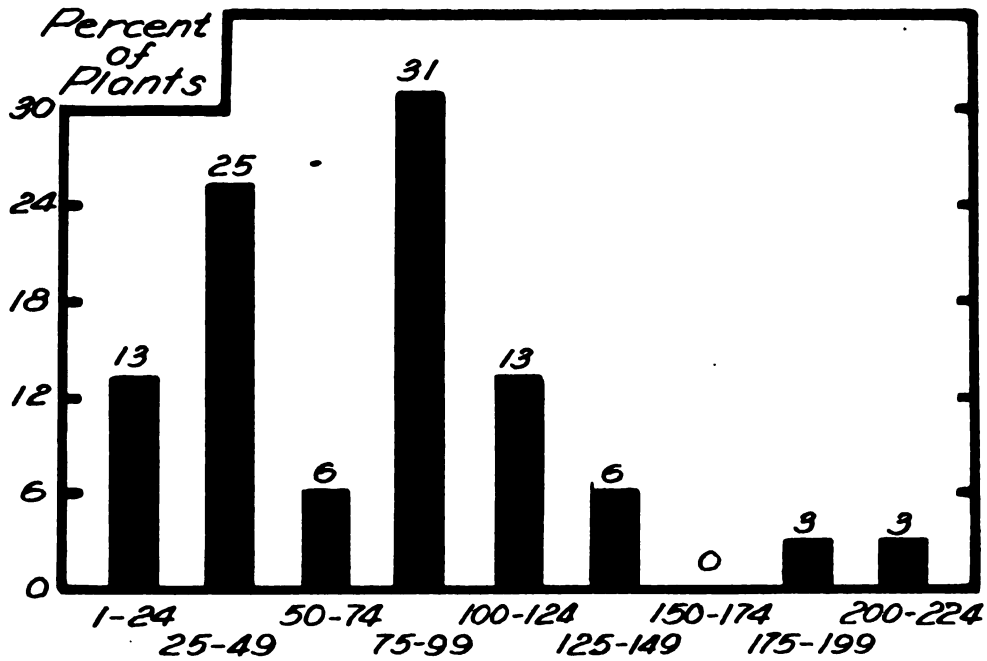

FIGURE 15. POUNDS OF PORK PROCESSED PER LOCKER - 32 PLANTS.

THE AVERAGE NUMBER OF POUNDS OF PORK PROCESSED PER LOCKER WAS 77.

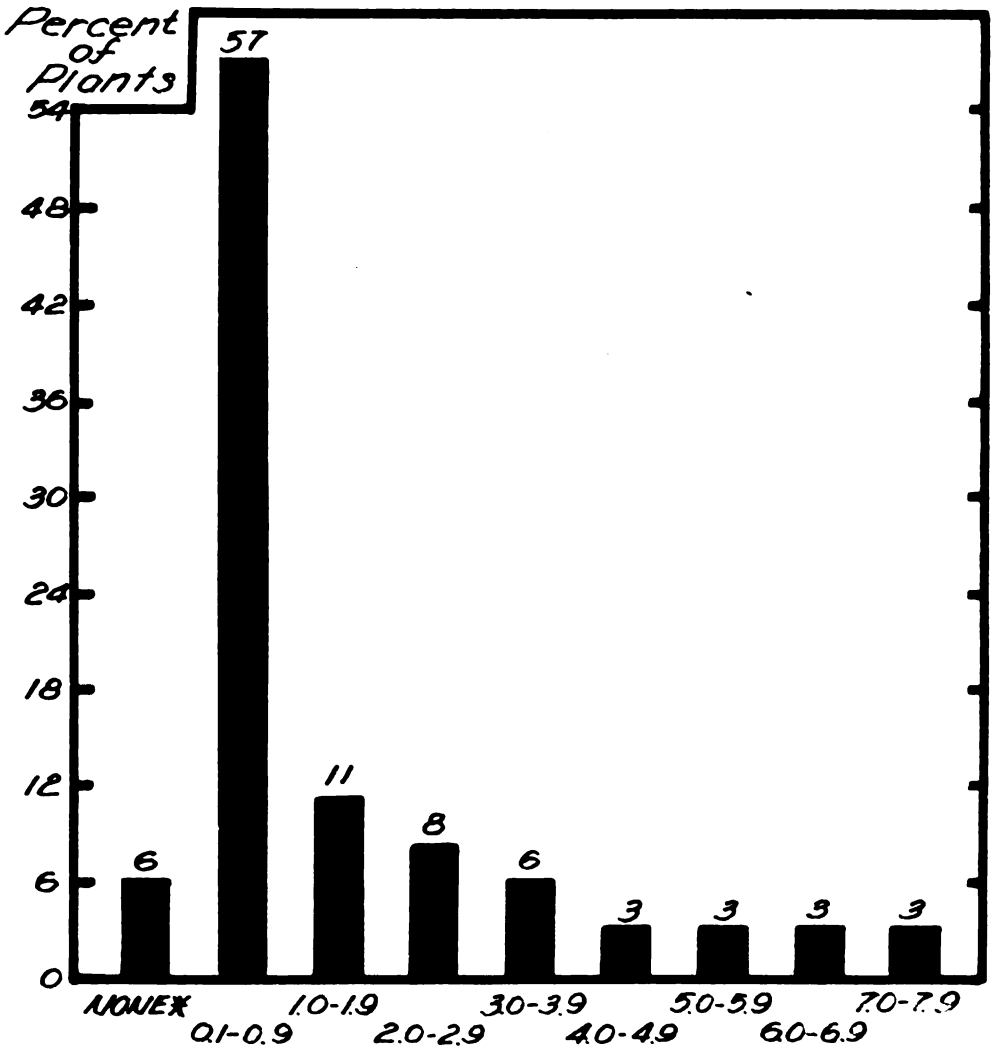

FIGURE 16. POUNDS OF LAMB AND MUTTON PROCESSED PER LOCKER — 32 PLANTS.

* SIX PERCENT OF THE PLANTS DID NOT HAVE PROCESSING FACILITIES.

THE AVERAGE NUMBER OF POUNDS PER LOCKER WAS 1.3.

is estimated that 50 bucks would be fairly close. The field work indicated that over ten times as much deer as fish were processed.

Table VIII shows a breakdown of the volume of fish and game processed in the sample plants in 1947. It has been mentioned that many locker managers did not like to process fish. About as many managers disliked processing deer. Some plants charged on the per head basis, and $5.00 per head was the modal charge.

Table VIII - Fish and Game Processed per Plant in Michigan in 1947, Frequency Distribution

Amount of Fish and Game	Plants
(pounds)	(percent)
None	6
1 - 499	8
500 - 999	14
1,000 - 4,999	39
5,000 - 9,999	19
10,000 -14,999	8
15,000 -19,999	3
Over 20,000	3
Total	100%

Figure 17 shows the pounds of fish and game processed on a per locker basis. The average number of pounds processed per locker was 8.4 pounds.

Coating meats with liquid wax, which hardens and forms a protective covering, has been mentioned. Some plants had

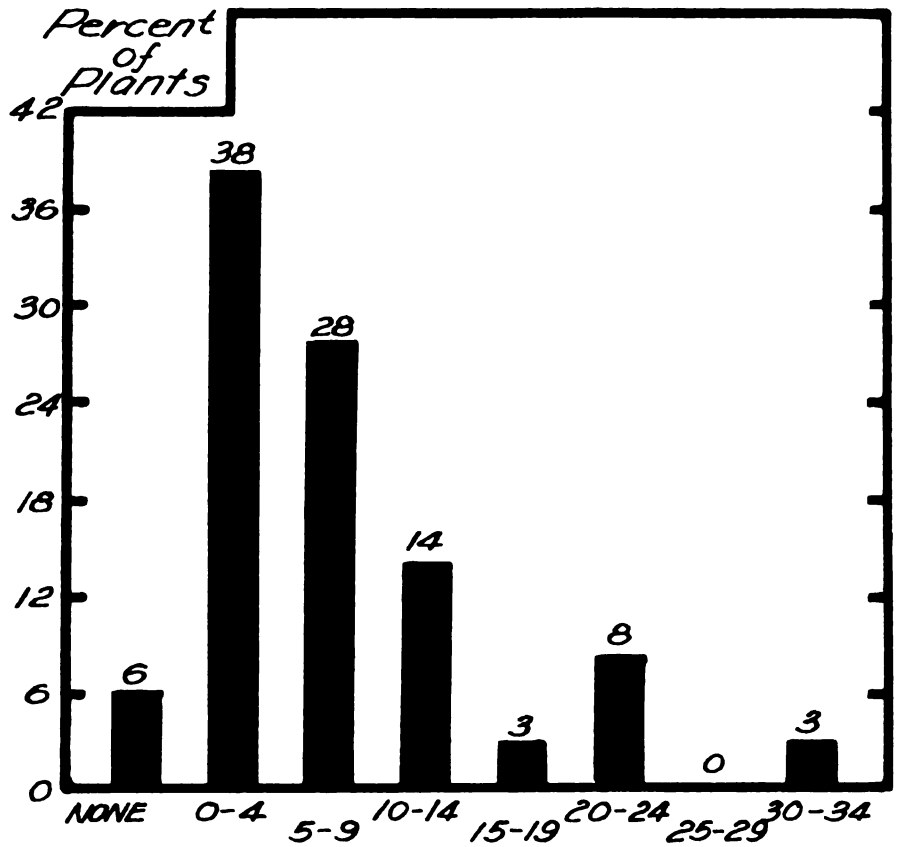

FIGURE 17. POUNDS OF FISH AND GAME PROCESSED PER LOCKER - 32 PLANTS.

THE NUMBER (AVERAGE) OF POUNDS PROCESSED PER LOCKER WAS 8.4. THERE WAS APPROXIMATELY TEN TIMES MORE VENISON THAN FISH PROCESSED.

begun using wax on fish and reported it worked very well. The use of wax was relatively new, and many experiments needed to be run. It was felt that more and more plants will use wax in the future.

Poultry. Only 22 percent of the plants in the sample dressed and eviscerated poultry. The older housewife was never confronted with the task of preparing from two to three dozen broilers for a frozen food locker. She probably had to dress from two to four chickens when several guests were coming for dinner, but this was not considered too large a job because her mother had done the same thing. Today consumers are demanding and using more and more services. Many of the younger housewives dislike dressing and drawing poultry and are willing to pay experienced personnel for this service. Therefore, it seemed that the percentage of locker plants dressing and drawing poultry should have been larger than 22 percent.

The percentage was not larger because locker plant managers, like many housewives, did not like to do the job. Modern and adequate equipment makes dressing and drawing relatively simple and permits the locker plant to do a good job. One does not dislike doing a task nearly as much when he can do it efficiently and well. If some of the locker plants not now dressing and drawing poultry would change their attitudes, obtain equipment, and begin this type of processing, the housewife would be pleased and, in most

cases, willing to pay for this service. The locker plant would have summer work to do when the processing of red meats is in a slack period.

Ninety-four percent of the plants in the sample wrapped and froze poultry. There was a large variation in the pounds processed in the different plants (Table IX).

Table IX - Poultry Processed per Plant in Michigan in 1947, Frequency Distribution

Amount of Poultry	Plants
(pounds)	(percent)
None	6
1 - 499	22
500 - 999	16
1,000 - 2,999	19
3,000 - 4,999	14
5,000 - 6,999	11
7,000 - 8,999	3
9,000 - 10,999	3
11,000 - 12,999	3
19,000 - 20,999	3
Total	100%

Lard. Thirty-eight percent of the locker plants in the sample did not render lard. The 62 percent who did render had widely ranging volumes. The smallest amount rendered that was reported was 200 pounds, and the largest was 30,000 pounds. Table X shows the percentage of plants in the sample which rendered different volumes of lard.

Table X - Lard Rendered per Plant in Michigan in 1947, Frequency Distribution

Amount of Lard (pounds)	Plants (percent)
None	38
1 - 499	3
500 - 999	6
1,000 - 2,999	11
3,000 - 4,999	11
5,000 - 6,999	8
7,000 - 8,999	3
9,000 - 10,999	6
11,000 - 12,999	5
13,000 - 14,999	3
15,000 - 16,999	3
Over 17,000	3
Total	100%

On-the-farm rendering was decreasing as was on-the-farm slaughtering. It is felt that this was not due to the economic condition of the farmer at this time. The keeping of rendering equipment on the yearly basis to be used once and maybe twice per year was not liked by many farmers. Rendering at the farm can be an onerous task. The kettle must be cleaned and moved; the fat must be cut; a fire must be built and tended; and the lard must be stirred, even if the smoke blows in the stirrer's eyes; and hot fat must be run through the press. The weather is usually cold. One big advantage to this is that the farmer knows his lard is made from his animal's fat. Several locker renters who have had their

fat rendered at locker plants were not well satisfied with the lard.

Although the investment in a lard kettle, a press, and other equipment necessary for lard rendering was greater than in smoking equipment, it seemed likely that this service should and will occupy an increasingly important place in the locker plants in Michigan. It was not implied that all locker plants should render lard but that more might well start offering this service.

Curing and Smoking. Plants curing meats also smoked meats; plants smoking meats also cured meats. These services went hand-in-hand, and in most cases one charge was levied for doing both. The operators were asked to separate their combined charge for the two services and their answers are presented in Chapter III.

Fifty-six percent of the sample plants cured and smoked meats. As with other processing volumes, the pounds of meats cured and smoked per plant varied considerable (Table XI).

The minimum amount of meat cured and smoked by the sample plants was 1,200 pounds; the maximum amount reported was 50,000 pounds.

Grinding of Pork and Beef. It was easier for locker plant managers to approximate the poundage of both sausage and hamburger ground than it was for them to give an approximate total for each, so the totals for each were combined for each plant. Six percent of the plants did no grinding

Table XI - Meats Cured and Smoked per Plant in Michigan in 1947, Frequency Distribution

Amount Cured and Smoked (pounds)	Plants (percent)
None	44
1 - 4,999	11
5,000 - 9,999	14
10,000 - 14,999	10
15,000 - 19,999	0
20,000 - 24,999	3
25,000 - 29,999	6
30,000 - 34,999	6
35,000 - 39,999	0
40,000 - 44,999	3
45,000 - 49,999	0
50,000 - 54,999	3
Total	100%

Table XII - Sausage and Hamburger Ground per Plant in Michigan in 1947, Frequency Distribution

Amount of Sausage and Hamburger (pounds)	Plants (percent)
None	6
No estimate	6
1 - 4,999	24
5,000 - 9,999	22
10,000 - 14,999	19
15,000 - 19,999	6
20,000 - 24,999	3
25,000 - 29,999	0
30,000 - 34,999	8
35,000 - 39,999	3
Over 40,000	3
Total	100%

and six percent gave no answer stating they had no records and would not attempt to approximate the pounds of meat they ground in 1947.

For the eighty-eight percent who did grind meats, 20 pounds per locker was the average. The minimum amount reported was 1,950 pounds, and the maximum was 54,000 pounds (Table XII).

Fruit and Vegetables Frozen. None of the locker plants in the representative random sample blanched vegetables. There are plants, however, which do offer this service. Some of the sample plants packed bulk fruit and vegetables into cartons. All of the plants were equipped to freeze fruits and vegetables. Eighty percent of the plants gave estimates as to the number of quarts and pints of fruits and vegetables frozen. In this thesis all pints were converted to quarts and it was assumed that one quart weighed one pound.

In all the plants visited, the renter had to prepare his fruits and vegetables before bringing them to the locker plant to be sharp frozen and placed in his locker. Some plants sold bulk fruits and vegetables. Most of the locker operators stated that there were more pounds of fruits than vegetables placed in lockers. The leading fruits (not in order of importance) were strawberries, peaches, cherries, blueberries, and raspberries. The leading vegetables were corn, peas, spinach, cauliflower, and broccoli.

The average number of quarts of fruits and vegetables frozen per locker in the sample plants was 21.5. One plant estimated it froze 30,000 quarts in 1947; it had the largest volume reported. Another plant estimated it froze only 600 quarts; it had the smallest volume in the sample. There probably are locker plants in the state which froze larger volumes of fruits and vegetables and processed more pounds in each of the categories mentioned in this chapter. Pounds of processing and freezing are presented so that one can have an idea of the average volumes. Table XIII also helps in this respect.

Table XIII - Fruits and Vegetables Frozen per Plant in Michigan in 1947, Percentage Distribution

Amount Frozen	Plants
(pounds)	(percent)
No estimate	17
1 - 4,999	36
5,000 - 9,999	6
10,000 - 14,999	13
15,000 - 19,999	11
20,000 - 24,999	3
25,000 - 29,999	11
30,000 - 34,999	3
Total	100%

Conclusions. Most of the locker plants in Michigan did not keep detailed records, and practically all of the data presented in this chapter were obtained as estimates from locker plant operators.

Table XIV shows the average number of pounds of processing per locker in 1947.

Table XIV - Average Number of Pounds of Food Products Processed per Locker in Michigan in 1947

Food Product Processed	Average Number per Locker
(kind)	(pounds)
Beef	138.0
Veal	3.3
Pork	77.0
Lamb and Mutton	1.3
Fish and Game	8.4
Poultry (Wrapped and Frozen)	8.5
Lard Rendered	11.1
Meats Cured and Smoked	28.4
Pork and Beef Ground	20.0
Fruit and Vegetables Frozen	21.5
Total	317.5

The volume of processing per plant varied because of size and location of plant, aggressiveness of plant manager, equipment, and experience of personnel. Table XIV shows that 317.5 pounds of food products were processed per locker in the average plant. One hundred times more beef than lamb and mutton was processed per locker.

The Department of Sociology and Anthropology at Michigan State College estimated that there were 5.8 million people in Michigan on July 1, 1947. The average per capita consumption of meat in 1947 in the United States was slightly

over 155 pounds. Assuming that each of the 5.8 million people ate 155 pounds of meat, there were 910 million pounds of meat consumed in Michigan in 1947.

It was estimated early in this thesis that there were probably over 215,000 lockers in all of the locker plants in Michigan. Table XIV shows that 285 pounds of meat were processed per locker in the sample plants in 1947. If it can be assumed that each plant in the state processed an average of 285 pounds of meat per locker, the total amount of meat processed in 1947 was 61 million pounds. This means that between 6 and 7 percent of the meat consumed in Michigan in 1947 was processed in locker plants.

Many locker plants did not do certain types of processing because they disliked the work. They often disliked the work because they were not properly equipped to do it. In the United States each man can do as he wishes, but profits keep businesses running. In many plants profits can probably be increased if additional food products are processed. With additional processing the work load during the year can be evened, plant personnel can be used more uniformly, and additional income can be obtained.

CHAPTER VIII

RECEIPTS FROM DIFFERENT OPERATIONS FOR 1947

Source of Receipts. Locker plants obtain receipts from locker rentals, processing operations, commissions on wholesale sales, margins on retail sales, sales of hides and pelts, sales of bones, suet, and inedible offal, slaughtering, and margins on the sale of sugar, containers, and locker supplies. In most plants the receipts from locker rentals and from processing operations were the major sources of income.

When locker plants were run in conjunction with grocery stores and retail meat markets, it was usually difficult for the managers to differentiate the receipts. If a retail meat market was run with a locker plant, there were bones and suet from each business. Usually these items were sold to one concern and separate accounting was not attempted. If groceries were sold, the sale of sugar, containers, and other locker supplies was usually kept in the grocery account. Many plant owners felt they could not afford a large cash register which permitted ringing up sales to different accounts.

This study did not attempt to determine which plants were making profits and which were not. Expense data were not collected. Receipts were collected only so that an idea could be gotten as to the source of the income and how important each source was. Twenty-two records, which had

complete receipt data, were selected and used in computing the data given below.

In finding the percent that each source of income was of the total income, all receipts in one category in the twenty-two records were added together and divided by the sum of the total receipts of all of the twenty-two.

Table XV shows the relative importance of each source of income. The receipts from locker rentals were one and one-half times as much as the receipts from processing operations. The receipts from these two sources made up four-fifths of the total gross income. Locker rental and processing receipt data in the fourteen records not used in this analysis were complete. Analysis of these records showed

Table XV - Average Percent of Locker Plant Income From Major Sources, Michigan, 1947

Source of Income	Percent of Total Income
(source)	(percent)
Locker Rentals	48
Processing Operations	32
Wholesaling Meat	6
Retailing Meat	6
Sale of Bone, Suet, Inedible Offal	5
Sale of Hides, Pelts - Slaughtering	(less than ½)
Other Sources:	
Sale of Containers)	
Sale of Sugar)	
Sale of Appliances)	3
Sale of Locker Supplies)	
Total	100%

that receipts from rentals and processing comprised about the same percentage of total receipts as did those in the twenty-two which were used. When the field work for this study was done, several of the plant managers stated that they thought they were making their profits from processing operations. There was not enough data collected in this study to determine if they were correct. Results from a study made in New York by Cornell University showed that locker plants just about break even on processing operations.[8/] The percentages that receipts from processing operations were of total gross receipts in New York were higher than in Michigan. This suggested that some locker plants in Michigan were just breaking even or losing some on processing operations.

Many plant managers stated that they had peaks in their processing operations. During these times additional help had to be used. They stated that there were slack times when the regular help was not kept busy.

Conclusions. Businesses should know at all times which operations are making a profit and which are not. The unprofitable ones should be made profitable or eliminated. The locker industry, in general, has processing peaks for meat and fruit.

An elaborate system of records need not be kept to enable a business to determine the profitableness of an

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8/ Farm Economics, March, 1948, Cornell University, Ithaca, New York.

operation. Certainly some records must be kept. When this study was made some locker plants kept only total receipt and expense data. It was impossible for them to know which operations made and which ones lost money.

Locker plant managers should attempt to level out their processing peaks by urging their patrons to change the seasonableness of their produce to be processed. Not much can be done with fruit, but a lot can be done with meat. By eliminating the processing peaks the labor investment, one of the big cost items, could be used more efficiently.

Referring to Table XV, gross income can probably be increased from the following sources: processing, wholesaling, retailing, slaughtering, and other sources.

CHAPTER IX

SUMMARY AND CONCLUSIONS

The first locker plant in Michigan began operations in 1938. Since 1942 locker plant numbers have grown rapidly. There were over 215,000 lockers in the 375 plants operating in May, 1948. Over $12,000,000 were invested in these 375 plants, and only one-fifth of them were operated as separate enterprises.

Locker plants are one of the fastest growing branches in the food industry, and many variations in plant practices were observed. A majority of the plants did not keep detailed records, and it was difficult for these plants to determine which operations were profitable. Locker rental rates, processing rates, processing volumes, and services offered varied; and size of plant, type of ownership, and location were not discernible criteria.

Since locker plants have opened, more locally produced livestock have been slaughtered near the home community. Slaughtering by the locker plants has been small in volume, but custom slaughterers have been increasing their slaughtering volume. Many new custom slaughterers have begun operations. Locker plants appear to be causing a further decentralization in the marketing of livestock.

Many locker plant managers reported that patrons brought meat which had not been handled properly during the slaughtering process to their plants for processing. Some custom

slaughterers and farmers were not properly equipped to do a sanitary slaughtering job. Many locker plants would be doing a service to their community if they began a sanitary slaughtering service.

Receipts from locker rentals and processing services made up slightly over three-fourths of the gross income in the plants sampled. Almost one-half of the gross income was received from rentals and one-fourth from processing. Rental receipts were about one-third larger than processing receipts.

Only one-fifth of the locker plants in the sample were run as separate enterprises. Over one-half of them were associated with a grocery store or retail meat market. The other one-third either sold home lockers or were associated with ice plants or other businesses.

The use of home lockers started on a major scale in the latter part of 1947. Not much food processing was done in 1947 by locker plants for owners of home lockers; however, in 1948 the volume processed was increasing. The interviews held while doing the field work indicated that many locker plant managers were afraid that the use of home lockers would injure their business. A minority of the locker plant managers saw a bright future in the processing for these home lockers.

Most home locker owners are not properly equipped or trained to process food for their own lockers. Many of them do not raise livestock. Locker plants have the equipment

and the personnel to do a good job of processing foods, and many of them sell meat and other foods at near wholesale prices, provided they do the processing. Locker plants can increase their processing volumes if they process for home units and sell meat at a wholesale price plus a small commission. This would be advantageous for both locker plants and users of home lockers. Locker plant volumes would increase and consumers would get food at reduced prices because part of the costly distributive system from the producer to the consumer would be eliminated.

Some plants were just about breaking even on processing. An increased volume would not help them until they utilized their labor more efficiently and reduced costs. Locker plant managers reported labor peaks in their operations. The processing of meat was heavy in three to four late fall and winter months; and processing of fruits, vegetables, and poultry was heavy in two to three summer months. During these times additional help had to be hired. During the slack times the regular help was not kept fully employed. Locker plants could level out their labor requirements by encouraging patrons to have more processing done during the slack periods.

Locker plants sprang up under very favorable conditions. They had not been forced to sell their services because of meat shortages, high demands, high consumer incomes, and rationing. When the field work for this study was done,

some plants were facing increasing operating costs and keener competition. When the buyers' market returns, they will have to operate efficiently and do a real selling job.

This study showed that many locker plants should:

1. Keep more detailed records.
2. Provide more services.
3. Stabilize their work load.
4. Process for home lockers.
5. Consider keeping pace with the frozen food field as new developments occur.
6. Dispose of by-products as profitably as possible.

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APPENDIX A

A Copy of the Questionnaire Which Was Used When the Field Data Were Collected

Frozen Food
Locker Study

MICHIGAN AGRICULTURAL
EXPERIMENT STATION

Confidential
Schedula A

TO PLANT OPERATORS

GENERAL: 1. Name of plant_____ P.O.Address_____

2. Year operations began_____ 3. Ownership_____
(Private, partnership, corp., coop.)

4. Number of plants owned providing processing and storage service_____

5. Number of branch storage plants_____ Distances from central plant_____

_____, _____, _____, _____, _____.

6. Number of lockers installed: in main plant_____; in each branch plant_____.

_____, _____, _____, _____. Number of empty lockers_____.

7. Amount of bulk storage space having freezing temperatures: In main plant_____;
(cu.ft.)

in each branch plant (cu. ft.)_____, _____, _____, _____.

8. What other business is operated with the locker plant?_____
(grocery store, ice

_____
plant, meat market, etc.)

9. Total original investment in main plant and branches$_____
(covers land, plant, equip., etc.)

SERVICES: For each of the various services plant renders, indicate the rates charged.

10. Meats Jan. 1, 1948 rate per pound

Chilling, cutting wrapping, freezing	_____	Dressing and drawing	(Chickens, Turkeys, etc.) _____
Freezing, only	_____	Wrapping and freezing	(Chickens Turkeys, etc. _____
Curing	_____		
Smoking	_____		
Grinding only	_____		
Grinding & making sausage	_____		
Rendering lard	_____		

Poultry Jan. 1, 1948 rate per pound

Fish Rate per pound

Wrapping and freezing _____

Fruits & Vegetables

Blanching vegetables _____

Freezing fruits & veg. _____

11. Indicate changes in rates for services during January 1, 1947 to January 1, 1948

_____ _____

_____ _____

12. Locker Rental rates per year as of January 1, 1948:

Drawer Type			Door Type			Other (Describe)		
Size*	Tier**	Rate	Size*	Tier**	Rate	Size*	Tier**	Rate
	1			1			1	
LxWxH			LxWxH			LxWxH		
	2			2			2	
	3			3			3	
	4			4			4	
	5			5			5	
	6			6			6	
	7			7			7	

Size: Give in LxWxH in inches
Tier 1 indicates bottom row, Tier 2 is second from bottom, etc.

13. Changes in rental during January 1, 1947, to January 1, 1948:
(If a printed schedule of charges is available, obtain same and attach to this schedule)

14. What other services do you plan to provide during 1948?_____

_____

HANDLING LIVESTOCK:

15. Does plant buy animals for slaughter for resale of meat to (a) Patrons_____

If "no," omit question 16. (b)Public_____

16. Number of head and sources from which livestock were bought during the year 1947.

Source	Number of Cattle	Number of Calves	Number of Hogs	Number of sheep and lambs
From farmers				
From local livestock dealers				
From auction markets				
From terminal public markets				
From others (Name)				

SLAUGHTERING LIVESTOCK BY PLANT (If plant does no slaughtering and does not provide slaughter facilities indicate by writing "none" in following space_____ and omit questions 17, 18, 19, 20, 21, 22, 23, and 24.

17. Location of slaughter facilities: In same building with locker plant_____

In owned or leased bldg. in or near town_____

In bldg. owned and operated by several locker plants____

18. Does plant provide on-the-farm slaughtering service?_____ If so, by whom is this done? _____
(Plant employee, custom slaughter)

19. Slaughtering charge by Plant: (indicate whether charge is on a head, cwt., or other basis)
Cattle_____ Hogs _____
Calves_____ Sheep and lambs_____

20. Does slaughtering charge include other services? List_____

21. Number of Animals slaughtered in 1947

Month	Hogs		Cattle		Calves		Sheep and Lambs	
	Animals owned by plant *	For others **	Animals owned by plant	For others	Animals owned by plant	For others	Animals owned by plant	For others
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								
Sept.								
Oct.								
Nov.								
Dec.								
TOTAL								

* Animals plant has bought and slaughtered for resale of meats to patrons.
** Animals slaughtered for locker renters, home freezer users, and others for a fixed charge.

22. Are hides or pelts returned to farmers?_____ Retained as part of slaughtering fee?_____

23. What is paid for hides or pelts? $_____

24. How do you dispose of inedible offal?_____

Of bones?_____

CUSTOM SLAUGHTERING

25. How many custom slaughterers other than the plant itself slaughter for locker patrons?_____ Place of slaughter_____
(farm, slaughter house)

26. Rates charged: Cattle____ Calves____ Hogs____ Sheep & lambs____. Are hides or pelts returned to farmers?____ Retained by slaughterer as part of fee?____

27. Indicate changes in slaughter rates during January 1, 1947, to January 1, 1948:

_____

28. Approximate percentage of livestock slaughtered for locker storage by different agencies - 1947

Slaughtered by	Cattle %	Calves %	Hogs %	Sheep & lambs %
Farmers				
Custom slaughterers				
Locker plant				
TOTAL				

29. Do you accept for freezing and storage meat that is already cut and wrapped?

_____(yes or no)

30. Approximate percent of all meat stored in 1947 se received: Pork_____%
Beef_____%
Lamb_____%
Veal_____%

31 Is such cut and wrapped meat inspected before storage by plant operator?

Never_____ Occasionally_____ Regularly_____.

Selling Carcasses and Wholesale Cuts of Meat

32. Amount and sources of wholesale cuts and carcasses of meat bought for and sold to patrons (renters and non-renters of lockers) 1947

Bought from	Beef lbs.	Pork lbs.	Veal lbs.	Lamb & Mutton lbs	Poultry lbs.	Fish lbs.
Local farmers						
Local meat markets						
Meat packers						
Other sources						

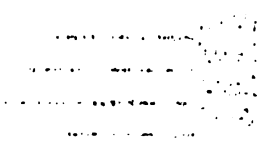
33. Pounds of meat bought wholesale for persons who did not rent lockers, 1947:

Beef____lbs. Veal____lbs. Pork____lbs. Lamb and mutton____lbs.

34. Grade of meat generally bought_____

35. Usual commission or margin on wholesale cuts of meat_____
(percent of cost price or

_____
cents per pound.)



36. About what percentage of these wholesale cuts are cut and wrapped at the plant _____%. Are sharp frozen at the plant?_____%

37. Quantity of Meats and Meat Products Sold at Retail in 1947 and Their Mark-up:

Kind	Quantities sold Fresh meat	Percent mark-up	Quantities sold Frozen meats	Percent mark-up
Beef				
Veal				
Pork				
Lamb and mutton				
Sausage				
Bacon				
_____other				
_____other				
_____other				

38. Approximate percentage of retail meat sales to locker renters_____%

To non-locker renters_____%

39. Amount of gross sales of retail meat department in 1947 $_____.

40. Do you deliver stored food from the locker to the homes of locker renters?

_____ What is the charge, if any, for this service?_____
yes or no

41. Problems encountered in operating a retail meat business with locker plant?

(List)_____

Volume Processed in 1947

42. Indicate below the pounds of food products processed in plant, 1947.

Item	For storage in lockers lbs	Not stored in lockers lbs.	Item	For storage in lockers lbs.	Not stored in lockers lbs.
Meat chilled, cut, wrapped, frozen)					
Beef			Lard rendered		
Veal			Meat smoked		
Pork			Hams and bacon cured		
Lamb			Sausage & hamburger ground		
Fish & game			Fruit frozen		
Poultry					
Dressed & drawn*			Vegetables frozen		
Wrapped & frozen**					

*Includes poundage of poultry dressed and drawn at the locker plant which may or may not have been wrapped and frozen as well at the plant.
**Includes poultry that (a) was dressed and drawn before delivery to the plant, plus (b) that which was dressed and drawn at the plant and also wrapped and frozen at the plant.

43. Indicate below the receipts from the different operations for 1947:

(a) From locker rentals $_____

(b) From processing operations $_____

(c) From commissions or gross profit on wholesale meat sales $_____

(d) From gross profit or margins on retail meat sales $_____

(e) From sale of hides and pelts $_____

(f) From sale of bones and inedible offal $_____

(g) From slaughtering charges $_____

(h) From other sources (gross profit on sale of containers, sale of sugar, etc.) $_____

TOTAL $_____