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SOME METHODS AND RESULTS OF RESEARCH IN THE MARKETING OF FRUITS AND VEGETABLES IN THE UNITED STATES

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OUR first study at Cornell of the marketing of fruits and vegetables was in 1922 when a study of the marketing of New York State potatoes was undertaken. At that time there was much dissatisfaction with prices received by producers for potatoes and considerable agitation for the establishment of more cooperative potato marketing organizations. Margins taken by potato marketing organizations were much discussed, often without a clear understanding of the size of the margin taken or of the services rendered in return. Through the study of representative potato marketing agencies, it was hoped to ascertain facts which might aid in establishing a fair conception of the necessary costs and services involved in marketing potatoes and which might aid farmers in organizing their own marketing units. Studies of several thousand farm businesses in New York State had shown that certain farmers were able to raise a bushel of potatoes or a bushel of apples with less labor and at less cost than others. It was assumed that as great variations in efficiency prevailed in the marketing, as in the production of farm products, and it was hoped that data might be obtained which would enable existing marketing units to increase their efficiency.

PROCEDURE

Just prior to the initiation of this study, a brief preliminary survey was made by Dr. Ladd to ascertain the location of some of the marketing units most likely to cooperate in this work, and a list of the names and addresses of potato dealers was obtained from various sources, such as railroad freight agents, trade organizations, and so forth. The next step was to call on one of the most progressive of the potato marketing dealers to solicit his cooperation. This visit was attended with good fortune and we were given a fair hearing which resulted in permission to examine any of the records kept by this firm. The attitude taken by this dealer may be of interest. He took the position that he had nothing to conceal

and that any unbiased publication of facts could not be otherwise than helpful to him. Dr. Ladd and I labored for one entire week, in the offices of that dealer, obtaining every item of information we could find concerning his business during the previous year. Complete records were obtained concerning each of 898 carloads of potatoes, a large number of carloads of other produce, and all of the financial transactions of the firm, including a complete profit and loss statement and a list of the property owned and operated by the firm. When these data had been tabulated, a large cooperative potato marketing organization in a nearby village was visited and similar data gathered. This material was then analyzed. Analysis of the data of these two firms gave us a fairly good idea of what records we might reasonably hope to obtain in the offices of other potato dealers or cooperative organizations and also taught us something concerning the language used by such dealers. The results of the analysis of these records were reduced to two or three simple graphs for the purpose of showing other dealers or cooperative managers what information we desired and the use we intended to make of it. Armed with these data, I went into the field during the winter of 1921-22 and obtained complete data from 17 dealers and seven cooperative associations located in the northern and western parts of New York State. It was felt that data concerning one year's operations were inadequate, so in the winter of 1922-23 data were obtained from 24 dealers and 12 cooperative associations.

You may be interested in the size of the sample obtained in this study. During 1921, the data obtained represented 41 per cent of the total volume of potatoes shipped in carload lots in the area studied, while in 1922 the data covered 38 per cent of all shipments.

RESULTS

DISTRIBUTION OF NEW YORK STATE POTATOES

It had been generally thought that the distribution of New York State potatoes was altogether too narrow, resulting supposedly in relatively low prices. These data showed that during 1921-22, 6,433 carloads of New York potatoes went to 449 cities in 21 states of the Union, a distribution exceeded at the time only by oranges and western apples. Distribution was thus shown to be much wider than was originally thought.

GRADING

There was considerable agitation for better grading of potatoes during the years 1920-23. Growers, in general, looked on grading with disfavor because they feared that the proposed grades might be too strict and render much of their crop unmarketable. A study of grading practices at country points showed that 89 per cent of the potatoes presented for sale were within the limits of the established No. 1 grade, and 6 per cent within the No. 2 grade, leaving only 5 per cent as below grade. These data indicated that the official grades were not too rigid and that growers might readily produce No. 1 potatoes with reasonable care.

WAREHOUSING

At the time of this study, there was much discussion of the need for potato storage warehouses at railroad trackside. It was thought that large profits were being made by potato dealers who were alleged to have purchased large quantities of potatoes in the fall, stored them in warehouses during the winter, and sold them in the spring. Investigation showed that New York farmers characteristically held in their own cellars approximately 91 per cent of the merchantable potatoes on hand the first of January of each year, for the period 1915 to 1923, and dealers only nine per cent. New York produces from 30 to 40 millions of bushels of potatoes annually. The actual potential storage capacity in 90 of the largest warehouses owned by dealers and cooperatives during 1921 was 119,000 bushels and only 64,000 bushels were actually stored in them that year. Several cooperative warehouses were found in which only one-third of the available storage space was used. It was apparent that trackside storage facilities for potatoes were more than ample and that heavy losses were likely to be incurred if further facilities were made available, especially since an excellent highway system was rapidly developing throughout the state.

Analysis of the data indicated that both dealers and cooperatives were likely to over-invest in potato warehouses. A small warehouse, 20 by 40 feet, and costing from \$1,200 to \$1,500 was usually more than ample. Yet the average investment in warehouses by cooperatives in 1921 was \$4,323 (or \$55 per carload handled) and for dealers \$1,884 (or \$29 per carload handled). Over-investment in warehouses is relatively serious since it is a permanent investment, the expense of which must be borne each year. Maintenance

of potato warehouses approximated 10 per cent annually of the original cost. On this basis, cooperatives had to meet an outlay of \$5.50 per carload compared with \$2.90 by dealers. This difference of about five cents per bushel was ordinarily more than enough to induce the average grower to sell to the dealer rather than through the cooperative.

MARGINS

An analysis of gross sales and actual costs showed the distribution of the wholesale price of potatoes during the two seasons to be as shown in table 1.

Table 1. Distribution of Wholesale Price of Potatoes, Western New York Shipping Agencies 1921-22* and 1922-23**

Item	Percentage distribution	
	1921-22	1922-23
Paid to grower.....	74.32	61.87
County shipper's operating costs.....	11.35	17.96
Freight.....	14.05	18.96
Claims.....	1.45	1.40
Losses.....	1.17	0.19

* Twenty-four shipping agencies.

** Thirty-four shipping agencies.

It will be noted that, on the average, losses were incurred during both years. It happened that these were years of heavy production when prices were relatively low and when the price trend was downward throughout each season. Both dealers and cooperatives showed small losses as the result of their operations for the two years.

COST OF OPERATION

A comparison of the costs of operation per bushel of potatoes handled showed the average cost of marketing by cooperatives in 1921 to be one-tenth of one cent less than that of dealers. In 1922, the dealers handled potatoes for nine-tenths of one cent less per bushel than did the cooperatives.

A comparison of prices paid to growers indicated a similar situation. In 1921, dealers paid farmers an average of 94.7 cents per bushel, while cooperatives paid 91.9 cents. In 1922, dealers paid 54.7 cents per bushel, while cooperatives paid 52.7 cents. In this connection, it should be pointed out that the cooperative organiza-

tions were, in every case, endeavoring to pay off annually a large part of the indebtedness incurred in the purchase or construction of warehouses. It is likely that many cooperatives attempted to pay off their indebtedness in too large installments resulting in relatively large deductions from the price eventually paid to the grower-members. It should also be remembered that all of the cooperative organizations had been recently organized and were relatively inexperienced whereas many of the dealers had been in the business for a number of years.

STANDARDS OF COMPARISON

It is probable that the most important result of this study was the evolution of a standard which enabled the manager of either a cooperative organization or a dealer organization to compare his own business with that of similar organizations and ferret out the weak spots in his own organization. At the same time, it acquainted the growers with the items of expense which must be met in the marketing of potatoes, whether by cooperative or private organizations.

This study also brought out the fact that the accounting systems followed by many organizations were entirely inadequate, poorly kept, and badly in need of revision. The failure of several cooperative associations can, undoubtedly, be traced to failure to keep accounts which would give a true picture of the financial condition of the organization.

It was found that only a small number of these marketing organizations made use of their warehouses throughout the year, thus obliging the potato business to absorb the entire warehouse expense. It was particularly noted that those organizations, whether dealer or cooperative, which also dealt in farm supplies, such as feed, fertilizer, seeds, and so forth, were in a much healthier condition than those which confined themselves to marketing one commodity only.

In general, this study answered in the affirmative the question as to whether a potato marketing cooperative association could operate as efficiently as a well established dealer. It emphasized the fact that the type of organization was probably not the important factor but that the primary concern was that the organization, of whatever type it might be, should follow good business principles and be efficiently managed. So much for the potato

study. Now I wish to discuss the next link in the marketing chain—the city wholesaler and jobber.

COSTS AND PRACTICES OF DISTRIBUTING FRUITS AND VEGETABLES IN TERMINAL MARKETS

The average length of haul per carload of fruits and vegetables coming to New York City is approximately 1,500 miles, and a goodly share is hauled from California and Washington, some 3,300 miles away. With farmers and shippers at country shipping points so widely separated from wholesalers and jobbers in city markets, the complexity of modern fruit and vegetable marketing is not easily understood by either party. Failure to appreciate the factors making for the wide divergence between prices reported as paid in terminal markets and those received by the farmer tends in many cases to foster a feeling that someone is obtaining an undue advantage at the expense of both producer and consumer. It was felt, therefore, that an effort should be made to gather available facts concerning the costs and practices of distributing fruits and vegetables in terminal markets and to suggest means by which such costs might possibly be reduced.

In the summer of 1925, I went to New York City to see what might be done. And here I would like to correct an impression which I fear Mr. Dykes may possibly have created in your minds concerning the alleged ease of obtaining records from American business men. I spent three weeks in New York City and Philadelphia, interviewing members of the produce trade, before I got the faintest show of interest. In fact, Professor Larsen, who was with me at that time, joked me good-naturedly about it and was willing to wager a new hat that I would not get the data I wanted from any member of the produce trade. Eventually, however, I ran across one of the leaders of the produce trade, who was exceptionally broadminded, whom I succeeded in convincing that a study such as I proposed, might be advantageous to the trade in general. This gentleman, a German-Jew by nativity, not only threw open his books to me but paved the way for me with several other firms. I spent three days in the office of this firm and then took the data back to Cornell for analysis. After analyzing these data carefully, a few graphs and tables were drawn up and I proceeded to Pittsburgh, Pennsylvania, to try them out on the produce trade in that city. I took with me one graduate student from Cor-

nell and in the course of two weeks we succeeded in obtaining data from fifteen of the leading produce firms in Pittsburgh. In order to obtain these data, we had to approach about 40 firms and found to our surprise that many of the firms kept such inadequate records that the data available had no value for our purposes. The Pittsburgh data was taken back to Cornell, analyzed briefly, and a short, mimeographed report prepared. Armed with this report, I again invaded New York City during the fall and winter of 1926, accompanied by one graduate student. I should perhaps mention that in the meantime two of the produce trade journals had reprinted the mimeographed Pittsburgh report in full and had commented favorably on the work so that the New York trade was not in entire ignorance of our motives. Altogether we spent about twelve weeks in the New York market and during that time obtained records from 28 of the leading wholesalers and 37 of the leading jobbers. The difficulty of obtaining these data was not alleviated any by the fact that about 70 per cent of the trade is composed of Italians, Greeks, and Jews, who could not, or at least professed not to be able, to speak English. Lack of linguistic ability is a very convenient screen behind which to hide and one much resorted to by foreign-born dealers in our country. Many of the records were so poorly kept and inadequate as to be valueless for our purposes.

In each case, records for only one year were obtained. This was due primarily to the fact that produce houses rarely keep their records more than one year owing to lack of storage space. By dint of much searching, however, we were able to find a few firms which had records as far back as twelve years and several for shorter periods. These gave us a hint as to the trend of the produce business and also as to the normality of our one year's records. During the next year, data were also obtained from dealers in Boston, St. Louis, and Detroit, all of which were submitted voluntarily and accompanied by certified public accountant statements.

Some of the conclusions arrived at in this study may interest you. The average gross sales of fruits and vegetables by fifteen Pittsburgh wholesale produce firms, during the year 1924 were about \$685,000 per firm. For each dollar of sales, approximately 91 cents was returned to country growers or shippers or absorbed in transportation costs. Actual costs of distribution took 6.9 cents, leaving about two cents out of each dollar to cover salaries of

Table 2. Data Concerning Gross Sales and Costs of Distributing Perishable Fruits and Vegetables by 20 Wholesale Produce Firms in the New York Metropolitan District, 1924

<i>Item</i>	<i>Total cost of 20 firms</i>	<i>Average per firm</i>	<i>Per cent of gross sales</i>
Amount paid to country growers or shippers for fruits and vegetables (including railroad and steamship transportation)*	\$32,979,473.42	\$1,648,973.67	90.91
Cartage in Metropolitan district (largely from railpoints to warehouse)	318,127.73	15,906.39	.88
Returns and allowances (deductions allowed jobbers from wholesale price for alleged defective produce)	166,105.63	8,305.28	.46
Storage charges and import duties	51,218.41	2,560.92	.14
Costs of distribution in Metropolitan New York district (not including managers' salaries and profits or losses)	2,384,590.93	119,229.54	6.57
Salaries of management**	329,587.75	16,479.39	.91
Net profit	46,970.58	2,348.53	.13
Gross sales	\$36,276,074.45	\$1,813,803.72	100.00

* For 4 firms, whose data included that item, freight made up 5.28 per cent of gross sales.

** There were 54 active partners or proprietors in the 20 firms studied or an average of 2.7 proprietors per firm.

proprietors and net profits. Labor and management constituted about 60 per cent of the costs of distribution. Other important items were rent and storage, cartage, bad debts, and telephone and telegraph.

Twenty-eight wholesale produce firms in New York City sold 41 million dollars worth of fruits and vegetables during 1924, an average of \$1,466,000 per firm. Approximately 90.5 cents out of each dollar were returned to country shippers or paid out for transportation charges. City distribution costs took 8.4 cents, leaving 1.1 cents for salaries and net profits of proprietors of wholesale firms. Labor and management accounted for fifty per cent of the costs of distribution. Bad debts were a serious factor and accounted for seven per cent of the costs of distribution. This item can probably be reduced by closer cooperation with credit associations. Salaries of proprietors in the New York wholesale produce trade averaged about \$110 or about £22 per week. Good salesmen received \$108 or about £21 10 shillings per week.

Wholesale firms dealing in such commodities as potatoes, onions, apples, turnips, cabbage, and the like, generally termed "hardware," took a gross margin of about thirteen per cent or almost

Table 3. Items of Cost Incurred by 20 Wholesale Produce Firms in Distributing Perishable Fruits and Vegetables in the New York Metropolitan District, 1924

Item	Total cost of 20 firms	Average per firm	Per cent of gross margin
Wages of employees.....	\$1,087,999.18	\$54,399.96	39.40
Commission and brokerage.....	254,946.39	12,747.32	9.23
Bad debts.....	221,825.82	11,091.29	8.03
Bags, barrels, crates, stencils, etc.....	54,754.19	2,737.71	1.98
Rent.....	107,938.74	5,396.94	3.91
Traveling expenses.....	132,573.61	6,628.68	4.80
Telephone and telegraph.....	119,165.86	5,958.29	4.32
Interest on investment.....	91,329.71	4,566.48	3.31
Miscellaneous expenses.....	59,578.14	2,978.91	2.16
Depreciation and repairs.....	43,098.47	2,154.92	1.56
Office supplies.....	48,651.26	2,432.56	1.76
Advertising.....	27,823.91	1,391.20	1.01
Insurance.....	18,008.10	900.40	.66
Taxes.....	18,355.53	917.78	.66
Interest on borrowed money.....	29,058.09	1,452.90	1.05
Heat, light, and power.....	13,955.84	697.79	.51
Legal fees, audits, etc.....	15,168.98	758.45	.55
Auto expenses.....	15,939.36	796.97	.58
Collection.....	8,267.71	413.39	.30
Donations, etc.....	5,372.81	268.64	.19
Market News service.....	7,687.60	384.38	.28
Inspection.....	3,091.63	154.58	.11
Total operating costs excluding salaries of managers and profits or losses.....	\$2,384,590.93	\$119,229.54	86.36
Salaries of managers or principals.....	329,587.75	16,479.39	11.94
Net profit.....	46,970.58	2,348.53	1.70
Gross margin.....	\$2,761,149.26	\$138,057.46	100.00

four per cent more than those firms handling highly perishable or packaged goods. Present methods of receiving potatoes, cabbage, apples, turnips, onions, and so forth, in bulk and packaging them in New York City are largely responsible for the increased margin. Margins on such commodities may be reduced by grading according to rigid standards and packing the produce at country points where labor is cheaper.

Thirty-seven produce jobbing firms in the New York metropolitan district sold about 13 million dollars worth of fruits and vegetables during 1924, or about \$353,000 per firm. The average gross margin taken by these jobbers was 12.4 per cent of gross sales. The jobbing margin was approximately 50 per cent higher than the wholesale margin in the same city.

Table 4. Data Concerning Gross Sales and Costs of Distributing Fruits and Vegetables in the New York Metropolitan District by 8 Wholesale Receivers in the "Hardware" Line, 1924

Item	Total for 8 firms	Average per firm	Per cent of gross sales
Amount paid to country growers or shippers for fruits and vegetables (including railroad and steamship transportation)*	\$4,161,083.11	\$520,135.39	87.02
Cartage in Metropolitan district (largely from railpoints to warehouse)	20,579.42	2,572.43	.43
Returns and allowances (deductions allowed jobbers from wholesale price for alleged defective produce)	14,390.41	1,798.80	.30
Storage charges and import duties	3,589.45	448.68	.08
Costs of distribution in Metropolitan New York district (not including proprietors' salaries and profits or losses)	520,592.44	65,074.06	10.89
Salaries of management**	50,543.35	6,317.92	1.06
Net profit	10,861.06	1,357.63	.22
Gross sales	\$4,781,639.24	\$597,704.91	100.00

* For 5 firms, whose data included that item, freight made up 19.28 per cent of gross sales.

** There were 23 active partners or proprietors in the 8 firms studied or an average of 2.88 proprietors per firm.

Gross margins varied considerably among jobbing markets in the metropolitan districts. In the Wallabout, Brooklyn market, the average gross margin was about twelve per cent; in Harlem, Manhattan market, about 8.4 per cent; in the Gansvoort, Manhattan market, about 16 per cent and in the Newark, New Jersey market, about 10.5 per cent. These variations in gross margins were largely due to variations in demands for service and extension of credit.

In all jobbing markets, labor and management was the most important item of expense. Cartage of produce from wholesale to jobbing market, and from jobbing market to retailer constituted a relatively large item of expense.

VOLUME OF BUSINESS

According to the 1929 issue of the Blue Book, there are 1,257 wholesalers and jobbers and 186 brokers engaged in the produce business in New York and Brooklyn, a total of approximately 1,450 firms. This number appears excessive compared with other industries. A classified telephone directory shows approximately 14 chain-store systems and 259 wholesale grocery firms (including importers) engaged in supplying groceries to the boroughs of Man-

Table 5. Items of Cost Incurred by 8 Wholesale Produce "Hardware" Firms in Distributing Fruits and Vegetables in the New York Metropolitan District, 1924

Item	Total cost of 8 firms	Average per firm	Per cent of gross margin
Wages of employees.....	\$219,557.03	\$27,444.62	37.73
Commission and brokerage*	63,386.54	7,923.32	10.89
Bad debts.....	12,287.82	1,535.98	2.11
Bags, barrels, crates, stencils, etc.....	97,427.62	12,178.45	16.74
Rent.....	30,534.25	3,816.78	5.25
Traveling expenses.....	6,485.57	810.70	1.11
Telephone and telegraph.....	6,291.91	786.49	1.08
Interest on investment.....	17,728.88	2,216.11	3.05
Miscellaneous expenses.....	20,311.71	2,538.96	3.49
Depreciation and repairs.....	16,017.83	2,002.23	2.75
Office supplies.....	3,058.68	382.34	.53
Advertising.....	70.00	8.75	.01
Insurance.....	7,517.50	939.69	1.29
Taxes.....	367.93	45.99	.06
Interest on borrowed money.....	8,226.63	1,028.33	1.41
Heat, light, and power.....	399.65	49.96	.07
Legal fees, audits, etc.....	1,529.11	191.14	.26
Auto expense.....	8,827.93	1,103.49	1.52
Collection service.....	220.25	27.53	.03
Donations, etc.....	285.60	35.70	.05
Market News service.....	35.00	4.38	.01
Inspection, license fees, etc.....	25.00	3.12	.01
Total operating costs excluding salaries of managers and profits or losses.....	520,592.44	65,074.06	89.45
Salaries of managers or principals.....	50,543.35	6,317.92	8.68
Net profit.....	10,861.06	1,357.63	1.87
Gross margin.....	\$581,996.85	\$72,749.61	100.00

* Commissions paid country agents for soliciting and handling consignments at country points, and brokerage paid city brokers in same or other markets for services in disposing of cars of produce.

hattan, Brooklyn, Queens and the Bronx.¹ The volume of groceries consumed in the metropolitan district is vastly greater than the volume of fruits and vegetables sold. It appears illogical that the distribution of fruits and vegetables should require 5.5 times as many wholesale firms as the distribution of groceries. The commission method of wholesaling fruits and vegetables may be partly responsible for this situation. Groceries are not wholesaled on a commission basis but must be purchased outright. A relatively large amount of capital is required to enter the business of wholesaling groceries whereas under the prevailing method of selling

¹ Donnelly, R. H. Corporation, Classified Telephone Directory, Manhattan, Brooklyn, Queens, and the Bronx, New York City, 1929.

Table 6. Variations in Items of Costs of Distribution per \$1,000 of Gross Sales, 8 Wholesale Produce Firms Handling "Hardware" (Potatoes, Cabbage, Apples, etc.), New York, 1924

Item	Firm								Weighted average of 8 firms
	I	II	III	IV	V	VI	VII	VIII	
Wages of employees.....	\$35.56	\$36.85	\$45.58	\$14.04	\$34.71	\$73.68	\$61.38	\$51.49	\$45.92
Commission and brokerage*	80.73	.04	—	—	—	—	21.06	—	13.26
Bad debts.....	2.37	1.02	—	12.16	—	.74	4.03	1.21	2.57
Bags, barrels, crates, stencils, etc.....	15.59	13.99	—	12.02	3.59	3.08	47.21	15.58	20.37
Rent.....	14.52	4.56	8.39	1.26	12.57	9.16	4.54	5.93	6.38
Traveling expenses.....	7.06	.78	—	—	—	—	—	2.85	1.36
Telephone and telegraph.....	1.68	1.31	.91	1.54	2.24	.66	1.17	1.38	1.31
Interest on investment.....	6.55	.47	7.30	7.18	4.49	6.43	3.08	4.04	3.71
Miscellaneous expenses.....	.87	7.29	5.77	—	—	—	4.09	5.36	4.25
Depreciation and repairs.....	3.96	2.82	—	.79	—	18.70	2.54	3.25	3.35
Office supplies.....	.50	.41	—	.62	4.78	1.60	.10	.80	.64
Advertising.....	—	—	—	—	.35	—	—	—	.01
Insurance.....	.54	.65	1.72	.13	4.49	4.62	1.82	2.15	1.57
Taxes.....	—	.14	.60	—	—	—	—	—	.08
Interest on borrowed money.....	.57	2.88	2.29	.46	—	—	2.89	.03	1.72
Heat, light, and power.....	—	—	—	.15	.37	—	.23	—	.08
Legal fees, audits, etc.....	.61	—	.27	.15	—	.38	.86	—	.32
Auto expense.....	—	—	—	5.33	—	7.25	—	6.93	1.85
Collection service.....	.28	—	—	—	.43	—	—	—	.04
Donations, etc.....	—	—	—	—	—	1.09	—	—	.06
Market News service.....	—	—	.11	—	—	—	—	—	.01
Inspection, license fees, etc.....	—	—	.07	—	—	—	—	—	.01
Total operating costs excluding salaries of management.....	171.39	73.21	73.01	55.83	68.02	127.39	155.00	101.00	108.87
Salaries of management.....	11.37	10.86	15.81	24.93	23.95	19.85	2.23	7.01	10.57
Gross operating costs including management..	\$182.76	\$84.07	\$88.82	\$80.76	\$91.97	\$147.24	\$157.23	\$108.01	\$119.44

* Commissions paid country agents for soliciting and handling consignments at country points, and brokerage paid city brokers in same or other markets for services in disposing cars of produce.

fruits and vegetables on commission, the wholesaler operates largely on the grower's capital and relatively little capital is necessary to set up as a commission merchant. This situation has probably led to the establishment of large numbers of produce firms, each of which meets with severe competition and is unable to obtain a large enough volume of business to make distribution efficient.

The volume of business handled by the average first-class produce firm is relatively small (probably aggregating less than \$1,500,000 per year) compared with other wholesale lines of business. It is likely that the consolidation of several such firms would result in marked economies. Such mergers would follow developments in other industries and should result in greatly increased volume per firm and reduced costs of handling per unit. It is likely that more complete standardization of varieties and grades by country growers and shippers will reduce sales on the commission basis and increase outright purchases, resulting ultimately in a smaller number of produce firms and a lower cost of distribution per unit handled.

COMPETITION

It is probable that the wholesale and jobbing produce trade has been adversely affected during recent years by the increasing volume of sales of perishables by chain food store systems. This has resulted in efforts on the part of some members of the produce trade to have legislation enacted to curb or regulate chain-store systems. Some produce men recognize the fact, however, that the development of chain-store systems has been based on sound economic principles, since such stores are performing an economic service for which an obvious need exists, at a lower cost than other agencies. It is recognized that chain stores will probably become increasingly important factors in the distribution of fruits and vegetables as well as other food products.

The handling of perishable fruits and vegetables in chain stores is of comparatively recent origin, and it is the almost unanimous judgment of the executive officers of some seventy-five chain systems that present methods of handling such products are generally unsatisfactory and usually unprofitable.

It is comparatively easy to hire store clerks to sell packaged groceries since they do not deteriorate rapidly and the price can

Table 7. Data Concerning Sales and Costs of Distributing Fruits and Vegetables in the New York Metropolitan District, 1924,
by 37 Produce Jobbing Firms

Item	Total for 37 firms	Average per firm	Per cent of gross sales
Amount paid to wholesale receivers for fruits and vegetables.....	\$11,387,505.51	\$307,770.41	87.23
Allowances for alleged defective produce..	49,596.83	1,340.46	.38
Costs of distribution in New York Metro- politan district (not including proprie- tors' salaries and profits or losses).....	1,303,827.14	35,238.57	9.99
Salaries of proprietors or managers*.....	289,338.80	7,619.97	2.21
Net profits.....	24,724.87	668.24	.19
Gross sales.....	\$13,054,993.15	\$352,837.65	100.00

* There were 70 active partners or proprietors in the 37 jobbing firms studied or an average of 1.9 proprietors per firm.

Table 8. Items of Cost Incurred by 37 Jobbing Produce Firms in Dis-
tributing \$13,054,993.15 Worth of Fruits and Vegetables in the New
York Metropolitan District, 1924

Items of cost	Total cost 37 firms	Average cost per firm	Per cent of gross margin
Wages of employees.....	\$ 665,635.26	\$17,990.14	41.14
Rent and storage.....	100,034.50	2,703.64	6.18
Cartage.....	89,083.04	2,407.65	5.51
Depreciation.....	61,452.42	1,660.88	3.80
Auto expense.....	58,363.37	1,577.39	3.61
Miscellaneous expenses.....	57,792.58	1,561.96	3.57
Commission and brokerage*.....	45,790.82	1,237.59	2.83
Bad debts.....	41,939.66	1,133.50	2.59
Interest on investment.....	36,360.76	982.72	2.25
Traveling expenses.....	27,682.00	748.16	1.71
Insurance.....	26,661.50	720.58	1.65
Repacking, etc.....	23,562.49	636.82	1.46
Telephone and telegraph.....	17,045.65	460.69	1.06
Office supplies.....	12,497.45	337.77	.77
Heat, light, and power.....	11,356.89	306.94	.70
Interest on borrowed money.....	9,578.73	258.89	.59
Taxes.....	8,065.28	217.98	.50
Legal fees, audits, etc.....	4,903.89	132.54	.30
Advertising.....	3,434.57	92.83	.21
Collection services.....	1,763.38	47.66	.11
Donations, etc.....	822.90	22.24	.05
Sub-total, excluding managers' salaries and profits.....	1,303,827.14	35,238.57	80.59
Managers' or principals' salaries.....	289,338.80	7,819.97	17.88
Net profits.....	24,724.87	668.24	1.53
Gross margin.....	\$1,617,890.81	\$43,726.78	100.00

* Commission and brokerage fees are paid buyers who attend auction sales or nearby country areas, and buy for a number of jobbers at one time.

Table 9. Data Concerning Sales and Costs of Distributing Fruits and Vegetables by 11 Produce Jobbing Firms, Wallabout Market, Brooklyn, 1924

Item	Total for 11 firms	Average per firm	Per cent of gross sales
Amount paid to wholesale receivers for fruits and vegetables.....	\$3,597,352.26	\$327,032.02	87.85
Allowances for alleged defective produce..	29,447.02	2,677.00	.72
Costs of distribution by jobber (not including proprietors' salaries and profits or losses).....	361,602.71	32,872.97	8.83
Proprietors' or managers' salaries*.....	79,583.53	7,234.87	1.94
Net profit.....	26,825.87	2,438.72	.66
Gross sales.....	\$4,094,811.39	\$372,255.58	100.00

* There were 21 active proprietors or partners in the Wallabout jobbing produce firms or an average of 1.9 proprietors per firm.

Table 10. Items of Cost Incurred in the Distribution of Fruits and Vegetables by 11 Produce Jobbing Firms, Wallabout Market, Brooklyn, 1924

Items of cost	Total cost 11 firms	Average cost per firm	Per cent of gross margin
Wages of employees.....	\$183,447.65	\$16,677.06	39.20
Rent and storage.....	31,361.71	2,851.06	6.70
Auto expense.....	24,144.12	2,194.92	5.16
Miscellaneous expenses.....	23,127.83	2,102.53	4.94
Cartage.....	22,173.83	2,015.80	4.74
Repacking, etc.....	15,917.18	1,447.02	3.40
Depreciation.....	12,858.32	1,168.94	2.75
Interest on investment.....	11,712.44	1,064.77	2.50
Bad debts.....	10,942.42	994.76	2.34
Commission and brokerage*.....	6,422.11	583.83	1.37
Insurance.....	5,571.72	506.52	1.19
Telephone and telegraph.....	3,901.22	354.66	.83
Office supplies.....	2,966.32	269.66	.63
Heat, light, and power.....	2,227.84	202.53	.48
Taxes.....	2,043.56	185.78	.44
Legal fees, audits, etc.....	1,460.00	132.73	.31
Interest on borrowed money.....	1,113.44	101.22	.24
Donations.....	110.00	10.00	.02
Advertising.....	101.00	9.18	.02
Total operating costs excluding salaries of proprietors and profits or losses.....	361,602.71	32,872.97	77.26
Salaries of proprietors.....	79,583.53	7,234.87	17.01
Net profit.....	26,825.87	2,438.72	5.73
Gross margin.....	\$468,012.11	\$42,546.56	100.00

* Commission and brokerage are paid buyers who attend auction sales or nearby country areas and buy for a number of jobbers at one time.

Table 11. Data Concerning Sales and Costs of Distributing Fruits and Vegetables by 9 Produce Jobbing Firms, Gansevoort Market, New York City, 1924

Item	Total for 9 firms	Average per firm	Per cent of gross sales
Amount paid to wholesale receivers for fruits and vegetables.....	\$1,706,859.22	\$189,651.02	84.38
Allowances for alleged defective goods.....	13,345.35	1,482.82	.66
Costs of distribution by jobber (not including proprietors' salaries and profits or losses).....	244,033.59	27,114.85	12.06
Proprietors' or managers' salaries*.....	59,207.25	6,578.58	2.93
Net loss.....	655.81	72.87	.03
Gross sales.....	\$2,022,789.60	\$224,754.40	100.00

* There were 14 active proprietors or partners in the 9 Gansevoort Market jobbing firms or an average of 1.6 proprietors per firm studied.

Table 12. Items of Cost Incurred in the Distribution of Fruits and Vegetables by 9 Produce Jobbing Firms, Gansevoort Market, New York City, 1924

Items of cost	Total cost 9 firms	Average cost per firm	Per cent of gross margin
Wages of employees.....	\$124,634.65	\$13,848.29	41.19
Rent and storage.....	22,174.60	2,463.84	7.33
Auto expense.....	18,054.15	2,006.02	5.97
Miscellaneous expenses.....	13,600.52	1,511.17	4.50
Bad debts.....	10,295.33	1,143.93	3.40
Depreciation.....	9,493.96	1,054.88	3.14
Commission and brokerage*.....	9,233.44	1,025.94	3.05
Insurance.....	7,924.31	880.48	2.62
Interest on investment.....	7,306.35	811.82	2.42
Cartage.....	6,057.09	673.01	2.00
Telephone and telegraph.....	2,938.68	326.52	.97
Repacking, etc.....	2,705.64	300.63	.89
Interest on borrowed money.....	2,605.82	289.54	.86
Heat, light, and power.....	2,218.90	246.54	.73
Office supplies.....	1,722.58	191.40	.57
Taxes.....	1,688.80	187.64	.56
Advertising.....	1,000.77	111.20	.33
Collection service.....	303.00	33.67	.10
Legal fees, audits, etc.....	75.00	8.33	.02
Total operating costs, excluding salaries of proprietors and profits or losses.....	244,033.59	27,114.85	80.65
Salaries of proprietors.....	59,207.25	6,578.58	19.57
Net loss.....	655.81	72.87	.22
Gross margin.....	\$302,585.03	\$33,620.56	100.00

* Commission and brokerage are paid buyers who attend auction sales or nearby country areas and buy for a number of jobbers at one time.

Table 13. Data Concerning Sales and Costs of Distributing Fruits and Vegetables by 9 Produce Jobbing Firms, Harlem Market, New York City, 1924

<i>Item</i>	<i>Total for 9 firms</i>	<i>Average per firm</i>	<i>Per cent of gross sales</i>
Amount paid to wholesale receivers for fruits and vegetables.....	\$3,196,747.63	\$355,194.18	91.59
Allowances for alleged defective produce.....	4,744.25	527.14	.14
Costs of distribution by jobber (not including proprietors' salaries and profits or losses).....	236,436.51	26,270.73	6.77
Proprietors' or managers' salaries*.....	40,180.00	4,464.44	1.15
Net profits.....	12,093.17	1,343.68	.35
Gross sales.....	\$3,490,201.56	\$387,800.17	100.00

* There were 13 active proprietors or partners in the 9 Harlem Market jobbing firms, or an average of 1.4 proprietors per firm studied.

be fixed at the headquarters of the system. It is a relatively difficult matter to find men who have enough experience and judgment to merchandise successfully, commodities such as fruits and vegetables which are subject to rapid deterioration and are highly variable in supply from day to day. Prompt action in reducing prices is often necessary to move the supply on hand. Independent grocery and fruit stand operators must meet the same problem, but such operators are usually more experienced and have a greater personal interest in the welfare of the business.

These difficulties, inherent in the fruit and vegetable business, give produce men a natural advantage which they do not seem to have utilized to any appreciable extent. The experienced produce man is in possession of considerable knowledge concerning the requirements necessary to the profitable merchandising of fruits and vegetables. The sympathetic and interested extension of this knowledge to jobbers and retailers may assist in solving produce retailing problems. It is likely that both independent retailers and chain-store operators will welcome such assistance. It might well be considered one of the functions of produce men's associations to conduct research studies to the end that difficult fruit and vegetable retailing problems may be solved.

TERMINAL FACILITIES

The rapid increase in carlot shipments of fruits and vegetables during the past few years has rendered more acute the already

Table 14. Items of Cost Incurred in the Distribution of Fruits and Vegetables by 9 Produce Jobbing Firms, Harlem Market, New York City, 1924

Items of cost	Total cost 9 firms	Average cost per firm	Per cent of gross margin
Wages of employees.....	\$114,144.58	\$12,682.73	39.54
Cartage.....	32,251.18	3,583.46	11.17
Depreciation.....	16,379.10	1,819.90	5.67
Rent and storage.....	16,203.40	1,800.38	5.61
Auto expense.....	16,165.10	1,796.12	5.60
Miscellaneous expenses.....	10,928.67	1,214.30	3.79
Bad debts.....	9,587.95	1,065.33	3.32
Insurance.....	6,390.46	710.05	2.21
Interest on investment.....	5,940.00	660.00	2.06
Legal fees, audits, etc.....	2,530.67	281.19	.88
Telephone and telegraph.....	2,261.50	251.28	.78
Heat, light, and power.....	1,832.66	203.63	.63
Donations, etc.....	712.90	79.21	.25
Interest on borrowed money.....	518.91	57.66	.18
Office supplies.....	487.18	54.13	.17
Taxes.....	102.25	11.36	.03
Total operating costs, excluding salaries of proprietors and profits or losses.....	236,436.51	26,270.73	81.89
Salaries of proprietors.....	40,180.00	4,464.44	13.92
Net profits.....	12,093.17	1,343.68	4.19
Gross margin.....	\$288,709.68	\$32,078.85	100.00

serious problem involved in handling such produce in large terminal markets. New wholesale markets have been constructed in several cities. Some have been excellently planned and constitute a genuine contribution to the efficient merchandising of produce. Others seem merely to have continued the deficiencies of older sites. Since cartage is so serious a problem in all large cities, whether considered from the angle of expense or that of congestion in city streets, it is likely that first attention, in the planning of an adequate terminal, should be given to insuring direct rail facilities to wholesale warehouses and stores. Direct rail facilities would probably eliminate half of the cartage charges usually incurred, besides reducing congestion in city streets.

In many large cities, produce is received at many terminals, scattered over a wide area. The difficulties involved in bringing about a unification of such facilities are readily appreciated. In a few cities, local topography will probably make unification impossible. In most cities, however, it is likely that the establishment

Table 15. Distribution of Sales and Costs Incurred by a New York City Wholesale Receiver of Onions, 1924
(Gross sales of \$1,236,627.18)

		Per cent of gross sales
Gross sales.....	\$1,236,627.18	100.00
Deduction from sales:		
Paid shipper for merchandise.....	\$1,108,662.03	89.65
Claims and allowances.....	4,467.18	.36
Costs of operating:		
Wages of employees.....	22,669.79	1.83
Salaries of 2 officers.....	20,000.00	1.62
Rent.....	4,800.00	.39
Insurance.....	313.00	.03
Heat and light.....	413.89	.03
Traveling expense.....	5,000.00	.40
Office supplies.....	376.56	.03
Telephone and telegraph.....	2,295.16	.19
Buying commissions and brokerage.....	17,818.18	1.44
Selling commissions and brokerage.....	27,993.76	2.26
Freight and cartage.....	16,514.27	1.33
Storage charges.....	5,161.35	.42
Collection expense.....	312.00	.03
Market News Service.....	85.25	.01
Credit Rating Service.....	—	—
Bad debts.....	476.75	.04
Interest on investment.....	4,200.00	.34
Total cost of operating.....	\$128,429.96	10.39
Gross deductions.....	1,241,559.17	100.40
Net loss for year.....	4,931.99	.40
Actual salary received by each partner.....	7,534.00	.61

of a union produce terminal would greatly facilitate the distribution of perishables and result in an appreciable reduction in handling costs.

So much for the wholesaler and jobber study. Now I should like to discuss with you a study of some economic aspects of the marketing of honey in the United States.

ECONOMIC ASPECTS OF THE MARKETING OF HONEY IN THE UNITED STATES

Unsatisfactory conditions in the beekeeping industry were primarily responsible for the undertaking of this study. Up to the beginning of the World War, wholesale honey prices were approximately on a par with wholesale prices of all other commodities. Honey prices experienced a slight rise during the war period, due to

Table 16. City Dealers' Gross Margins on 14 Selected Fruits and Vegetables, Expressed in Cents of Consumer's Dollar*
(50 stores in the New York Metropolitan Area, 1923-24)

Commodity	Margin in cents of consumer's dollar
Northern potatoes.....	37
Southern potatoes.....	38
California oranges.....	41
Peaches.....	45
Sweet potatoes.....	45
Cantaloupes.....	46
Boxed apples.....	46
Southern cabbage.....	48
Barreled apples.....	49
Eastern lettuce.....	51
Western lettuce.....	52
Yellow onions.....	53
Northern cabbage.....	58
White onions.....	63
Average.....	44.6

* U. S. D. A. Dept. Bull. No. 1411, p. 11.

the restrictions placed on sugar consumption, but since 1918, wholesale honey prices have been distinctly below the level of all commodities. For example, the index number of wholesale prices of extracted clover honey in 1928 was 120 (on a 1910-1914 base) compared with 151 for all commodities. At the same time, the index number of wages of farm labor with board, in the United States, was 171 and of supplies used by beekeepers 186. This situation led to much distress in commercial beekeeping areas and to a demand by beekeeping interests throughout the country that an investigation be made.

During the spring of 1927, an arrangement was concluded between Cornell University and the United States Department of Agriculture for the undertaking of this study, and it fell to my lot to carry out the investigation.

I soon learned that the honey business was very much disorganized and that no one in research circles could tell me where to obtain the desired information. I knew of one or two honey-packing firms, however, and from these I obtained a hint as to where I might look for certain information. To make a long story short, I soon found that I had to consult a wide variety of trades to get all sides of the problem. During the summer months of

1927 and 1928, I visited the twenty-six leading cities in the United States, from Boston to San Francisco and from Minneapolis to New Orleans. Data were obtained either by personal survey or mail questionnaire from the following:

- 42 honey packing or bottling firms
- 25 wholesale produce firms
- 18 honey brokers
- 368 wholesale baking firms
- 370 manufacturing confectionery firms
- 127 bakery and confectionery supply houses
- 17 importers and exporters of honey
- 2 chain hotel systems
- 35 manufacturing drug firms
- 311 wholesale grocery firms
- 83 multiple or chain grocery shop systems, comprising 29,226 retail grocery shops.

The field work in this study took about six months of steady work. The procedure was about the same in all cities. In each large city, I visited personally three or four representatives of each type of dealer and obtained the desired information. From these dealers I obtained a list of the remaining members of the trade in that city and had mail questionnaires sent to them. This field work was conducted with the aid of a stenographer and a clerk at Ithaca, supplemented by ample travel funds from the United States Department of Agriculture. Returns from these wholesale mail questionnaires ranged from 50 to 80 per cent.

The next step was a survey of retail grocery stores or shops in New York, Chicago, and Elmira, New York. With the assistance of one graduate student for six weeks, 411 records were obtained in New York City and 65 in Elmira. The United States Department of Agriculture sent three men to the Chicago area. This force obtained 294 retail records in about a month's time.

Finally a consumer study, of a sort, was made. Neither time nor funds were available for a personal house-to-house survey, so 5,000 mail questionnaires were sent to housewives in New York, Chicago, Kansas City, and San Francisco. From these questionnaires, 767 usable replies, or about 13 per cent returns, were obtained.

The report of this survey covers 320 typewritten pages, so it is

obvious that I can only touch the high lights in reviewing the results. It will be published shortly by the United States Department of Agriculture and will be available for general distribution.

It was found that certain ideas were prevalent in the honey industry which had no foundation in fact. For example, beekeepers looked to the bakery and confectionery industries to take large and increasing quantities of honey, as had been the case in pre-war days. Only 42 per cent of the wholesale bakeries reported use of honey at all, and all reported a steady decrease in honey usage, owing to the much lower price of inverted sugar and other substitutes for honey. Only 23 per cent of the confectionery firms reported any use of honey, and the quantity used per firm was very small. Here again cheaper inverted sugar, together with malt and raisin syrups, was rapidly replacing honey.

Honey packers and beekeepers alike seem to have been obsessed with the idea that extracted honey could be sold only in glass containers and in very small quantities. Surveys in Chicago and Elmira showed that a five-pound tin can was by far the most popular package. In New York the two and one-half pound tin can found most favor.

There was an utter lack of any standardization of sizes and types of containers in which honey was sold. Honey was merchandised in three types of containers (wood, glass, and tin) and in forty sizes. The multiplicity in sizes of containers causes great confusion among consumers and unquestionably greatly increases the cost of packing. The packing of honey in small quantities results in relatively high prices being asked per pound for honey and results in a greatly reduced demand. The number of sizes could easily have been reduced fifty per cent without any considerable loss in volume.

Less than half of 311 wholesale grocery firms stocked honey. Wholesale groceries attributed the small volume of honey sales to lack of advertising, the relatively high price of honey, the cheapness of competing commodities, the excessive sweetness of honey, and the absolute lack of centralization of the industry. They were emphatic in stating that no semi-luxury, such as honey, could hope to sell in competition with other foods without an aggressive advertising and sales campaign behind it. Retailers in the United States have become so accustomed to having practically all commodities advertised on a national scale that they pay little attention

Table 17. Relation of Size and Value of Usual Retail Sale, to Size of City Retailer's Margin*
(New York Metropolitan Area, 1923-1924)

Commodity	Size of usual retail sale (pounds)	Value of usual retail sale (cents)	City retailer's margin, (per cent)	City retailer's spread (cents per usual retail sale)
Northern potatoes.....	6.5	26.7	37	9.9
Southern potatoes.....	3.75	27.8	38	10.6
California oranges.....	2.50	27.5	41	11.3
Sweet potatoes.....	2.75	24.5	45	11.0
Peaches.....	2.25	26.8	45	12.1
Boxed apples.....	2.25	24.7	46	11.4
Cantaloupes.....	3.25	24.7	46	11.4
Southern cabbage.....	2.75	25.9	48	12.4
Barreled apples.....	3.00	24.0	49	11.8
Eastern lettuce.....	1.75	22.8	51	11.5
Western lettuce.....	1.50	22.1	52	11.6
Yellow onions.....	3.25	23.1	53	12.2
Northern cabbage.....	4.00	20.8	58	12.1
White onions.....	2.25	20.3	65	12.8
Weighted average.....	3.28	25.3	44.6	11.3

* U. S. D. A. Dept. Bull. No. 1411, p. 11.

to commodities not enjoying such advantages. The comments of heads of chain or multiple store systems were identical with the foregoing.

Reports from 767 heads of families indicated that two out of three of these families used some honey during 1927. The average per capita consumption of honey during 1927, as reported by these families, was 2.1 pounds. In this connection, however, I wish to state that these data should be taken with considerable reservation. I have little faith in any mail questionnaire unless it can be accompanied by a personal survey as a check. In this case, it is probable that the consumers who used honey were more likely to reply to the mail questionnaire than those who did not. Furthermore, replies to this questionnaire must necessarily have depended somewhat on the education of the individual as well as the willingness of individuals to cooperate in this study. It is likely that these data are from families somewhat above the average.

Excessive sweetness and the relatively high price of honey were given as the principal reasons why more honey was not consumed. Jellies, jams, and marmalades were given as the most important competitors of honey. More than half of the heads of families

said they had never seen a honey advertisement and many replied that they did not know how to use honey.

The conclusions reached in this survey were as follows:

1. The outstanding need in the honey industry is the establishment of some type of organization or group of organizations controlling a large enough volume of honey to accomplish the following:

- (a) Standardize grades and containers so that the consumer may purchase a uniform quality at a reasonable price at all times. The many small dealers and bottlers engaged in the industry have, apparently, found it impossible to standardize honey. Unless it is standardized, it will be difficult to increase demand for honey to any appreciable extent.
- (b) Advertise honey effectively and in a manner more consistent with efforts put forth in behalf of competing commodities.
- (c) Merchandise honey in an aggressive manner in cooperation with retailers by means of special displays, dealer helps, and so forth.

2. Education of the consumer relative to the healthfulness and food value of honey probably offers the most promising solution of the honey marketing problem. The unorganized state of the honey industry makes this step extremely difficult.

3. Honey must be sold either on the basis of consumer demand or by price cutting. The latter alternative has, generally, been accepted and there is grave danger that this policy may lead to the packing of inferior honey and entire loss of markets.

4. Honey is at present retailed in containers of such capacity and type as to give the consumer the impression that honey is a luxury. It is likely that honey can and should be sold in cheap tin and large glass containers in quantities with which the consumer is ordinarily conversant (not less than one pound or multiples thereof). Corn syrup outsells honey in the proportion of ten to one and is available only in five sizes, all in tin cans.

5. The further development of cooperative marketing associations among beekeepers will probably be necessary to meet effectively the problems confronting the honey industry. Local cooperatives are needed to establish local prices and grades. Regional cooperatives are needed for warehousing, processing and

Table 18. Summary of Sales and Operating Expenses in Connection with the Distribution of Fruits and Vegetables by Chain Stores in the New York Metropolitan Area, 1924*

	Total amount	Per cent of gross sales
Gross sales.....	\$750,949	100.0
Cost of produce.....	595,697	79.3
Gross margin.....	155,252	20.7
Operating costs:		
Wages of employees.....	\$ 68,995	9.2
Salaries of superintendents.....	7,558	1.0
Central administration.....	9,506	1.3
Cartage.....	54,743	7.3
Rent.....	21,281	2.8
Depreciation and repairs.....	7,505	1.0
Advertising.....	104	.0
Miscellaneous.....	10,432	1.4
Total.....	\$180,124	24.0
Loss.....	\$ 24,872	3.3

* Unpublished data. Part of New York Authority and Bureau of Agricultural Economics.

merchandising honey. A national cooperative or possibly a federation of regional cooperatives is needed to advertise honey, establish standards, develop export outlets, obtain needed legislation, and so forth.

AN ECONOMIC STUDY OF THE EASTERN GRAPE SITUATION

During the past six or eight years, the producers of the American or eastern type of grape have been in an unfavorable economic situation, and requests for an investigation of the grape situation have been numerous. During the past spring an arrangement has been concluded between Cornell University and the United States Department of Agriculture looking toward an economic survey of the eastern grape industry, covering both the production and marketing of eastern grapes. This study will be conducted in two parts.

1. Professor Scoville, of Cornell, is now in the field in the United States with a squad of five men, obtaining all possible data concerning the cost of producing grapes in New York, Pennsylvania, Ohio, Michigan, Missouri, and Arkansas. A very large

Table 19. Cost of Retail Services and Split-up of Consumer's Outlay in Various Types of Stores*

Type of store	Costs, Margins, and outlays per retail sale			Total outlay by consumer
	Wholesale cost of goods	Jobber's margin	Retailer's margin	
Chain store.....	\$0.134	—	\$0.068	\$0.202
Other stores:				
Cash-and-carry.....	0.135	\$0.02	0.078	0.233
Cash-and-delivery.....	0.141	0.02	0.088	0.249
Credit-and-delivery.....	0.142	0.02	0.108	0.270

* Unpublished data, Port of New York Authority and Bureau of Agricultural Economics, 1924. The data cover the same quantity and quality of seven leading fruits and vegetables sold at retail in the New York metropolitan district.

amount of additional information is also being obtained, including a complete farm record.

2. I have the privilege of being in charge of the study of the marketing of grapes produced in these areas. The marketing survey will cover distribution of the grapes from the point where they are turned over to the cooperative shipping association or private dealer at the country point through to the consumer. It contemplates an analysis of the costs and practices involved in the packing and shipping of grapes at the country point; of the costs and methods of transportation; of the costs and practices involved in merchandising grapes at wholesale in large cities; of the jobbing of grapes; of the retailing of these grapes by the various types of retail stores or shops; and finally, it contemplates obtaining as complete data as possible concerning consumer attitudes, and likes and dislikes with regard to grapes.

As I stated before, this study is being financed in part by the United States Department of Agriculture. In deference to their wishes, we have begun this study at the city point. During the past two months we have been engaged in studying the wholesaling and retailing of grapes in Philadelphia and Chicago.² I have two graduate students from Cornell assisting me in this work. Up to the time of my departure from the United States, we had obtained approximately 700 consumer records and 300 retail records in Philadelphia, and this morning I have a report showing 820 consumer and 321 retail records obtained in Chicago. At the same time, I have been engaged in obtaining data from the whole-

² Cincinnati will also be included in these studies.

sale produce firms and chain-store (multiple-shop) systems. In no case have I been refused access to the records of any firm thus far (although it often takes two or three days and many conferences to bring this about) but in many instances the records are so incomplete or inaccurate as to be of little use.

As a check on our own house to house consumer survey, we are now sending about 5,000 mail questionnaires at random to consumers in each of these three cities.

This study will probably be completed within two years but it is hoped that fragmentary parts of it may be mimeographed before that time.

DISCUSSION OF DR. RASMUSSEN'S PAPER

Dr. Baker.—I should like to ask if any study of the California grape industry is planned?

Dr. Rasmussen.—There is a definite feeling against conducting such a study. There is a fear that it might become involved with the prohibition act.

Sir Thomas Middleton.—Has any effort been made to reduce the cost of sacks?

Dr. Rasmussen.—The price of sacks in the United States is determined by the jute market in India. Sacks are not returnable.

Professor Case.—What percentage of gross sales is represented by transportation costs?

Dr. Rasmussen.—Wholesale firms do not keep transportation charges separate.

Sir Thomas Middleton.—Is it customary for dealers to deliver, carriage paid?

Dr. Rasmussen.—The usual terms are f.o.b., which means that the receiver pays the transportation charges if the shipment is up to the grade for which it was sold. This gives the buyer a chance to inspect the goods.

Mr. Dykes.—I was much interested to find that retail trading conditions in the United States are not very different from our own. American investigators appeared to have overcome all difficulties in respect of obtaining information, and I was hoping to learn the inner secrets of the methods used.