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**History of the United States
Food Administration
1917-1919**

**PUBLISHED UNDER AUTHORITY OF THE
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History of the United States Food Administration 1917-1919

By

WILLIAM CLINTON MULLENDORE

With an Introduction by

HERBERT HOOVER

And a Foreword and Bibliography by

RALPH HASWELL LUTZ

1941

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FOREWORD

MR. WILLIAM C. MULLENDORE was an important staff member of the United States Food Administration during the World War. After the Armistice he prepared the official history of the Food Administration, completing it in 1921. The introduction was written by Mr. Hoover in 1920. Both reports were based largely upon documents now in the Hoover Library on War, Revolution, and Peace. As the appearance of a world-wide food problem now renders these records of special significance, the Hoover Library has decided to publish them without any changes in the texts.

When President Wilson outlined May 19, 1917, the administration's food-control policy and announced that Herbert Hoover would accept the post of American Food Administrator there had already been a great deal of discussion in the press as to his coming to Washington from the Commission for Relief in Belgium and direct relations with food control departments in Europe to take the position of Food Dictator or Food Controller. These titles and their implications were far from Mr. Hoover's taste, or his approach to his new job. Such terms were necessary in Europe, but Mr. Hoover believed and proved that the American people and food industries could and would act voluntarily if they understood the need and were satisfied with the soundness of the methods proposed to accomplish the results. So it was as "United States Food Administrator" that he initiated this great undertaking, under five cardinal principles of food administration with delegation of authority, but proving for all time the efficiency of decentralized administration. There was no precedent to guide this type of vast organization. The details of means and measures were actually evolved from our own commercial institutions with the experience of the vast European laboratory of food control problems as a guard against repeating errors.

Since Mr. Hoover and Mr. Mullendore compiled these reports of the activities of the United States Food Administration, a number of books relating to special features of the Food Administration have been published. They have dealt with many branches of the service but none of them describes the Administration as a whole and the problems which it had to meet.

The principal works which amplify Mr. Mullendore's history are:

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- its personnel and achievements. New York, The Macmillan Company, 1920
- Pearl, Raymond. *The Nation's Food*. A statistical study of a physiological and social problem. Philadelphia and London, W. B. Saunders Company, 1920
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For additional references the reader may consult the exhaustive bibliography in Surface and Bland, *American Food in the World War and Reconstruction* . . . , pages 990-94.

The Food Administrator's Staff and a list of the United States Federal Food Administrators, as well as a list of Personnel with the period of service of many staff members, are given in Appendixes A and B.

We are deeply indebted to Miss Suda L. Bane, Archivist of the Herbert Hoover Archives, for her scholarly work in checking the original sources in the Archives Division of the Hoover Library and for the general preparation of this book.

Mr. Mullendore's original text contained an appendix reproducing all of the regulatory orders of the Food Administration. Of use only to a few students and accessible at the Hoover Library, and for the most part in the *Annual Report of the Food Administration for 1918*, published in Washington in 1919, they are not included here. Likewise certain of the price tables have been omitted as they represent more details than are now of importance.

RALPH HASWELL LUTZ

STANFORD UNIVERSITY, CALIFORNIA
August 20, 1941

TABLE OF CONTENTS

	PAGE
FOREWORD <i>Ralph Haswell Lutz</i>	v
INTRODUCTION <i>Herbert Hoover</i>	3
Food Situation at Our Entry into the War—Problems Confronting the Government—Organization of the Food Administration—Stimulation to Production— Reduction in Waste and Consumption—Stabilization of Prices—Control of Profiteering—Control of Ex- ports—Control of Imports—Co-ordination of Gov- ernment Purchasing—Railway Co-operation—Bread- stuffs—Sugar Operations—Pork and Beef Products— Other Activities—United States Food Situation after the Armistice—Situation in Central Europe at the Armistice—Special Feeding of Children during the Armistice—Conclusions of Armistice Relations—Bel- gian Relief Commission—Continuation of European Relief over the Winter of 1920—Total Food Sup- plied during the War—Conclusion	
REPORT ON THE FOOD ADMINISTRATION <i>W. C. Mullendore</i>	45
CHAPTER	
I. CONDITIONS AFFECTING THE FOOD SITUATION IN THE UNITED STATES, 1917	47
II. FORMULATION OF PROGRAM FOR FOOD ADMINIS- TRATION	51
Work of Volunteer Organization Preceding Passage of Food Control Act—Passage of the Law and Crea- tion of the Food Administration	
III. PROBLEMS, POWERS, AND ORGANIZATION OF THE FOOD ADMINISTRATION	57
Problems—Powers of the Food Administration— Principles and Problems of License Control—Organi- zation and Division of Problems—Organization with- in the States—States Administration Division	
IV. CO-OPERATION WITH OTHER GOVERNMENT DE- PARTMENTS	77
Department of Agriculture—War Trade Board—Fed- eral Trade Commission—Tariff Commission—War Industries Board—United States Railroad Adminis- tration—Shipping Board—Departments of Commerce and Labor—Department of Justice	

UNITED STATES FOOD ADMINISTRATION

CHAPTER	PAGE
V. CONSERVATION	80
Elements of the Problem—Co-operation of the Press —Personal-Pledge Campaign—Second Pledge Cam- paign—Advertising—Motion Pictures—Speakers— Educational Institutions—Religious and Fraternal Organizations—Churches—Fraternal Organizations and Patriotic Societies—Public Eating Places—Co- operation of Retail Stores—Libraries—Home Con- servation—Garbage Utilization—Conservation Meas- ures with Reference to Particular Commodities— Results of Conservation	
VI. WHEAT AND FLOUR CONTROL	121
Formation of Plan of Control—Determination of a Fair Price—Creation and Organization of Food Ad- ministration Grain Corporation—Licensing—Agree- ments with Millers (1917-18)	
VII. OPERATIONS OF THE GRAIN CORPORATION	135
Distribution of Wheat to Mills—Farm Marketings (1917 Crop)—Activities of Grain Corporation Traffic Division	
VIII. MILLERS' PROFIT REGULATIONS	145
Season of 1917-18—The Plan of Control for the 1918 Crop—Millers' Profit Regulations for 1918-19 Season—Measures Taken to Maintain Guaranteed Price Basis	
IX. BAKING INDUSTRY	159
Importance of Bread in the Diet—War Emergency Council—Federal Trade Commission Investigation— License Regulations—Prices—Standard Loaf	
X. SUGAR	167
The Problem of Supply—Sugar Control—The 1918- 19 Crop (Sugar Equalization Board)—Solution of the Price Problem—Agreements with Producers and Re- finers—Sugar Situation at the Time of the Armistice —Developments during 1919 as to Supply and De- mand—Results	
XI. LICENSED TRADES AND COMMODITIES	195
Issuance of Rules and Regulations—General Rules	
XII. RULES GOVERNING WHOLESALERS, JOBBERS, IM- PORTERS, RETAILERS, AND BROKERS OF LI- CENSED NONPERISHABLE FOOD COMMODI- TIES	206
Anti-Hoarding Rules—Unnecessary Resales Pro- hibited	

CONTENTS

xi

CHAPTER	PAGE
XIII. CONTROL OVER THE UNLICENSED RETAILER . . .	216
The Retailers' Pledge Campaign—Regulation of Retailers	
XIV. PERISHABLE COMMODITIES	226
Problems in Perishables—Fruits and Vegetables—Potatoes—Poultry and Eggs—Dairy Products—Stimulation of Production of Sea Food and Fresh-Water Fish	
XV. COLD STORAGE	250
Importance in Distribution—Regulations Governing the Warehousemen	
XVI. MEAT PACKERS	253
Regulations Governing the Packing Industry—Amended Rules	
XVII. STIMULATION OF HOG PRODUCTION	259
Effect of the War on Pork Exports—Cost of Hogs vs. Price of Corn—Stabilization of Price—Agricultural Advisory Board—Restrictions Cancelled	
XVIII. THE CANNING INDUSTRY	270
Canned Salmon—Maine—Canned Sardines—California—Canned Sardines—Canned Tuna—Canned Milk	
XIX. COTTONSEED AND COTTONSEED PRODUCTS	282
Regulations, 1917—Crop of 1918	
XX. THE COARSE GRAINS AND THEIR PRODUCTS	288
Coarse Grains Division—License Regulations—Profit Regulations on Feeding Stuffs	
XXI. RICE	295
Production and Consumption in the United States—License Regulations	
XXII. DRIED FRUITS	299
XXIII. BEANS	300
Buying—Stimulation of Production, Pinto Beans—Regulation	
XXIV. COFFEE	303
Sources of Supply—Prices—Shipping	

CHAPTER	PAGE
XXV. COLLATERAL COMMODITIES	306
Ammonia—Ice—Arsenic—Sisal and Binder Twine— Jute Bags—Tin Plate	
XXVI. MOVEMENT IN FOOD PRICES	318
Value of Farm Products 1915-19—Wholesale and Re- tail Prices—Controlled Prices	
XXVII. CO-ORDINATION OF PURCHASES	323
Committee on Supplies of the Council of National Defense—Food Purchase Board—Allied Buying—Di- vision of Co-ordination of Purchase—Allied Provi- sions Export Commission—Value of Commodities Purchased	
XXVIII. GRAIN CORPORATION PURCHASES AND SALES	332
XXIX. ENFORCEMENT	333
Cereal Enforcement Section—Field Supervision Sec- tion—Litigation—Canning	
XXX. INLAND TRANSPORTATION	342
Transportation Division—Co-operation with Rail- road Administration—Car Service Commission	
XXXI. MARINE TRANSPORTATION	346
XXXII. CO-OPERATION WITH OTHER GOVERNMENTS	347
Transport and Supply—Allied Maritime Transport Council—Representatives in Neutral Countries	
XXXIII. DEMOBILIZATION	350
Government Policy—Release of Personnel—Cancella- tion of Regulations	
XXXIV. EXPENDITURES OF THE FOOD ADMINISTRATION	355
Washington Buildings—Employees—Total Expendi- tures	
APPENDIX A. ORGANIZATION OF THE UNITED STATES FOOD ADMINISTRATION STAFF	357
APPENDIX B. LIST OF FOOD ADMINISTRATION PERSONNEL SHOWING PERIOD OF SERVICE	366
INDEX	385

LIST OF TABLES

TABLE	PAGE
I. United States Prewar and War-Time Exports of Certain Foods	48
II. Total Exports from United States for 1916, 1917, and 1918	119
III. Our Exports of Prime Breadstuffs to Allied Destina- tions during 1916, 1917, and 1918	120
IV. Farm Marketings for the Years 1917-1918 and 1918- 1919, Based on Reports to the Grain Corporation Prorated to Calendar Months	140
V. High and Low Wheat Prices Reported to the Grain Corporation from Chicago, Kansas City, St. Louis, and Minneapolis	154
VI. Relation of the Farmer's Price to the Wholesale Price of Wheat Products	156
VII. Wheat and Flour Movement 1917-1919 Showing Production, Carryover, and Distribution	157
VIII. Wheat Ground and Flour Produced July-June 1917- 1919	158
IX. Average Price Paid for Beets per Ton	177
X. Actual Average Monthly Prices of Corn and Hogs at Chicago, 1913-1918	261
XI. Exports of Condensed Milk, Including Shipments to A.E.F., Red Cross, and for Relief Purposes	281
XII. Rice Consumption in the United States	295
XIII. Estimated Total Value of Farm Products in Prewar and War Years	318
XIV. Index Numbers of Wholesale Prices in the War Years	319
XV. Combined Index Numbers of Twenty-four Principal Food Commodities, War Years	320

TABLE	PAGE
XVI. Total Cost of Principal Foods per Capita in the United States, Wholesale and Retail, War Period . . .	320
XVII. Range in Wholesale Price Index, August 1917–October 1918, Compared to the Previous Year . . .	321
XVIII. Effect of Control of Wheat and Flour Prices, War Period	321
XIX. Retail Prices of Staple Foods, War Period	322
XX. Monthly Comparative Statement of the Volume of Business Transacted through the Division of Coordination of Purchase, 1918	329
XXI. Monthly Comparative Statement of the Volume of Business Transacted through the Division of Coordination of Purchase, 1918	330
XXII. Monthly Comparative Statement of the Volume of Business Transacted through the Division of Coordination of Purchase, 1918	331
XXIII. Extent of Penalties of the Enforcement Division . .	334

LIST OF ILLUSTRATIONS

	PAGE
Zone Map of the United States Food Administration . . .	74
Chart 1. Wheat Price Levels of the Years 1917–18 and 1918–19	122
Chart 2. Spread between Producers' Price of Wheat and the Value of Wheat Products of 4½ Bushels . . .	155
Chart 3. Spread between Farmers' Price Received for 4½ Bushels of Wheat and Minneapolis Mill-Door Price of Flour from Same	155
Chart 4. United States Exports of Evaporated and Condensed Milk	280

**History of the United States
Food Administration
1917-1919**

INTRODUCTION*

The United States Food Administration in partial activities covered a period of approximately twenty-four months from August 1917 to August 1919. The controls over distribution and speculation put into force in October 1917 were relaxed immediately after the Armistice in November 1918. Some outstanding contracts and assurances given producers were safeguarded until July 1920. In December 1918 the staff was largely demobilized or merged into the economic controls instituted in Europe under the Food Administrator, and these latter continued until the signing of peace in June 1919. All the appropriations expired June 30, 1919.

This note is prepared as summary and guide to a more complete report. The work of the Food Administration gave it an insight into the faulty character of American food distribution that should have been preserved in record. These things are not to be permanently remedied by temporary war regulation. The agricultural industry, no less than the consumer, is vitally interested in remedying the unnecessarily wide margin of cost that exists between producer and consumer.

The duty of the Food Administration fell into two parts: first, to organize the service and self-denial of the American people so as to supply the Allies with foodstuffs during the war and all Europe after the Armistice; second, to control, so far as its authority extended, the distribution of foodstuffs at home and to limit speculation in them.

During the twelve months of controlled distribution, and long after it was demobilized, an illusion existed in much of the public mind as to the ability of the Food Administration to reduce the price of products to the consumers and coincidentally to increase the price of food to the farmer. Its powers in this particular gave it no control over retail prices and extended only to the regulation of wholesale distribution, to the reduction of speculation, and to stabilizing the price of food commodities where government competition and export buying might disrupt the market. The fundamental conflict of interest as to price between producer and consumer naturally brought

* Written by Herbert Hoover in 1920.

upon the administration the pressure and criticism from some individuals of both sides that usually passes directly from one side to the other. The scales by which success or failure of such administration must be weighed in war are simply: (a) Did food production increase? (b) Did the cost of living remain sufficiently stable to prevent loss in industrial efficiency due to strikes and industrial dislocation? (c) Was the food supply so distributed as to carry our own people and the Allies in health, strength, and morale to victory?

That the agricultural industry prospered, that prices remained more stable than the inevitable inflation of currency and credit would lead one to expect, that the whole period was one of industrial tranquillity without resort to government food subsidies as in Europe, and that no one suffered for lack of food, must be the answers. Individual farmers and consumers did suffer from inevitable dislocation, but the patriotism with which all sides met the necessary sacrifices is beyond praise.

FOOD SITUATION AT OUR ENTRY INTO THE WAR

During the three years prior to our entry into the war Europe had mobilized 60,000,000 men from production to armies and munitions—nearly one-third of the theoretical labor strength of all the states in conflict. Despite the efforts of their women a steady decrease in their food production was inevitable from the beginning.

The situation of the Allies had been further jeopardized because: former sources of supply, from Russia, Rumania, Bulgaria, Serbia, and Turkey, had been cut off by the enemy armies; supplies, such as sugar, directly from enemy countries, had been stopped; shipping had been destroyed to so large an extent as in a measure to necessitate the reduction of transport from far distant markets, such as Australia, China, and the Argentine; the food consumption of certain commodities required for armies and the extra exertion of their civil population had increased. Thus, if these countries were to continue in the war, the supplies from North America—the nearest market and the only producer capable of expansion—must be enormously increased. At our entry into the war Allied stocks of many essential foods had been reduced to six or eight weeks' supplies.

No problem existed as to supply of food for the American people except as to imports of sugar, vegetable oils, and coffee, for otherwise we produce in any circumstances a surplus. The sole question,

aside from these few import commodities, was increased supplies for the Allies.

During the year prior to our entry into the war, that is, the fiscal year 1916-17, the exports from the United States under Allied buying had been far larger than our normal production would warrant. As a result our carry-over of bread grains—the national reserve—had been reduced from 153,000,000 bushels at July 1, 1916, to 43,800,000 bushels at July 1, 1917, and through over-slaughter our stock hogs had been reduced from 65,645,000 at September 1, 1916, to 60,218,000 on September 1, 1917.

The result of the Allies bidding against each other and our own consumers, and the heavy exports and consequent depletion of stocks had raised prices in the United States greatly and induced widespread speculation and profiteering. The statistics of the Department of Agriculture show that, while the index of farm products had in two years increased from the basic 100 of 1913 to but 117 at July 1916, it mounted 118 points further to 235 during the year to July 1, 1917. The profits earned by food concerns expanded enormously during the year ending July 1, 1917, before the existence of the Food Administration. A single instance of this may be cited in that the Department of Agriculture shows that the farmer received from the 1916 harvest an average of \$1.42 per bushel for his entire crop, whereas the price of wheat rose in May 1917 to \$3.25 a bushel, and the public paid an average price for flour during the whole year that would have warranted an average of \$2.00 per bushel to the farmer. Or, conversely, the consumer paid over \$2.50 per barrel more than was warranted by the price of wheat for 90,000,000 barrels of flour.

The enemy was receiving indirect food support from the United States in large volume during the period prior to our entering into the war; for, although the Allies had established a blockade upon the enemy, it had not been entirely effective because the neutrals upon enemy borders were largely free to export their own production to the enemy and, directly or indirectly, to import United States supplies for themselves. Thus not only were our supplies diverted from the Allies to neutrals but also the Germans were indirectly benefited.

A survey of the Allied necessities for the first harvest year after our entry into the war, that is, to July 1, 1918, was made upon the ground by my colleagues and myself in April and May, 1917. This study disclosed that their national diets had become even more predominantly breadstuffs—bread ranging from 55 per cent to 65 per

cent of their total food as compared with 30 per cent of the American diet. Therefore, supplies of breadstuffs were of first concern. The Allied herds were diminishing; but, more important still, Allied food animals had always been dependent largely upon imported feed, and the reduction in these feed imports, due to shortage in shipping, had greatly decreased the dairy and meat production. It was evident that if reduction of shipping continued, the transport of feed might have to be entirely abandoned. Such an event meant further decrease in animal products and a slaughter of underweight animals, and necessitated provision for a great increase in exports of animal products from the United States.

The large sugar supplies from Germany to the Allies were already cut off, and the gradual reduction of shipping threw an increasing drain directly upon the Western Hemisphere, through the abandonment of East Indian supplies.

It was determined to further curtail Allied rations of meats and fats and to substitute other cereals for wheat in bread; yet despite these measures the minimum necessities from the United States were estimated for the harvest year ending July 1918 as follows:

	Tons
Animal products (including all fats).....	1,850,000
Cereals	8,800,000
Sugar	1,500,000
	12,150,000

Aside from this immediate program, we had of necessity to anticipate for the following year the new impulses to be given to American agriculture, that is, to concentrate on an increase in production of breadstuffs, meats, fats, and sugar, because further decline in Allied production was certain. An increase in grain production was entirely possible through direct expansion of the wheat and corn areas at the expense of fallow and pasture. The only food animal possible of increase within that period was the great corn product—the American hog—as cattle would require three years to yield any considerable increase. The only area in which appreciable sugar increase was possible was the West Indies.

Our ability to meet the immediate situation of larger food exports, that is, from July 1917 to August 1918, pending the increase in production, which could only arrive with the 1918 harvest, was

discouraging. No effective stimulation to production was possible during the short period between the time we entered the war and the 1917 planting. Not only had the previous year's drain depleted our usual grain reserves and diminished our breeding hogs, as shown above, but also the 1917 wheat harvest was much below normal and did not afford any practical surplus for export. The drought in the wheat areas, the failure of the corn to mature, and the initial shortage of animals created an alarming situation.

It was evident that we could succeed in maintaining the Allies over the 1917 harvest year only by a very considerable decrease in our consumption and waste. The drainage of supplies upon an even greater scale than the previous year, with less resources to draw from, promised us even greater dangers of rising prices and speculation than before. Moreover, the increasing irregularity of transport, due to war interruptions, threatened periodic gluts which would cause violent fluctuations of farm prices below and above production costs, thus discouraging production and stimulating speculation and industrial unrest.

PROBLEMS CONFRONTING THE GOVERNMENT

The problems which confronted the government, if the war was to be fought without collapse of food supplies to the armies and the civilian population of the Allies, and without economic disturbance at home, could, therefore, be summarized:

1. To increase American exports of the critical commodities mentioned above: (a) By the immediate reduction of waste and consumption in all commodities and by substitution of surplus commodities for those particularly required abroad; (b) by the increase of production.

2. To reduce speculation and profiteering during so great a drainage of supplies, and to assure stability in prices so far as possible, and thus to stimulate production and to secure greater internal economic stability.

3. To control these food exports and imports for the purpose of: (a) Directing maximum supplies to the Allies; (b) protecting our own import supplies; (c) securing fair return in services for supplies to neutrals and eliminating those neutrals who could obtain supplies elsewhere; (d) minimizing the leakage from neutrals to Germany; (e) controlling all buying in our markets as a means of supporting assurance given our farmers, and of preventing profiteering.

ORGANIZATION OF THE FOOD ADMINISTRATION

To effect these purposes, the Lever Act (August 10, 1917), the Food Survey Act (August 10, 1917), and the Embargo Acts (June 15, 1917, and October 6, 1917) were passed by Congress as war measures.

The Food Administration was created by Executive Order on August 10, 1917. The plan of organization adopted was to assemble, so far as possible, the voluntary service of individuals in administrative work and the voluntary co-operation of the householders, the farmers, and the food trades. The results amply demonstrated the high sense of service in our people, as they proved that measures of legal force were needed for an infinitesimal percentage. The central administration was divided roughly into divisions of Cereals, Meats and Fats, Vegetables and Fruits, Sea Food, Dairy Products, Sugar, Enforcement of Regulations, Exports and Imports, Storage, Conservation, Railway Transportation, Overseas Transport, Distribution, Co-ordinated Allies Army and Navy Purchases, States Relations, Licensing, Statistics, etc. Some dozen of interdepartmental boards were set up to secure co-ordination between the Food Administration and other departments of the government. Joint boards for co-ordination of activities with the Allies were established to determine needs, programs, and policies. Some hundreds of voluntary committees of women, scientists, farmers, stockmen, dairymen, and the food tradesmen were set up for advice and co-operation in various lines of activity. With the approval of the governor, a Federal Food Administrator was appointed in each state and he, in turn, selected a local administrator in every county and large city. An Advisory Board of farmers was created with divisions devoted to grain, livestock, and dairy produce. Special Committees of Cotton Seed, Rice, and Sugar Growers in different parts of the country were similarly created.

The state, county, and city Food Administrators created numerous advisory committees in matters of distribution, production, conservation, fair-price determination, and control of speculation. Especially noteworthy were the joint committees of consumers and distributors established in practically every city with useful achievements in many directions.

All together, some 8,000 volunteers gave their entire time to the Administration. Some 3,000 persons, chiefly clerical assistants, were employed at salaries, and it is estimated that part-time service was

given by 750,000 members of committees, principally women. The whole nation was invited to become members of the Food Administration, in one activity or another, and a wealth of co-operation developed beyond any anticipation.

Two corporations were created: first, the Grain Corporation with a capital of \$150,000,000 for the purchase and sale of food under the Lever Act; and, second, the Sugar Equalization Board with a capital of \$5,000,000 to co-operate with the Allies in the purchase of Cuban sugar and to control its distribution in the United States.

Several hundred agreements looking toward assurance of production, stabilization of price, control of profits, and the elimination of waste in connection with distribution and trade practices were entered into with representatives of farm and trade organizations.

An extended series of regulations was promulgated limiting the margins between purchase and sale of foodstuffs, together with other measures to control speculation and profiteering.

The entire amount of Congressional and Presidential appropriations expended by the Food Administration from beginning to end was \$7,862,669. Not only the \$155,000,000 of capital of the two corporations was handed back intact at the close of the Administration but large profits were earned by them. The neutral countries insisted upon advancing the charges for shipping by 1,000 per cent over prewar averages and the Food Administration considered that in depriving our own people of food in order to protect life in neutral countries we were at least entitled to recover a small portion of the excess charges on shipping. The profits of the Grain Corporation and Sugar Board during the period of the Food Administration in operation at home and abroad exceeded \$60,000,000. Therefore the Administration cost the government over \$50,000,000 less than nothing.

STIMULATION TO PRODUCTION

As stated above, at the time of our entry into the war in April 1917 planting was already over to a considerable degree, and effective measures in ground production could not be brought into fruition before the 1918 harvest. The duty of stimulating production was naturally assigned to the Department of Agriculture, whose great service and abilities cannot be overestimated. The activities of the Department had necessarily to take the form of advice and patriotic

appeal to the farmers; and in the latter the Food Administration also joined, through its large voluntary organization. The Food Administration, however, had an equally important field in stimulation to production through its ability to influence prices. The guaranty of a minimum price on wheat, the assurance of stabilized prices on hogs, sugar, vegetable oils, and dairy products, through the control of foreign buying and by internal agreement with producers' associations, were deliberately guided by a policy to encourage production in all of these staples.

In August 1917 the determination of a fair price of wheat was referred to a commission comprised in majority of farmers and was fixed by them at a twenty-cent increase over the Congressional guaranty of \$2.00 at terminal markets for the 1918 and 1919 crops. The agreement was maintained through buying at terminal markets of any surplus offered at this price. Rye, being a complement of wheat and substituting for it, naturally followed the prices and results of the wheat guaranty. The comparative production of wheat and rye has been:

	Wheat (bu.)		Rye (bu.)
Harvest, 1916.....	640,000,000	(not guaranteed)	47,400,000
Harvest, 1917.....	636,655,000	(not guaranteed)	62,933,000
Harvest, 1918.....	921,438,000	(guaranteed)	91,041,000
Harvest, 1919.....	940,987,000	(guaranteed)	88,478,000

In November 1917 the Food Administration gave an assurance to the farmers on hogs (based on its control of export buying) set out more fully elsewhere. The number of hogs slaughtered in public markets is as follows:

	Number of Hogs
1916-17 (fiscal year)	40,201,018
1917-18 (fiscal year)	35,543,037
1918-19 (fiscal year) (assured)	44,398,389

It will be noted that this increase in slaughter was secured in the face of a decrease of 5,000,000 stock hogs at the start of operations. The guaranty given in the fall of 1917 could not and did not affect production until the spring of 1918, and of course realized its full effects in the heavy marketing season, 1918-19.

Owing to the shortage of labor, it was impossible to secure any

considerable increase in domestic sugar production and special attention was devoted to stimulation of West Indian products. In August 1917 the sugar producers of Cuba and the United States were assured a basis of \$7.35 per hundred pounds refined sugar, Atlantic seaboard basis, this amount being increased in September 1918 to \$8.49 seaboard basis for Cuban and \$8.82 for the United States sugar, and so held until September 1919. The total sugar produced in American territory and Cuba has been as follows:

	Tons
Harvest, 1915 (not assured)	4,627,000
Harvest, 1916 (not assured)	5,326,000
Harvest, 1917 (not assured)	5,159,000
Harvest, 1918 (assured)	5,500,000
Harvest, 1919 (assured)	6,052,000

Vegetable-oil producers (cottonseed and peanut) were assured in September 1918 of 17½ cents per pound crude oil, which was maintained until July 1, 1919. The supply of all kinds of vegetable oils was:

	Pounds
1916	1,745,574,000
1917	1,742,931,000
1918	1,911,917,000

Stabilization arrangements were also entered into with rice producers, effective over the 1918-19 harvests, in an effort to reduce our imports and thus our expenditure abroad. The production was:

	Bushels
1916-17	40,861,000
1917-18	36,278,000
1918-19	38,606,000
1919-20	41,059,000

Owing to the commandeering of deep-sea fishing trawlers and crews by the Navy, more than one-half of our fish supply was cut off and this was bound to increase our domestic consumption of other primary commodities. To remedy this, agreements were entered upon with all the seaboard states suspending the restrictions on fishing within bays and the three-mile limit, and organized stimula-

tion was given to coast fishing. A large amount of propaganda was initiated to secure the substitution in consumption of littoral for deep-sea fishes. The fish supplies were maintained at normal, although with great difficulty.

REDUCTION IN WASTE AND CONSUMPTION

The broad fact that, owing to the war, the food supplies of the world were gradually shrinking rendered it imperative to eliminate all waste and to reduce consumption further in the particular commodities needed abroad. This necessity was so great that our Allied colleagues considered it our duty to impose a compulsory ration upon the American population. My colleagues and I, however, believed that the spirit of self-sacrifice of the American people could be relied upon for so great a service as to accomplish the necessary results upon a voluntary basis. To have rationed the whole American population would have required the service of thousands of personnel, drawn from production and war, and would have entailed the greatest difficulties and expense. Voluntary action has the great value of depriving those who can afford it and not those who have no margins for sacrifice. The women of the country were called upon for this service and, under the leadership of the very able women who headed the Conservation Division in Washington, directors were appointed to collaborate with the state and county administrations and a network of committees was established engaging several hundred thousand women. A campaign secured, from 14,000,000 families, 7,000 hotels and eating places, and 425,000 dealers in food, signed pledges to carry out the conservation programs suggested by the Food Administration from time to time.

Various restrictions were imposed on the use of food in manufacturing trades, such as suppression of distillation and later of brewing, of manufacture of candy and sweet drinks, and of other forms of nonessential use and waste in manufacturing trades of all kinds.

The conservation movement was in full force from September 1917 until November 1918, when it was dissolved soon after the Armistice. The proof of its results lies in many directions. The tangible results show that in the volume of exports maintained during the first harvest year after we came into the war, despite the exhaustion of reserves and the decreased production of the 1917 harvest year, was the salvation of the Allied situation.

The food exports as compared with prewar normal are indicated by the following table:

Commodity	Average of Three Prewar Years (Tons)	1917-18 (Tons)	1918-19 (Tons)
Wheat and rye	3,720,398	4,590,928	10,382,094
Other cereals	1,607,296	4,584,633	3,221,624
Pork	498,115	868,551	1,472,154
Beef	93,187	350,983	551,133
Vegetable oils	165,116	75,732	148,910
Dairy products	13,019	306,940	439,294
Sugar*	511,884	1,279,351	1,893,914
Fruits and vegetables.....	350,040	269,796	558,255
Totals	6,959,055	12,326,914	18,667,378

* Including exports to Europe from Cuba. Cuba is included because the drain of sugar therefrom was a direct reduction of American supplies.

STABILIZATION OF PRICES

Under conditions of short world supply and interference with the balance wheel of overseas flow through the breakdown of the channels of transport, great fluctuation in price was inevitable. Inflation of credits with consequent rise in price is a part of war finance, and such general rise gave every opportunity to speculation. Without restraint such a situation would result in great privation to the poorer sections of the community and by the stimulation of speculation would result in the stifling of production. In conditions of rapid fluctuations, falls in price are promptly reflected on to the producer, while rises are largely absorbed by the trades. Another result of fluctuation would be the unbalance of wage equilibrium, strikes, and other loss of production at a time when every productive energy of the whole nation was needed. For example, before the administration was established in the 1916 harvest year the total world wheat supplies were normal, yet the price fluctuated from 98 cents to \$3.25 per bushel. As stated before, the farmer received an average of but \$1.42 a bushel, yet the consumer paid an average for the year of over \$2.50 a barrel more than the farmers' price warranted.

It was obvious from European experience prior to the creation of our administration that attempts to control prices by sheer fixing

of maximum prices by law were not only economically unsound but carried with them the most serious results by stifling production, interrupting distribution, withholding supplies by producers, and stimulating clandestine profiteering. We therefore determined upon an entirely different economic course, founded upon the ability of the government to influence the volume of demand and to control the price offered by dominant buyers in many commodities. Our objects were twofold: First, to secure a stability to prices by preventing decline to the farmer, thus stifling production, and at the same time to avoid undue rise in price and speculation against the consumer. If this be done by commercial operations of purchase and sale and regulation of the normal processes of distribution, disturbance to the normal business of the country could be avoided. In the face of enormous inflation of war finance it was inevitable that prices must rise or production would be stifled. But it was vital that such rise should be orderly and without speculation and the consequent widening of margins between the producer and consumer.

The trend of such inflation is well indicated by the rough approximation of the progress of production and the deposits in commercial banks during five years.

Year	Total Production* (Tons)	Percentage Increase	Commercial Bank Deposits	Percentage Increase
1913.....	1,081,293,417	100.0	\$11,390,918,596	100.0
1914.....	1,019,018,207	94.2	11,974,760,593	105.1
1915.....	1,073,472,988	99.3	12,282,097,638	107.8
1916.....	1,162,895,530	107.5	15,398,090,701	135.2
1917.....	1,241,173,806	114.8	18,444,103,496	161.9
1918.....	1,247,787,883	115.4	20,425,067,839	179.3
1919.....	1,117,181,233	103.3	24,971,784,000	219.2

* Includes coal, steel, iron, cement, agricultural produce.

Our second objective was to control the margins between purchase and sale in each trade so as to prevent the widening of the margins between the farmer and the consumer through speculation and marking up of goods on the shelf.

As the need of increased supplies to the Allies was largely concentrated upon breadstuffs, pork products, beef products, fats, sugar, preserved fruit, and some dairy products, these were obviously the

commodities that were most affected by the international demand. Moreover, a study of the following table indicates the relative importance of various human foods in our national consumption and, therefore, the commodities of principal interest in this connection:

	Total Nutrition
Wheat and rye.....	29.5 per cent
Pork products	15.7 per cent
Dairy products	15.3 per cent
Beef products	5.3 per cent
Corn products	7.0 per cent
Sugar products	13.2 per cent
Vegetable oils	3.6 per cent
	— 89.6 per cent
All other, including potatoes.....	10.4 per cent
	100.0 per cent

It will be seen by the foregoing that not only did foreign demand concentrate upon certain commodities but also that much the same commodities comprise 90 per cent of our national diet. These were, therefore, obviously the key commodities. A study of them will show that they are to a great degree interdependent in price. For instance, the consumption of other cereals will lessen or increase when they exceed or fall below the price of wheat. The price of corn depends to a great degree upon the price of the dominant consumer—hogs. If pork is cheaper than beef, the consumption of the former will replace the latter and the prices will somewhat equalize. Cottonseed oil will displace lard, and the prices react upon each other. Therefore, if certain key commodities are stabilized, it tends to stabilize the others. In the matter of stabilization, the commodities such as wheat, rye, barley, pork products, canned fish, and condensed milk were exported in such a proportion to the total that control of the price and the volume of export by foreign buyers would exert great influence in stabilizing prices. In the matter of sugar, a control of international buying in foreign as well as domestic markets could be made effectual. In the matter of some other commodities, such as rice, cottonseed oil, seed cake, dried fruits, and city milk, the trades are so organized that stabilization agreements could be made between producers and distributors that would protect both sides and the public.

By stipulating the margins in each link of the distribution chain the possible spread was greatly reduced. By the control of storage, the limitations upon speculative action in the produce exchanges, and direct action against profiteering, powerful influences in prevention of great price fluctuation were brought to bear. Finally, by voluntary conservation and the regulation of foodstuffs consumed in nonessential industries, the demand for certain commodities could be reduced and speculation prevented.

The net result of such arrangements was to secure a great measure of stability in price in the key staples. Given this stability at the source, the provisions of the food law controlled the growth of undue margins between purchase and sale in necessary stages of manufacture and wholesale. No attempt was made to fix prices of retailers by European methods but simply to give stability to the markets and eliminate speculative profits through these indirect means, and in every case to take representatives of the producers into council in order to maintain such prices as would stimulate production.

The economic policy of the administration was therefore to stabilize prices and reduce speculative profits by purely commercial pressures and business methods as distinguished from legal regulation. Such a policy allowed broad response to the underlying change in values such as those due to inflation of currency and credit but acted to prevent rapid fluctuations that would on one side discourage production and on the other prevent sudden rises that would precipitate labor difficulties in wage. The greatly increased production mentioned above is proof of the just treatment of the farmer.

It is interesting to note a comparison of relative movement in farmers' returns and wholesale prices of food as shown in three periods by the Department of Labor price indices—which are based upon the year 1913 as 100. The food law gave no power to control retail profit margins except so far as it could be accomplished by voluntary means.

Period	Index Points Rise	
	Farmers' Returns	Wholesale Food Prices
Twelve months prior to the Food Administration.....	81	73
First twelve months of the Food Administration.....	25	6
Twelve months subsequent to Food Administration.....	22	22

It is obvious that prices must rise with inflation; but, despite this, a steadying effect was maintained by reducing the margins between farmer and consumer, and thus good results were obtained without penalizing the farmer, yet protecting the consumer.

The accomplishments were, however, more in the negative field, for without the control of margins and profiteering we should, in the face of inflation, have repeated the experiences before and after the Administration.

CONTROL OF PROFITEERING

The great bulk of our food is of seasonal production. The farmer must in the majority of instances find immediate market, and the food trades must acquire it in a short period and distribute it over twelve months. The food-distribution system is therefore inherently a speculative business at best. The proper discrimination as to the speculative profit necessary, for instance, to induce that in any one year or term of years eggs be placed in storage in April for sale the following January, is not of easy determination. The methods adopted to curtail illegitimate speculation, and thus keep down the margins between farmer and wholesale consumer, were as follows:

a) Margins between purchase and sale or maximum profits on sale were established in practically all branches of food manufacture and wholesale distribution. Such margins were necessary in times when demand exceeded supply, but the determination of these margins led to great difficulties. The larger establishments can do business on narrower margins than the small establishments. To have fixed margins too narrow during the war would drive the smaller concerns out of business, leaving us at the mercy of large monopolies after the war. In any event, margins must be fair to distributors not only as a matter of justice but as a stimulation to their proper economic functions and the healthy condition of the trades. Authority to fix margins to retail dealers was not included in the food law.

b) By securing economy in consumption where short supplies existed through the various devices of elimination of waste, voluntary conservation, or semi-rationing (as in the case of sugar), speculation was directly reduced, as speculators enter the scene only when there is no fear of artificial curtailment of demand.

c) By limiting the trading in futures on produce exchanges, speculation was greatly hampered. In those cases where the actual

commodities delivered as a result of such trading represented but a small percentage of the total transactions, such as sugar, cottonseed oil, butter, etc., the exchanges were closed altogether. In other commodities, like corn, where the trading in futures is the foundation of our method of distribution, the quantity that could be sold under any given contract to any one firm was limited by co-operation of the exchanges so as to destroy any possible attempt at market manipulation. As the government bought and sold wheat, the dealing in futures was absolutely prohibited, as it was not essential to distribution and it was important that there should be no possibility of collusion with government activities.

d) By limiting the period and volume of holdings of food in storage without special permit and by prosecution of hoarders, the trades were not able to hold commodities for speculative rise.

e) Detailed regulations were made in the different trades requiring that all food distribution should pass in straight lines to destination. For instance, a miller could sell only to a wholesaler, a retailer, or a consumer. A wholesaler could buy only from a miller and sell only to a retailer or a consumer. These measures were applied to all food commodities and greatly reduced intertrading and speculation.

f) The embargo on exports without permit made any speculation in export food a futile operation. Such permits were refused a few times early in the war to obvious speculative holders and had a salutary effect.

g) The stabilization of prices was a most effective implement in reducing speculation. For instance, the ability of the Food Administration to advise the public that over considerable periods flour should be about \$12.50 per barrel retail, and sugar about ten cents per pound, brought public opinion into play and placed all distributors on guard; for any profiteering stood out in the community like a sore thumb.

h) Flagrant cases of profiteering and hoarding were prosecuted either by or upon instructions from the Enforcement Division in Washington. The penalties for the violation of the law against profiteering were stricken out by Congress, and therefore legal action became a matter of withdrawal of license or some public expression of contrition or some sale of food at nominal consideration to the government departments such as the Army or the Navy or the Grain Corporation. Such contributions to the Red Cross and other charities exceeded \$500,000, and the value of food sold to government depart-

ments at a nominal consideration exceeded \$1,000,000. The flour millers entered into agreement to turn over any profits in excess of agreed amount by a nominal sale to the Grain Corporation, and such receipts exceeded \$6,000,000. All together, 8,800 cases were handled by the Enforcement Division at Washington in which some penalty was inflicted.

i) The state and county food administrators were in touch with the entire trade and, being periodically informed from Washington of proper price levels, they were able by a simple warning to defeat the great majority of efforts to secure illegitimate profits in the wholesale trades. The fair-price committees, created under their direction in every important town, carried the co-operation of honest traders and served warning upon dishonest ones. The Food Law gave no authority over retail dealers' margins, but the daily fair-price lists served as a guide to householders and through them attention was directed to offenders. The number of warnings issued by national, state, and county administrators during the twenty months ran into several thousands.

I cannot close this discussion without recording two convictions: First, of the 400,000 firms engaged in food distribution, 99 per cent were honest and wished to comply in every way with the law and public good (the remaining 1 per cent were as obnoxious to the trades as to the public, for they cast discredit upon the entire system). Second, the control of profiteering in times of inflation or in periods of short supply cannot be effected by threats or by occasional sensational prosecution of corner grocerymen. It can be controlled only by rendering speculation useless by reducing the opportunity for it; by elaboration of what just profits are; and by the co-operation of the legitimate traders to keep the illegitimate ones in order. During the war such efforts must be concurrent with inflation of currency and credit, and the consequent rise in commodity values necessarily greatly assists speculation and renders its total suppression impossible. The greatest peace remedy for speculation is deflation and increased world production.

CONTROL OF EXPORTS

One of the important roles of the Food Administration lay in this field, and the first embargo under the law was issued at the request of the Food Administrator. In the development of machinery

for the administration of embargoes and for the co-ordination of embargoes issued on other commodities, it became necessary to establish the War Trade Board, comprised of representatives of various government departments, including the Food Administration. The determination of fact and policies on food exports necessarily remained in the Food Administration.

The first objective sought was to divert American food exports as fully as possible to the Allies, thus forcing neutrals to seek the more distant markets for all commodities obtainable elsewhere. For such commodities as they could not otherwise obtain, we sought to reduce neutral supplies to the least amount compatible with humane treatment, and to require return service from them to the countries at war with Germany in consideration of such supplies.

The success of the first policy is indicated by the following comparison of destinations of United States exports the years before and after adoption of these policies:

PERCENTAGE OF TOTAL EXPORTS OF IMPORTANT FOOD COMMODITIES GOING TO ALLIED AND NEUTRAL DESTINATIONS

Export Commodities	Fiscal Year Ending July 1, 1917		Fiscal Year Ending July 1, 1918		Percentage Gain in Favor of Allies
	Neutrals	Allies	Neutrals	Allies	
Wheat and rye	29.1%	70.9%	7.1%	92.9%	22.0
Other cereals	17.8	82.2	3.1	96.9	14.7
Pork products	6.1	93.9	1.8	98.2	4.3
Beef products	12.2	87.8	1.4	98.6	10.8
Dairy products	10.8	89.2	5.2	94.8	5.6
Vegetable oils	49.5	50.5	13.0	87.0	36.5
Sugar	15.1	84.9	7.7	92.3	7.4

The second objective lay in tightening the food blockade against the enemy by prevention of direct or indirect leakages. An instance of indirect leakage was the large importation of feed supplies by neutrals from the United States, by which their herds were greatly increased during the war and a large part of the resulting animal products was shipped to Germany.

Both our own and the Allied populations were denying themselves food, coal, and other commodities in order to further their efforts in a struggle to maintain civilization. It seemed obvious, therefore, if we were to make still further sacrifices in order to

provide food or to coal ships to carry food for neutrals, that we should have adequate assurance that the utmost economy would be exercised in their consumption, that these supplies should not directly or indirectly benefit the enemy, and that we should receive some service in return.

The Food Administration maintained an organization at home, and representatives in each neutral country in Europe and South America, for determination of neutral production and of the actual minimum consumption necessary, and thus the deficiencies in their supply that we should provide. It was further necessary to insist upon measures of rationing among neutrals in order to keep down their consumption.

The third objective of export and import control was its important bearing on speculation and profiteering, and protection to our farmers and consumers. As dealers could never know in advance the shifting policies of the government, they could not intelligently and did not often attempt speculation in export commodities. In several instances export permits were refused to firms for commodities which were the subject of speculative action. The control of all foreign buying of food was the most important feature of export regulation. Arising out of the necessity of foreign governments to ration their populations, and the governmental control of their shipping, so as to force transport of essential foods from the nearest markets, there grew up the necessity for them to displace merchant trading by purchasing their whole supplies directly on behalf of their governments. The Allied governments very early consolidated their buying agencies, in order to avoid competition with each other, and at times even acted on behalf of neutrals. There thus arose a consolidation of buying power that was able to dominate the prices in the American markets in the great export staples, as, for example, in wheat and pork. We early decided that the control of such a power must, in the interest of both our producers and consumers, rest in our government. By imposing conditions in export permits the policies of buying were administered under the direction of the Food Administration and were directly used to stabilize prices in protection of our consumers and to maintain assurances given to our farmers. The control of this buying greatly contributed to nullify possibilities of speculation.

The control of exports was removed by the government Board during the early part of 1919 and in some commodities against the

protest of the Food Administration on the ground that, in the end, it would only facilitate speculation that would grow out of over-exporting our food for commercial purposes.

CONTROL OF IMPORTS

We were dependent upon imports for the supply of all or part of several important food commodities—sugar, coffee, vegetable oils, rice, cocoa. The price of these commodities was influenced to a great degree by co-operation with the Allied governments to eliminate competition against each other in purchases in common foreign markets. Prices of these commodities were thus kept to reasonable figures to our consumers and the expenditure of our national resources in foreign remittances reduced. Through the drain of shipping to more direct war purposes, our import supplies were seriously threatened and at times even cut off. To remedy this, it was necessary to create a Shipping Division in the Food Administration and to secure definite assignments to the Food Administration of ships for import transportation. The small vessels and sailing ships not capable of transatlantic transport were mobilized for these purposes. Arrangements were made with committees of the various trades to assign space to their members, to issue import permits only through such organizations and upon undertakings eliminating international competition, and to control the profits to be realized by trades upon such imports. Something over 5,200,000 tons of incoming food was transported through the Food Administration.

CO-ORDINATION OF GOVERNMENT PURCHASING

The concentration of enormous food purchases in the hands of foreign government agents, and in the hands of our own War and Navy departments, and then the competition with each other, produced an initial situation in the spring of 1917 of acute speculation and kiting of prices. The purchases of many of these agencies were larger than the ability of any one trader to supply, and a request for bids in such volume resulted in traders endeavoring to secure supplies from each other in order that they might offer them to these buyers. Thus a double speculation was created.

The Food Administration therefore recommended the creation

of the war Food Purchase Board, comprised of representatives of these various large buyers; and through this board the needed supplies were allotted to manufacturers at prices calculated, by the Federal Trade Commission accountants, to cover a reasonable margin of profit over raw material and manufacturing costs. In some cases where the products absorbed were of such large proportion as to diminish the civilian supply below normal, the manufacturers were brought into agreement to supply the trades at prices agreed upon with the War Food Board. In numerous cases, substitution of different specifications to meet seasonal changes in production were effected in purchase programs, particularly in beef and canned goods. These changes materially stabilized the market and protected producers and the public. Inspection by the agents of the Department of Agriculture assured the quality of supplies furnished.

Supplies of cereals, flour, and sugar were provided to the various purchasing agencies through the Grain Corporation and the Sugar Board, either as the sole buyer and seller in their behalf, or by purchases made under the supervision of the two corporations. The Grain Corporation supplied, directly or indirectly, not only foreign buyers and the Army and Navy, but also the civilian trade with such amounts of grain as were necessary to maintain stability of prices and the guarantees.

The total volume of purchases of all supplies thus made under the co-ordination of the agencies set up by the Food Administration aggregated over \$7,250,000,000 during the course of its existence. These operations had a marked bearing upon the stabilization of prices, the elimination of speculation, the protection of the consumer, and the assurances given to producers referred to elsewhere.

RAILWAY CO-OPERATION

The great pressure upon our railways rendered it necessary to determine priorities in railway movement of commodities. The priorities and embargoes initiated by the railways produced acute shortages and gluts in internal food movements and greatly influenced prices and speculation against both farmer and consumer.

In order to maintain an even flow of food commodities from farm to market and at the same time to economize in the use of railway rolling stock, a Railway Transport Division was erected by the Food Administration with representatives in the regional offices

of the Railroad Administration, from which permits were expeditiously issued for essential food movements. Beyond this, the flow of food to seaboard was organized by a series of Food Administration permits, so as to accommodate itself to the arrival of shipping and thus prevent undue accumulation at the ports and delay in discharge of cars. Ultimately the great movements of grain and meats were organized into full special train services from the interior with great economy and saving in time of seaboard movement.

BREADSTUFFS

As stated above, the national stocks of bread grains had been reduced from 153,000,000 at July 1, 1916, to 43,800,000 bushels—less than one month's supply—at July 1, 1917. The wheat harvest of 1917 proved far below normal at 636,000,000 bushels. On the basis of normal consumption there was no available export surplus, more especially in view of our depleted stocks. This is well demonstrated by the fact that the unrestrained home consumption during the 1918 crop year about equaled the whole 1917 crop. In the face of this situation we were called upon to find, during the crop year, more than 100,000,000 bushels for the Allied civil population and armies.

During the six months prior to the creation of the Food Administration, wheat was the center of enormous speculation, having risen since the previous harvest from 98 cents to \$3.25 per bushel, with flour \$17.50 per barrel to the consumer in the spring of 1917. The Department of Agriculture shows that the farmer received \$1.42 per bushel for the entire harvest. Because he is compelled to market his wheat mostly in the fall, he does not proportionally benefit by speculative spring rises. As about four and one-half bushels are required to make a barrel of flour, the farmer's average share of the flour price was therefore about \$6.50 per barrel. The margin between him and the consumer was consequently at one time \$11 per barrel. The result of this speculation was that for the whole fiscal year's flour the consumer had paid an average of over \$2.50 per barrel on the 90,000,000 barrels annual consumption more than he should have, or, alternatively, the farmer had received about sixty cents per bushel less than the consumer's average price warranted.

These were the results of the isolation of our markets from the balance wheel of the world market through war dislocation and our

overexport. It was certain that the previous year's experience would repeat itself with more violence the next year in view of the shortage in the crop and the necessity for deducting from consumption so large an amount for the Allies. The President therefore called a commission, of which the majority were representatives of the farmers' organizations, and on August 30, 1917, that commission recommended a stabilization of prices in the interest of both farmer and consumer. After a study of farmers' costs and fair profits, they recommended a stabilized price of \$2.20 per bushel Chicago basis, No. 1 Northern, equal to an average for all wheat of about \$2 at the farm. To carry out this operation, to execute the minimum guarantee on the succeeding crop, and to carry out other provisions of the Lever Act, the Food Administration Grain Corporation was created with a capital of \$150,000,000 subscribed by the government. The recommended fair price was made effective by suspending exchange speculation in wheat, the Grain Corporation purchasing at the fair price at the terminals and, where necessary, reselling to the trades. Agreements were entered into with the millers limiting their profits to a maximum of 25 cents per barrel, the millers agreeing to pay any excess that might eventuate to the Grain Corporation. Jobbers', storage, commission merchants', wholesalers', and bakers' margins were fixed and an appeal was made to all these trades to assist in holding down the price of bread. Active conservation was undertaken as previously outlined.

During the 1917 crop year, the Grain Corporation bought and exported to the Allies approximately 22,700,000 barrels of flour and 28,000,000 bushels of wheat. Due to the co-operation of our women and all the handling trades, we completed the crop year on a consumption of 27,000,000 barrels less flour than normal, thus tiding our Allies over the most critical winter of the war. During the year a stable price of \$12.50 per barrel was maintained to the consumer and an average of \$2 per bushel on the farm to the farmer. The consumer's price was therefore \$5 per barrel less than that of the spring of 1917 and the farmer received an average of nearly 60 cents per bushel more than the previous year. It is important to note that the farmer's price for the year was 143 per cent, the retail flour price was 108 per cent, and the bread price 73 per cent over prewar normal. The average of all wholesale commodities, as shown by the Department of Labor, was 86 per cent over prewar normal and thus the farmer was above the general level, while the elimination of specu-

lation, and economies brought about in marketing, protected the bread consumer from the high level established for the farmer.

The crop of 1918 was guaranteed at \$2.26 per bushel, being 26 cents above the Congressional minimum; and, as the crop was equal to requirements, no attempt was made to stabilize the price except as to the minimum. The crop was 921,000,000 bushels; the turnover of the Grain Corporation during the crop year amounted to 400,000,000 bushels and 301,000,000 bushels were exported. As the carry-over was about the same, the year's consumption amounted to about the equal of the crop of 1917. Had it not been for the guaranty, prices would have gone far below the minimum, because the Allies transferred their demands to Argentina and Australia for cheaper wheat for a period of three months after the armistice, during which time the Grain Corporation absorbed a great glut. Millers and other buyers were free to purchase at any price. The statement that the Food Administration made the minimum price the maximum for the 1918 crop is therefore incorrect. The price remained near the minimum solely for reasons of demand and supply. The situation for the 1917 crop was very different; and if the price that year had not been stabilized and bread and flour had been allowed to fluctuate during the crop year in the presence of insufficient home supplies, after feeding the Allies, in all probability we should have seen the \$35 flour prophesied by the trades. The country would have had an epidemic of strikes and reduced production, and in the end the farmer would have gained little from the rise and the speculator much.

In making purchases of the 1918 crop, the Grain Corporation resources of \$150,000,000 were totally inadequate. It is very doubtful if legislation could have been secured to increase the resources, although the duty of protecting the guaranty was laid on the Grain Corporation; but the confidence in the personnel and policies of its president and the fourteen zone vice-presidents enabled it to borrow at one time as high as \$385,000,000 additional.

For the period from August 1917 to July 1, 1919, during which time the Grain Corporation was administered by the Food Administration, its ascertained net profits, carried forward as earned surplus, amounted to approximately \$24,000,000. Of this, approximately \$4,500,000 was a refund of millers' profits, in excess of 25 cents per barrel, from the 1917 crop; and an additional \$3,500,000 has been collected from that source by the corporation since the date of the accounts. There was also carried forward a liberal sum as reserve

for contingent liabilities, part of which became profits. The profits were mostly earned from neutral trade, as it was considered that as neutrals were charging us several times prewar rates for shipping, they should be charged a profit for our wheat. During this period, the estimated profits on business with neutrals amounted to \$20,000,000. Proper allowance for interest to the national treasury, on capital actually employed, would have amounted to about \$10,000,000. The total operating expenses of the Grain Corporation to June 30, 1919, amounted to \$3,424,071.08. The actual turnover in foodstuffs bought and sold amounted to about \$5,500,000,000.

Several interesting minor phases occurred in this period. The Grain Corporation, in co-operation with the state administrators, set up in the grain-harvesting states a campaign of instruction in better threshing methods; and it is reliably estimated that 30,000,000 bushels of grain, valued at approximately \$60,000,000, were saved to the producers at an expense to the Grain Corporation of about \$60,000.

Since December 1917 the Grain Corporation, first in conjunction with the Department of Agriculture and after July 1, 1919, at its own expense, has kept in the field a corps of experts on fire and dust explosion prevention, who have inspected properties, made suggestions, demonstrated hazards, and educated warehousemen in the elimination of these hazards. The total expense of this service to July 1, 1919, was negligible; and the value of it can be estimated when the statement is made that from December 1917, when this work was taken up, to July 1, 1919, the Grain Corporation lost not a single dollar in fire or explosion, although, under hazardous war conditions, it had at times as high as \$500,000,000 worth of foodstuffs exposed in the various warehouses of the country. This educational work, plus the experience and care and energy of the practical men in charge of the various zones, is the explanation. The corporation carried no insurance, but at normal rates premiums during this time would have exceeded \$2,000,000, which was saved to the government.

SUGAR OPERATIONS

Our situation in this commodity differed from most others, because we are dependent upon imports—largely from Cuba—for one-half of our supply. As stated, the Allied supplies formerly came

from enemy territory and the East Indies, and shipping had become so short as to limit their receipts from the East. The Allies, therefore, came into competition with us for Cuban sugar and there were insufficient supplies to maintain anything like normal consumption among the peoples fighting against Germany. Owing to this shortage and competition, we were faced not only with short supplies but with sharply ascending prices.

The policies therefore adopted were: (a) to control the price and distribution of domestic sugar by voluntary agreement with domestic producers; (b) to control manufacturers' and distributors' profits; (c) to purchase the Cuban sugar jointly with the Allies; (d) to reduce consumption, especially in the sweet drink and candy trades; (e) to stimulate production.

As to the latter, the shortage of labor in the United States gave little hope of increased home production, although by appointment of producers' committees and adjustment of prices for beets, the production was maintained. Under policies carried out in connection with Cuba, its production, as shown above, was very materially increased.

The problems of distribution and conservation were impossible of solution in the fall of 1917, owing to the exhaustion of the previous crop before the Food Administration came into being, and some temporary shortage developed in the northeastern states. During 1918, however, a partial rationing, which threw the sacrifice upon the sweet drinks and candy trades, did protect the householder and other essential users.

The purchase of the 1918 Cuban crop was effected through a joint inter-Allied committee, but decreasing shipping and other difficulties made it necessary to create the Sugar Equalization Board, with a capital of \$5,000,000, held by the government. The Board made advance purchase of the Cuban crop of 1919 on behalf of ourselves and the Allies, and it undertook the distribution, and control of price in co-operation with domestic producers as from July 1918. By providing stabilized prices on basic materials and the fixing of margins between purchase, and resale for refiners, wholesalers, and retailers, the public was protected by a steady even price of sugar during the entire period of the Administration. The retail price on seaboard basis was reduced from 11 cents to 9½ cents at the establishment of the Administration. It was later advanced one cent per pound, in the fall of 1919, to cover the necessary increase to pro-

ducers. The public was protected from large profits accruing to the trade, through this one cent per pound advance in price, through the purchase and resale of all existing refiners' and wholesalers' stocks at a profit to the Sugar Board of \$5,165,024. The Food Administration relations to sugar control ended July 1, 1919, although the Board continued in liquidation of outstanding contracts.

The benefits to the consumer by sugar operations are well indicated in retrospect of the experience since control was removed. Retail prices have advanced approximately eight cents per pound, even with more abundant supplies, and are now at about the same level as uncontrolled sugar in neutral markets during the war. It is interesting to note that, whereas the margin between duty-paid Cuban raws and retail refined sugar seaboard basis was approximately $3\frac{1}{2}$ cents during the period of control, it is now about 6 cents per pound, indicating the repression exerted on speculation and profiteering. Our consumption of sugar during the two years of control was over fifteen billion pounds. Each cent per pound saved to the consumer was thus a total saving of \$150,000,000. The aggregate saving through control can easily be computed at \$750,000,000. Under free distribution in 1919 the consumption of the United States increased by about one billion pounds (500,000 tons) over that of the year 1918, thus indicating the extent of conservation. Some shortage developed in the fall of 1919 after the dissolution of the Food Administration; but had it not been for the Administration's control of the Cuban crop, the world drain after the Armistice would have greatly reduced the supplies of the United States and much increased this shortage. The sales through the Sugar Board aggregated about \$600,000,000; and by its adjustment of prices to protect different producers, the Board earned a surplus of some \$30,000,000 for the government.

PORK AND BEEF PRODUCTS

One of the most difficult operations undertaken under the Food Administration was the stimulation of production and the control of distribution of pork products. As mentioned elsewhere, the shortage of shipping had not only driven the Allies on to our markets for the supplies, but the decrease in the productivity of their dairy herds, the very large slaughter of their hogs before our entry into the war, had decreased their fat supplies to the point of great danger. The Ameri-

can hog was the only possibility through which an increased supply of fats could be provided in time to be of service. It was possible to secure increase in pork production in a year, whereas cattle would require three years. Due to overexport in the previous year, the number of stock hogs had decreased by over 5,000,000.

While it appeared possible to secure a sufficient export margin by conservation during our first year in the war, it was evident that the continued inroad into Allied herds would require increases of exports the following year and therefore could be obtained only by a great stimulation in production. Such stimulus must be obtained as a corn product from the great corn states. Propaganda was initiated jointly with the Department of Agriculture in stimulation of increased production. Conferences were called with the principal producers' representatives, and after receiving their reports the Administration, in November 1917, gave an assurance to farmers that (so far as it could be protected by the control of foreign buying) a minimum of \$15.50 per 100 pounds would be maintained for average hogs at Chicago, this assurance to hold until September 1918. On the recommendation of various producers' associations, a further assurance was given that, so far as the buying control of exports permitted, hogs farrowed in the spring of 1918 and consequently marketed in the fall and winter of 1918-19 would be held to a minimum price equal to a ratio of 13 to 1 on the average price of corn fed. The exports amounted to about 17 per cent of the total production and were sufficient to influence the price greatly, although not to control it entirely.

The packers and the livestock exchanges and the Allied buyers entered into a voluntary arrangement to co-operate and support the minimum price over the heavy marketing season, when the large fall in price was usual. Contracts were made between the packers and the Allied buyers providing for a profit of one-fourth of one cent per pound, and regulations were imposed upon the packers that the same price should be made on pork products to the civilian population as that made to the Allies.

The 45 firms engaged in the packing industry were placed under regulation limiting their profits, the larger packers to a maximum of 9 per cent on their food products and the others to $2\frac{1}{2}$ per cent on their turnover. Owing to the lack of authority in the Food Law, it was impossible to control profits on by-products and various other interests of the industry.

As shown by the accounts of the five great establishments, the actual earnings upon that portion of their operations which were legally controllable under the Food Law during the period when they were under regulation amounted to 1.6 per cent upon their gross sales and equaled 5.6 per cent upon the actual capital employed. Their gross profits were reduced during the year of regulation approximately \$21,000,000 below those of the uncontrolled year previous to regulation.

Owing to the heavy storm delays in December and January, 1917-1918, hogs were held on the farms and came with a great rush in February and March. It was necessary to secure the assurance that the Allied governments should make very large forward purchases of products in order to maintain the minimum during this heavy marketing season. Extra storage was provided for some 450,000,000 pounds of pork products to accommodate this situation, and during a period of two months over 600,000,000 pounds were purchased for the Allied account. In order to secure the movement of products from the Mississippi Valley to seaboard, packers' shipments were combined into several special trains daily. The minimum price assured the farmers was maintained with difficulty during the rush season, but maintained itself thereafter with no trouble until the fall of 1918. In anticipation of the Armistice and possible freeing of the Argentine surplus for export, a slump of some 40 cents per bushel occurred in corn. On the theory of 13 to 1 on the price of corn that had been fed to the hogs, the farmers naturally anticipated that a fall of approximately \$5.00 a hundred in hogs would sooner or later follow from the fall in corn. The consequence was a panic of marketing of hogs and the failure of the minimum.

The Livestock Advisory Committee of the Agricultural Advisory Board, together with representatives of the swine-producers' associations, were called into conference in October, and it was determined by them that it was in the interest of the farmer that the 13 to 1 ratio should be abandoned in the face of the uncertainties and probable wild fluctuation of the corn market. They recommended a minimum assurance of \$17.50 per hundred to the farmers. The agreements mentioned above were reinforced by an arrangement through the livestock exchanges that their agents would not pay less than this amount for hogs, and co-operation with the railways was established, so that shipments to market would be limited to the number of hogs equal to the capacity of the packing houses. Gluts of hogs

at the central markets would obviously defeat the price. This reorganization proved successful until a new disturbing factor entered, at the end of December 1918, in the refusal of the Allies, as a result of the Armistice, to continue the purchases on the \$17.50 price level, in view of their ability to secure fat products in other parts of the world for a much lower price. As the surplus fat production had been provided solely in the interest of the Allies, it was considered that they had a positive obligation to assist in maintaining the awards that had been given the farmers in co-operation with their agents. One of the Allied governments, which had hitherto purchased 120,000,000 pounds per month, withdrew entirely from the market; and later on the other governments reduced their purchases despite all protests. Demand was made that the blockade restrictions on the import of fats by neutral countries and Germany should be removed. This was refused upon political grounds. In consequence, the Agricultural Advisory Board was again called in Washington to assist in holding the situation, and our Food Administration in Europe took measures to purchase large quantities of advance supplies through the various agencies of the American government in anticipation of the ultimate relaxation of the blockade. The situation was tided over, and ultimately the products were marketed in Germany in return for gold payment.

The actual average for the twelve months after enlarged assurance came into force was \$19 per hundred, or 143 per cent over average prewar prices. The actual price during the heavy marketing season worked out at about 13 to 1 for the farm value of corn in the principal hog-producing states contiguous to the great Mississippi Valley markets. That the consumer was also protected by these arrangements for a stable price and controlled margins is indicated by comparing the period of July 1918 to February 1919 with a similar period of 1919-1920 after control was removed; in the former period the average price of hogs at Chicago was \$18.14 and the retail price of products to the consumer from 100 pounds of live hog was about \$37.32. The same period 1919-1920 shows \$16.69 to the farmer and \$37.67 the retail price to the consumer. In other words, during the period of stabilization and control of trade margins, the farmer received 8.7 per cent more for his products without tax on the consumer, or, put in the other way, the consumer now pays 8.7 per cent more for his products without benefiting the farmer. It is the opinion of our statistician that this increase in

margins lies largely in the wholesale and retail trades. During the work of the Food Administration a considerable experience was gained in the structure of the packing industry. A report was made to the President upon these matters recommending certain reforms but pointing out that they must properly be undertaken after the war, for the Administration must concentrate itself upon mobilization of our resources for immediate war purposes.

The Department of Agriculture shows that our stock hogs decreased from 65,645,000 at September 1, 1916, to 60,218,000 at September 1, 1917. This was due to overslaughter and export during the year before we came into the war. Such a decrease would indicate an overexport of at least 600,000,000 pounds, and the loss of stock hogs seriously handicapped the exports the following year pending recovery of the herd during our first year of the war. The tables below of dressed weight of hogs coming to the inspected markets (probably 50 per cent of the production) indicate (*a*) the effect of this overslaughter on production in the first year after our entry into the war; (*b*) the even increased exports of that year obtained very largely by the women's work in conservation; (*c*) the enlarged production by our farmers and the increase in exports for the second year; and (*d*) the result in increased consumption during the last ten months by removal of all restrictions on consumption.

Year	Dressed Weight of Inspected Slaughter (Pounds)	Exports (Pounds)	American Consumption from Inspected Slaughter (Pounds)
Annual average, three prewar years .....	.....	996,000,000	.....
Fiscal year 1916-17	6,072,000,000	1,499,000,000	4,573,000,000
Fiscal year 1917-18	5,360,000,000	1,737,000,000	3,623,000,000
Fiscal year 1918-19	7,366,000,000	2,944,000,000	4,422,000,000

We normally export but little beef and, even with conservation directed to secure the surplus needed for our own and the other armies in Europe, the volume of export was too small a percentage of the whole production to have serious weight in prices. The exports over the control period amounted to only about 5 per cent of the total production. Therefore the Administration could not, in any event, undertake stimulation by price. Moreover, the time required

for increase of herds made any policy of this kind of no avail for the probable period of the war.

The representatives of the cattle associations co-operated with the Food Administration to secure changes in the various Army specifications, as to weights, from time to time, so as to give more even demands and stability in prices for the seasonal changes in different types of beef. A small minority of cattle raisers complained of conservation measures restricting their markets; but these measures were maintained only during the seasons of short marketing, when vitally necessary to secure the Army exports. By such means the exports of beef were increased from 700,000,000 pounds in the fiscal year 1917-18 to 1,100,000,000 in the fiscal year 1918-19, although the total slaughter decreased. Very little or no American beef went into civilian consumption in Europe, as such supplies were secured by the Allies from the much cheaper beef of the Argentine.

Conservation was tried in order to secure some mutton exports, but the results were insufficient to warrant continuation.

OTHER ACTIVITIES

Further paragraphs could be written in description of the activities in connection with the regulation of wholesale distribution, the produce exchanges, Boards of Trade, the canning trades, milk supplied to cities, cold storage, perishables, beans, peas, cottonseed, rice, and so forth, but the above-mentioned items should prove sufficient to convey the nature of the results sought and the effect. In all of these activities the great objective was to co-operate with the producer and to protect the consumer by limiting the margin between the producer and the consumer to the least possible figure compatible with the normal and proper functioning of business.

UNITED STATES FOOD SITUATION AFTER THE ARMISTICE

With the completion of the war, it was determined to demobilize the Food Administration as rapidly as the government could liquidate guaranties to producers and protect consumers from speculative advantage being taken of demobilization. The return of business to normal was imperative and the reduction of national expenditure essential. Of even more importance was the fact that all these meas-

ures, while necessary to enable the prosecution of the war, become in peace a strangulation of initiative and would burden the country with bureaucracy. During war a high degree of altruism maintains initiative; but in peace there can be but one basis of economic control, that is, freedom for normal processes of business with prevention of domination by the few. Those activities based upon a continuation of the war were demobilized within sixty days, and by the end of March there was outstanding only the control of wheat, sugar, pork, and cottonseed products. The wheat control was transferred to the new Wheat Director, and the sugar control to the Equalization Board, both on July 1. The cottonseed control expired in May 1919. The pork-products control was terminated at the end of March (instead of the end of June) by the War Trade Board, over the Food Administration protest that world conditions were still uncertain and consequently consumers would suffer greatly without benefiting the farmers. This protest has since been justified.

The greatest duty of the Food Administration at the Armistice, however, was to see that the great surplus of food supply—amounting to over 18,000,000 tons—provided by the denial and exertion of our people, was disposed of, without creation of financial difficulties to our farmers and the public at home.

With the Armistice declared, the world food situation materially changed. The markets of Australia, the Far East, and the Argentine were glutted with stocks of food due to the shortage of shipping, and as the prices were below American levels the Allied governments naturally desired to take advantage thereof with the shipping freed by the Armistice. On the other hand, our agricultural industry with a surplus of some 18,000,000 tons—three times our normal—was by their action in acute danger of collapse. On the other hand, the surrender of Germany had been brought about largely by economic exhaustion and the impending starvation of 200,000,000 people under German domination. Our surplus would be needed by the newly opened areas even if the Allies deserted our markets, and our problem was to carry over this period of change in markets. Given a stoppage in the flow overseas of this great surplus for sixty days, our merchants would have ceased buying from our farmers and a collapse in prices would have resulted that not only would have done great injustice to the producer but would have betrayed the assurances we had given them and, through depression in the values of stocks in the hands of manufacturers and distributors, would have

jeopardized our country banks, which mainly financed the movement of these commodities.

With the President's approval, the headquarters of the Food Administration was transferred to Europe in order to deal with these problems. A demand was made that the blockade on neutral and enemy countries should be removed, not only in the interest of the economic stability of the world but in the interest of humanity. Demand was also made that the Allies should continue their supplies from the United States until other outlets could be secured. It is not the time to discuss the attitude of some of the Allies in refusing to co-operate in these matters and the consequent jeopardy into which our whole commercial structure was placed by the failure of some of them to maintain an obvious obligation. It is sufficient to say that, largely through the mobilization of effort, we temporarily absorbed the surplus and prevented a glut during the three months to March 1919 required to break down the blockade and to organize the economic and relief measures in Central and Eastern Europe. Such a glut would have resulted in a vast waste of perishable food, demoralization of the agricultural industry, with losses to the consumer from the inevitable speculation.

SITUATION IN CENTRAL EUROPE AT THE ARMISTICE

From the German collapse and the breaking up of the four empires, some sixteen new or old states were erected or secured their freedom. The collapse of Germany had been largely brought about by her economic exhaustion, and the whole area was starving. It was imperative that no charge of inhumanity should be laid at our door by continuing this starvation after the surrender. Furthermore, the only hope of saving Europe from anarchy lay in prompt measures on a large scale. Most of the new states were without organization to provide credit, transportation, or distribution. It was therefore necessary to undertake the practical economic control of a large part of Europe and to co-ordinate it with the existing economic controls of food, finance, and shipping of the United States and the Allies. This was accomplished through the appointment of the American Food Administrator as the executive head of supplies, with mandatory powers over railways and coal mines and telegraphs in large parts of the old empires by the Supreme War Council. The whole of the operations both in liberated and enemy, as well as neutral and

Allied, countries was co-ordinated so far as necessary by the organization of the Supreme Economic Council. Among other arrangements carried out was an agreement transferring the entire German and Austrian mercantile marine of some 1,500,000 tons for relief and reparation purposes.

• Extensive measures were taken under the Food Administration in the rehabilitation of transportation in Central and Eastern Europe in order to make effective the supplies furnished. Through a large directing staff drawn from the American Army and Navy, and the sale on credit of a large quantity of army materials, the railways, disintegrated by war use and by political changes at the Armistice, were sufficiently co-ordinated and rehabilitated to maintain the movement of the basic necessities of life throughout this area.

• The rivers Elbe, Danube, and Vistula were opened for traffic by agreements effected by the Food Administrator under authority given by the Supreme Economic Council.

In order to cope successfully with the movement of supplies and control of railways, and to rehabilitate economic life generally, it was necessary to organize telegraphic communication through Central and Eastern Europe. Some 10,000 miles of telegraph lines were ceded by the various governments to our organization and placed under our operation as a telegraphic unit.

An organization was set up to secure the better production and distribution of coal in Central and Eastern Europe. Through agreements perfected between the various governments concerned, coal supplies were maintained to those areas where transportation facilities had broken down. The distribution of many million tons of coal was thus regulated.

In addition, a large amount of exchanges in potatoes, grain, meat, etc., were arranged between interior countries in Central and Eastern Europe by the Food Administration, amounting to somewhat over 500,000 tons of foodstuffs.

The support of certain critical countries was made possible by the special appropriation of \$100,000,000 by Congress. The following tables show approximately the supplies furnished from this fund and their destinations: first, those for which obligations of repayment were taken, and, second, those contributed in charity for the relief of undernourished children. Of the total of about \$96,000,000 actually expended from the fund, about \$86,000,000 should be recoverable with the rehabilitation of Europe.

SPECIAL FEEDING OF CHILDREN DURING THE ARMISTICE

The special care of starving children of the poor was set up as an independent charitable organization, operating under a committee system, and providing for approximately three and one-half million hungry children in some ten countries in Central and Eastern Europe. This effort was supported by the American government to the extent of approximately \$10,000,000, which was about one-half of its cost, the remainder being provided by public charity and governmental subsidies from various quarters. This administration was based upon the creation of a great system of volunteer committees in twelve different countries and the service of the better-to-do for the poor in those countries contributed very greatly to soften class conflict, in addition to performing its primary function of preserving child life. The saving of the child life of the poor of Europe should be a matter of especial pride to every American.

CONCLUSIONS OF ARMISTICE RELATIONS

The result of these operations was to carry Europe (except Russia) through the greatest famine since the Thirty Years' War without appreciable loss of life, although necessarily with some privation.

BELGIAN RELIEF COMMISSION

It seems proper to refer to this enterprise at this point, because it was, during the years 1917-19, under the direction of the officers of the Food Administration, although maintained as a separate organization. The Commission for Relief in Belgium was created under my chairmanship immediately after the outbreak of war in Europe in September 1914, and continued without interruption until April 1919. During the entire war it was conducted as a neutral organization, having many of the attributes of a neutral state. It enjoyed direct diplomatic relations with Allied, enemy, and neutral governments, through its own representatives, had immunity from submarine attack and naval interference (although occasionally violated by the enemy), and flew its own flag. It was financed initially by charity and later partly by commercial operations and partly by governmental subsidies arranged directly with the Allied governments, under authority from the fugitive Belgian government. Finally, the sums expended were exacted for repayment from the

Germans by the Treaty. The Commission not only undertook the care of the destitute, which at one time rose to over 4,000,000 out of the total population of 9,500,000 in occupied Belgium and France, but also undertook to provide the remainder of the population with its necessary food imports; in the consummation of these operations it became the Food Administration of Belgium, controlling production and distribution of local foodstuffs as well as imports. During the five and one-half years of operations the Commission delivered the following imports:

SUMMARY BY COMMODITIES OF RELIEF DELIVERIES TO BELGIUM AND FRANCE BY
THE COMMISSION FOR RELIEF IN BELGIUM—1914-1919*

(Metric Tons)

Commodity	Belgium	France	Total
Flour	335,608.0	75,813.0	411,421.0
Grain	2,801,887.0	509,011.0	3,310,898.0
Rice	215,411.0	102,044.0	317,455.0
Beans and peas.....	122,105.0	49,329.0	171,434.0
Pork products	242,517.0	137,409.0	379,926.0
Milk	27,169.0	53,752.0	80,921.0
Cocoa	5,882.0	6,988.0	12,870.0
Sugar	1,517.0	49,507.0	51,024.0
Miscellaneous food	108,258.0	65,014.0	173,272.0
Soap	14,490.0	24,639.0	39,129.0
Clothing and miscellane- ous	21,336.0	18,373.0	39,709.0
Total tons	3,896,180.0	1,091,879.0	4,988,059.0
Total value	\$641,056,693.69	\$220,283,550.52	\$861,340,244.21

* Frank M. Surface and Raymond L. Bland, *American Food in the World War and Reconstruction Period*, Stanford University Press, 1931, p. 13, Table 4.

The destitute were cared for from charity, from profits made upon sales of imports to the self-supporting population, and from the profits made from distribution of local production to the self-supporting, as also from internal charity and from municipal subsidies.

CONTINUATION OF EUROPEAN RELIEF OVER THE WINTER OF 1920

It was evident at the termination of relief measures in August 1919 that certain limited localities and classes in Europe would re-

quire exterior assistance over the winter of 1920 to prevent actual starvation. This need was a mere echo of that of the previous winter. It embraced the poorer sections of the larger cities in Finland, the Baltic States, Poland, Austria, Serbia, Czechoslovakia, and the whole of Armenia. In order, therefore, that American generosity and concern for the welfare of the less fortunate should not be found lacking, the principal officers of the American Relief Administration volunteered to continue the organization as a private charity co-ordinating with various other American activities.

Under these arrangements the European Children's Fund has been set up to carry on the work of feeding two and one-half million children throughout the areas mentioned above. This work is supported by numerous subcommittees in the United States of Polish, Serbian, Hungarian, and other racial groups, and the Jewish Joint Distribution Committee. Under arrangements with various European governments, the Fund has received residues of supplies and balances remaining from the operations of the Supreme Economic Council of the previous winter. The supervision of relief measures in Russian Armenia has been continued under the American Relief Administration. The relief supplies were furnished by the Near East Relief and from sales of flour on credit by the Grain Corporation. Transportation of these supplies was supported by the Red Cross, the Commonwealth Fund, and the British Government. Co-ordination has been arranged in support of the feeding of children of the German poor through the American Friends' Service Committee and various other activities. A method has been devised for the remittance of orders for food on warehouses established in Europe, to take the place of monetary remittances to relatives abroad, and by co-operation with the American Bankers Association is effecting a large measure of substantial relief. Flour on credit is now being supplied by the Grain Corporation, and its transportation has been furnished partially by the British and neutral governments under transport arrangements co-operated in by American Relief Administration officials in Europe.

A large active campaign in combat of typhus has been organized in Poland under the Relief Administration, comprised of volunteers from the American Army Medical Corps, and with supplies furnished through the American Relief Administration by various Allied armies.

All together, with the sales of flour on credit by the Grain Corpo-

ration and the continuation of these various charitable activities, which are themselves furnishing over \$7,000,000 per month in relief, the countries under duress should weather through until next harvest, when the last echo of famine should have died away.

TOTAL FOOD SUPPLIED DURING THE WAR

Allied credits were practically exhausted when we entered the war. Even at our normal rate of export, the Allies would have starved. It can be said, therefore, that, in addition to the overpowering weight that our Army and Navy threw into the military scale, the organization and expenditure of our food resources contributed no less to winning the war.

The following tables show the total food supplies furnished from the United States:

GRAND TOTAL OF ALL FOOD AND RELIEF DELIVERED DURING THE WORLD WAR AND RECONSTRUCTION PERIOD—BY COMMODITIES AND MAJOR OPERATIONS*

(Metric Tons)

Commodity	C.R.B.	United States Food Administration	Armistice Period	Reconstruction Period	Total
Flour	411,421.0	4,904,600.4	1,253,568.0	767,191.5	7,336,780.9
Grain	3,310,898.0	10,083,228.8	983,979.6	389,007.1	14,767,113.5
Rice	317,455.0	143,514.0	99,039.1	49,811.0	609,819.1
Beans and peas..	171,434.0	108,860.4	104,833.6	45,796.5	430,924.5
Corn grits .....	.....	.....	.....	103,301.1	103,301.1
Pork products...	379,926.0	1,363,799.6	266,979.6	29,594.8	2,040,300.0
Milk	80,921.0	451,346.9	50,653.7	103,612.1	686,533.7
Cocoa	12,870.0	.....	511.5	10,762.6	24,144.1
Sugar	51,024.0	1,947,936.8	43,276.7	44,295.7	2,086,533.2
Miscellaneous food	173,272.0	922,736.5	873,062.2	4,076.0	1,973,146.7
Forage .....	.....	3,177,242.8	.....	3,134.3	3,180,377.1
Soap	39,129.0	.....	1,110.5	2,276.6	42,516.1
Medical supplies .....	.....	.....	4,377.5	8,283.9	12,661.4
Clothing and miscellaneous .	39,709.0	.....	497,055.7	10,390.9	547,155.6
Grand total .	4,988,059.0	23,103,266.2	4,178,447.7	1,571,534.1	33,841,307.0

* Surface and Bland, *American Food in the World War and Reconstruction Period*, p. 9, Table 2.

GRAND TOTAL OF ALL FOOD AND RELIEF DELIVERED DURING THE WORLD WAR
AND RECONSTRUCTION PERIOD—BY COUNTRIES
OF DESTINATION, 1914 TO 1924*

Country	Total Metric Tons	Total Value
Armenia	135,764.1	\$ 28,795,426.49
Austria	822,200.1	145,481,222.30
Belgium	4,198,856.3	697,140,348.91
Bulgaria	22,862.4	4,856,647.53
Czechoslovakia	545,134.6	115,438,351.98
Danzig Free State	573.2	127,700.69
Denmark	19,912.0	2,147,059.30
Estonia	67,358.5	21,017,263.56
Finland	188,520.9	30,282,047.90
France	8,425,699.7	1,289,488,622.47
Germany	1,272,934.1	294,373,692.75
Greece	20,374.0	1,211,949.95
Hungary	21,393.5	4,607,139.37
Italy	7,479,780.7	799,608,264.01
Jugoslavia	127,359.0	45,898,651.43
Latvia	26,366.6	7,550,021.69
Lithuania	12,877.7	5,980,781.39
Netherlands	25,027.4	4,219,498.41
Poland	751,135.6	200,864,857.73
Roumania	229,202.8	53,637,311.31
Russia	768,159.9	78,305,318.49
Turkey	20,278.3	4,369,404.30
United Kingdom	8,652,668.6	1,386,102,780.05
Sundry Accounts	56,529.2	23,654,740.07
Grand total	33,890,969.2	\$5,245,159,102.08
Less duplication	49,662.2	11,130,893.52
Grand total net.....	33,841,307.0	\$5,234,028,208.56

* Surface and Bland, *American Food in the World War and Reconstruction Period*, p. 9, Table 3.

CONCLUSION

I should like to pay tribute to the two hundred immediate colleagues in heads of divisions, as state administrators and in other important positions, for their high abilities and unfailing devotion to our country in this most trying period. Their counsel and co-operation made one of the most difficult administrative tasks possible of successful consummation. They were all volunteers to their country at great personal sacrifice. Some thousands unable to wholly volunteer also served with equal devotion to their country. Beyond this

immediate association were the millions of our farmers and our women, without whose patriotic devotion and self-sacrifice the winning of the war would have been impossible. It has indeed been a great honor to have held the office of co-ordination and direction of this branch of great national effort. A proper appreciation of the service of all these individuals could not be adequately expressed even in a full report of the Administration.

I wish to express my personal gratitude for the support received from the officials of the twenty governments with whom the Food Administration organization has had to deal. Without this unity of support and co-ordination of economic effort, the maintenance of the Allies during the war and the subsequent stability in Europe pending the peace negotiations would have been impossible, and the suffering and loss of human life would have been of incalculable measure.

HERBERT HOOVER

Report on the Food Administration
By W. C. Mullendore

I. CONDITIONS AFFECTING THE FOOD SITUATION IN THE UNITED STATES, 1917

The two general phases of the food problem are supply and price. As soon as the commercial disturbance and the forces of demand set in motion by the war began to exert their influence, the rate of rise of all commodities directly affected, and of many others indirectly affected, rapidly increased.

Some of the factors creating these forces of demand were peculiar to this war, in addition to which the familiar ones accompanying all wars operated with unprecedented severity and rapidity. The destruction on the battlefield, the increased consumption of the fighters at the front and of the workers supporting the fighters at home, the curtailed production of any commodities which were displaced by war necessities, the decline of agricultural production in particular, the restriction and destruction of shipping and cargoes and the consequent closing of distant markets which were normally available, and similar concurrent forces not only were acting from the beginning but their intensity increased with the war's prolongation.

Seventy million men in Europe were called from productive labor and devoted to fighting and to the production of implements of war. The women were unable fully to maintain the harvests, and there was a great diversion of animals and transport to war. The land was no longer receiving its regular supply of fertilizer. The decrease of the production of fodder grains, in order to increase the production of bread grains, and the demand for protein and fat supplies had depleted the capital of animals in Europe. This again reacted upon the productivity of the land. Beyond this, the submarine campaign of Germany was menacing the supply of Allies and neutrals alike, and shiploads of valuable foodstuffs were being destroyed daily. The Allies were separated by belligerent lines from their normal markets of Russia, Bulgaria, and Rumania, and by the submarine from the more distant markets of India and Australia and to a large extent from the Argentine. Argentina had had a crop failure in 1916. There had been a large failure of the winter-wheat harvest in France and England in 1916.

These conditions piled one increasing demand after another upon the North American markets. The following table, showing the comparison between our average export of the three prewar years with that of the fiscal years 1917-18 and 1918-19 is impressive upon this point:

TABLE I
UNITED STATES PREWAR AND WAR-TIME EXPORTS OF CERTAIN FOODS
(Short Tons)

Commodity	Average of Three Prewar Years (Tons)	1917-18 (Tons)	1918-19 (Tons)
Wheat and rye.....	3,720,398	4,590,928	10,382,094
Other cereals	1,607,296	4,584,633	3,221,624
Pork	498,115	868,551	1,472,154
Beef	93,187	350,983	551,133
Vegetable oils	165,116	75,732	148,910
Dairy products	13,019	306,940	439,294
Sugar*	511,884	1,279,351	1,893,914
Fruits and vegetables.....	350,040	269,796	558,255
Totals	6,959,055	12,326,914	18,667,378

* Including exports to Europe and Cuba. Cuba is included because the drain of sugar therefrom was a direct reduction of American supplies.

In the early months of 1917, before our declaration of war, there was widespread and increasing protest among the people of the United States as to "the high cost of living." The United States had always produced a surplus of food commodities, and at least the present generation had never experienced a general food shortage. It was therefore the natural popular conclusion that the high prices preceding our entrance into the war were the result of deliberate extortion by persons or groups of persons handling food commodities, and the popular insistence was very strong for governmental action which would prevent the suspected wrongdoing and punish those responsible for it.

Upon the declaration of war by the United States, to the menace of high prices there was added the menace of a world shortage of foodstuffs. The question of supplying the Allied nations with food was suddenly changed from one which was largely commercial to one demanded as a measure of self-defense—a measure of the high-

est obligation to ourselves as well as to our associates in the war. Their cause became our cause, and one of the most immediate and most valuable contributions to their strength in the power of the United States was an addition to their supply of food. Our store of food, which had before been our own, which we might sell or not as our interests and judgment dictated, by our declaration of war became a part of the common store which, as participants in the war against the common enemy, we were both by duty and by self-interest compelled to share with the Allies. In effect we pooled our supplies with theirs and, in so far as necessary to maintain their strength, we were to retain no more than our proper share of the total.

Nor was this the only change in our situation by reason of our entrance into the war. With our assumption of the role of a belligerent it was necessary to realign our productive industry, eliminating here and adding there with a view to meeting war demands. The dislocation incident to this preparation for, and participation in, war not only decreased the production but increased the consumption of food. Consumption was greatly increased by the addition of thousands to the industries requiring hard manual labor; men taken from office and desk to the Army ate almost twice as much as before; and the very nature of Army operations entailed great food waste. The great increase of weight in the American Expeditionary Forces testifies to the increased consumption of food as well as to the healthfulness of Army exercise. Production of food was adversely affected by the drawing of labor from the farm both to the Army and to more remunerative war industries. Farm implements increased in price. Fertilizer was scarce and it was difficult to secure shipping for its importation.

We were confronted with an unstable and almost demoralized market as to many food commodities resulting from the concentration of foreign buying by the Allies and by neutrals, buying which was principally actuated by the determination to obtain the goods and in which little regard was paid to price. In addition to this was the natural effect of the knowledge that war would stimulate our domestic demands and that we were to play an increasing part in feeding the Allies. It was inevitable under such conditions that our distributing trades should be filled with speculation and that prices would fluctuate very rapidly. And it should be pointed out that a great part of this speculation was not deliberate and vicious; it was rather the result of a desire on the part of the dealer in foodstuffs

to safeguard himself against an uncertain future. Under the conditions it seemed the part of prudence to buy a little more than the ordinary amount and to contract for future deliveries beyond the customary time. A rise in prices seemed inevitable, and the dealer preferred to pay a high price now rather than risk an exorbitant price later. The cumulative effect of all this was, of course, to add a fictitious demand to the normal demand, amounting to speculation; which was none the less harmful because of its natural development.

A control which would, so far as possible, neutralize these abnormal forces loosed in our economic life was clearly one of the first measures required of us in the conduct of the war. Scarcity and high prices were the two main branches of the problem. As stated by Mr. Hoover: "By our entry into the war we arrived at two issues: *First*, the issue we must have partially fronted in any event, the control of our food so as to ameliorate prices, for unless we can do so we must meet a rise in wages with all its vicious circle of social disruption at a time when maximum efficiency is vital to our safety. *Second*, that we may also meet the increased demands of our Allies that they may remain constant in the war." In other words the control must on the one hand guard the supply for ourselves and the Allies, and on the other protect our people against the prices which would inevitably go beyond the limits of endurance without some firm and well-conceived check.

II. FORMULATION OF PROGRAM FOR FOOD ADMINISTRATION

Shortly after the declaration of war the government cabled to Mr. Herbert C. Hoover, Chairman of the Commission for Relief in Belgium, requesting him to return to the United States in order that the government might have the advantage of his experience and expert knowledge in dealing with the war-time food problems. The President also asked Congress for broad powers of control over the production, distribution, and consumption of food in the country.

After Mr. Hoover had arrived in this country and had reviewed the situation, the President on May 19, 1917, made an announcement of the program of food control which it was proposed to establish. At the same time Mr. Hoover also made a statement of his conception of the task of food control.

According to the statements of the President and of Mr. Hoover the program which was to be adopted for meeting the food situation was briefly as follows: In order to meet the shortage, every encouragement and direction possible was to be given to increased production, through the assistance of the producer by the Department of Agriculture and the protection of his interests by the Food Administration. In addition to this method of increasing our surplus, the conservation of food already in existence was to be approached through the elimination of wasteful practices and unnecessary consumption, and through enlisting the women of the country in the service of the National Food Administration and securing their pledge to follow so far as possible the direction of the organization which it was proposed to establish, not only to prevent waste but also to substitute the more plentiful for the less plentiful and more concentrated foods. Protection of the people against exorbitant prices was to be accomplished through the regulation of the distributing trades by enforcing the principle of "reasonable profits," and the elimination of speculation, and through stabilization of prices by direct governmental control of the more staple commodities and a general regulation and control over the distribution of all food-stuffs. In this control the existing machinery of the food trades was to be utilized without unnecessary reorganization or disturbance. The problems of conservation of existing supplies and regulation

of distribution practices and profits were to be entrusted to a separate agency known as a Food Administration, which should be vested with broad powers of control over the food supply of the country.

The five cardinal principles of food administration were stated by Mr. Hoover in his statement of May 19 to be:

- First: That the food problem is one of wise administration and not expressed by the words "dictator" or "controller" but "food administrator."
- Second: That this administration can be largely carried out through the co-ordination and regulation of the existing legitimate distributive agencies of the producers, distributors, and consumers.
- Third: The organization of the community for voluntary conservation of foodstuffs.
- Fourth: That all important positions, so far as may be, shall be filled with volunteers.
- Fifth: The independent responsibility of the food administration directly under the President, with the co-operation of the great and admirable organization of the Department of Agriculture, the Department of Commerce, the Federal Trade Commission, and the railway executives.

Mr. Hoover many times emphasized his faith in and his reliance upon the voluntary service and co-operation of the people in the solution of the food problems. In his statement before the Senate Committee on Agriculture a month later, June 19, he again said:

The legislation proposed does not confer food dictatorship, nor does the administration devised contemplate anything of that nature. The food administrations of Europe and the powers that they possess are of the nature of dictatorship, but happily ours is not as their plight, for we have reached no point of desperation in our food supply. The character of the administration proposed is based on an entirely different conception from that of Europe. The tendency there has been for the Government to take over the functions of the middleman, first with one commodity and then another, until, in the extreme case, of Germany, practically all food commodities are taken directly by the Government from the producer and allotted on an iron-clad system of ticket distribution to the consumer. The whole of the great distributing agencies, and the financial system which revolved around them have been suspended for the war or destroyed for good. That is the system which is dictatorship and which, so far as I can see, this country need never approach. In distinction from this, our conception of the problem in the United States is that we should assemble the voluntary effort of the people, of the men who represent the great trades: that we should in effect, undertake with their co-operation the regulation of the distributing machinery of the country in such a manner that we may restore its function as nearly as may be to a pre-war basis, and thus eliminate so far as may be the evils and failures which have sprung up. And at the same time we propose to mobilize the

spirit of self-denial and self-sacrifice in this country in order that we may reduce our national waste and our national expenditure.

It was therefore evident from the first that the proposed governmental organization for handling our war-emergency food problems was not one which should arbitrarily determine and promulgate its orders but rather one which would lead and direct the people and the trades of the nation in their voluntary efforts to co-operate with the government in dealing with the exigencies. This was the guiding theme of food administration in the United States.

The consideration of the legislation desired was begun before the House Committee on Agriculture about April 21; but the task of framing such a comprehensive measure was extremely complex and difficult, and it was not until June 11, 1917, that it was reported from the Committee to the House by Hon. Asbury F. Lever, Chairman of the Agricultural Committee of the House. A week later, June 18, 1917, it was taken up by the House and the Senate concurrently. In the House it was taken up under an agreement that it should remain the order of business until passed, and it passed that branch of Congress on June 23, 1917. In the Senate the measure met with spirited and even bitter opposition, and it soon became evident that it would not become a law by the first of July.

WORK OF VOLUNTEER ORGANIZATION PRECEDING PASSAGE OF FOOD CONTROL ACT

The institution of a control over food prices and trade practices through the regulation of the distributing and manufacturing trades of the country and like measures could proceed only after the passage of the legislation giving the President the necessary authority. However, the conservation of food under the theory followed in the United States depended, as has been said, not upon law but upon the voluntary action of the people and could be proceeded with in the absence of an enabling law. Recognizing the urgency of the situation, the President on June 12, 1917, addressed the following letter to Mr. Hoover:

MY DEAR MR. HOOVER: It seems to me that the inauguration of that portion of the plan for food administration which contemplates a national mobilization of the great voluntary forces of the country which are ready to work toward saving food and eliminating waste admits of no further delay.

The approaching harvesting, the immediate necessity for wise use and saving, not only in food but in all other expenditures, the many undirected

and overlapping efforts being made toward this end; all press for national direction and inspiration. While it would in many ways be desirable to wait complete legislation establishing the food administration, it appears to me that so far as voluntary effort can be assembled, we should not wait any longer, and therefore I would be very glad if you would proceed in those directions at once.

The women of the Nation are already earnestly seeking to do their part in this our greatest struggle for the maintenance of our national ideals, and in no direction can they so greatly assist as by enlisting in the service of the Food Administration and cheerfully accepting its direction and advice. By so doing, they will increase the surplus of food available for our own Army and for export to the Allies. To provide adequate supplies for the coming year is of absolutely vital importance to the conduct of the war, and without a very conscientious elimination of waste and very strict economy in our food consumption, we can not hope to fulfill this primary duty.

I trust, therefore, that the women of the country will not only respond to your appeal and accept the pledge to the Food Administration which you are proposing, but that all men also who are engaged in the personal distribution of foods will co-operate with the same earnestness and in the same spirit. I give you full authority to undertake any steps necessary for the proper organization and stimulation of their efforts.

Cordially and sincerely, yours,

WOODROW WILSON

In compliance with this direction, Mr. Hoover proceeded immediately (almost two months before the passage of the Food Control law) with the organization of the conservation work. The measures taken in this connection are hereinafter considered under the general heading of "Conservation."

It was equally important that the food trades of the country should be informed of the proposed measures of control and the program of the Administration with respect to them. With a law pending before Congress which vitally affected their industries, these business men could not proceed with their plans with any degree of certainty; and the confusion resulting from this uncertainty tended to aggravate the already disturbed conditions. The President having announced his intention of placing this control in the hands of Mr. Hoover, insistent demands were made upon the future Food Administrator for an outline of his plans. Obviously, without a knowledge of the extent or nature of the powers which would be made available to him by the Congress, it was impossible for Mr. Hoover to answer these demands satisfactorily with definite information. He did, however, meet the various delegations of trade representatives sent to Washington and discuss with them tentative

plans. He further selected volunteer specialists to study many of the various special problems and to gather information which would be ready for use immediately upon the creation of a Food Administration with definite powers.

With the wheat millers and grain trades, where the necessity for action was particularly urgent because of the beginning of the movement of the new wheat crop, a definite program was mapped out through conferences which began as early as May. Other important conferences were held with canners, wholesale grocers and jobbers, cold-storage warehousemen, and dealers in perishable foods. Some of these conferences were called by the government in connection with the plans for securing supplies for the Army and Navy.

While the trades were greatly concerned over the unstable conditions created by the delay in the passage of the law, the paramount idea pervading every conference was the desire of the representatives of the trade to place their industry in a position to work in harmony and the utmost possible co-operation with the plans of the government. The business men of the country were aware of their responsibility in the mobilization of the country for war, and there was everywhere manifest a hearty response to the call for patriotic service. Because of this prevailing spirit, many of the most helpful suggestions for the control program came from the representatives of the industries to be controlled.

PASSAGE OF THE LAW AND CREATION OF THE FOOD ADMINISTRATION

After five weeks of continuous debate in the Senate the Food Control Bill was passed by that branch of Congress on July 21, 1917. Many issues were discussed in connection with the bill, some of which were quite unrelated to the necessity for and the problems of food legislation. The attempt to include steel, cotton, and many other commodities, as well as the raising of the prohibition issue, were among the causes of the prolongation of the debate. As it passed the Senate the measure was quite different from the one which had passed the House. Important amendments made by the Senate involved the inclusion of fuel and fertilizer control, the provision that the law should be administered by a board of three commissioners, and a limitation of the licensing power. The bill went to conference on July 25, 1917. After a prolonged debate between the conferees the bill was reported out of conference and returned to the House on August 3, 1917, where it was agreed to by unani-

mous vote on August 3, 1917. Most of the changes made in the bill by the Senate, with the exception of the addition of fuel and fertilizer control, were eliminated in the conference. The conference report was taken up in the Senate on August 4 and was agreed to on August 8 by a vote of 66 to 7. The bill became a law (now commonly called the Lever Food and Fuel Control Act) upon approval by the President on August 10, 1917.

On the latter date the President issued an Executive Order which read in part as follows:

Under and by virtue of the power conferred upon me by the provisions of said Act and for the purpose of carrying the same into effect, I, Woodrow Wilson, President of the United States, hereby order and direct as follows:

There is hereby established a governmental organization to be known as and called United States Food Administration.

Said organization shall consist of an officer designated as United States Food Administrator, and such subordinate assistants and employees as may be selected by him for service in the City of Washington, D.C., and elsewhere, with the consent and approval of the President and under such rules and regulations as may from time to time be prescribed.

Herbert Hoover is hereby appointed United States Food Administrator, such appointment to take effect from this date.

Said United States Food Administrator shall hold office during the pleasure of the President.

Said United States Food Administrator shall supervise, direct, and carry into effect the provisions of said act, and the powers and authority therein given to the President, so far as the same apply to foods, feeds, and their derivative products and to any and all practices, procedure, and regulations authorized or required under the provisions of said act, including the issuance, regulation, and revocation in the name of said Food Administrator, of licenses under said act; and in this behalf he shall do and perform such acts and things as may be authorized or required of him from time to time by direction of the President and under such rules and regulations as may be prescribed by the President from time to time.

And, whereas the President is further authorized in carrying out the purposes of said act "to utilize any department or agency of the Government and to co-ordinate their activities so as to avoid preventable loss or duplication of effort or funds," all departments and established agencies of the Government are hereby directed to co-operate with the United States Food Administrator in the performance of his duties as hereinbefore set forth and to give said Administrator such support and assistance as may be requisite or expedient to enable him to perform his said duties and avoid duplication of effort and expenditure of funds. . . .

III. PROBLEMS, POWERS, AND ORGANIZATION OF THE FOOD ADMINISTRATION

It will be helpful here to outline the scope of the field which the new organization thus created was expected to occupy and to enumerate the problems with which it was required to deal, then to examine the powers or instruments with which it was provided, and finally to present the plan of organization adopted in the division of its activities.

PROBLEMS

The Lever Food Control Act is entitled:

An Act to provide further for the national security and defense by encouraging the production, conserving the supply, and controlling the distribution of food products and fuel.

The first section of the Act states that "by reason of the existence of a state of war, it is essential to the national security and defense, for the successful prosecution of the war, and for the support and maintenance of the Army and Navy" to do the following things, and this is the statement of the purpose for which Congress enacted the law:

to assure an adequate supply and equitable distribution, and to facilitate the movement, of foods, feeds, fuel including fuel oil and natural gas, and fertilizer and fertilizer ingredients, tools, utensils, implements, machinery and equipment required for the actual production of foods, feeds, and fuel, hereafter in this Act called necessities; to prevent, locally or generally, scarcity, monopolization, hoarding, injurious speculation, manipulations, and private controls, affecting such supply, distribution, and movement; and to establish and maintain governmental control of such necessities during the war.

The problems in connection with our domestic food supply with which the Food Administration was expected to cope were well stated by Representative Anderson in the House of Representatives, during the debate on the Food Control Bill, as follows:

The situation with respect to the food supply from the angle of our own people is dangerous in three particulars.

First, the demands of neutrals and belligerents upon our own none too large supply of food, if unchecked, is likely to result in an actual scarcity in this country.

Second, the competition of allied and neutral countries with our own Government and civilian population, particularly upon forward contracts, is likely to result in a price level which will mean actual deprivation on the part of the poorer people of the country of sufficient food to prevent starvation.

Third, the desire of both neutral and belligerent nations for a certain and continuous supply has resulted in excessive forward contracts; that is, contracts for future delivery. The prices fixed in these contracts, which must of necessity be high in view of the existing uncertainty in the food situation, will set the price for all at a level which can not be exacted from the domestic consumer and maintain tranquillity. And it may be suggested that the maintenance of tranquillity is one of the first requisites in the successful prosecution of a war.

Another phenomenon of the abnormal situation with which we are now confronted is that legitimate and patriotic businesses have been forced by it into practices which are in themselves uneconomical and into the establishment of a price level which, in the aggregate, combined with the economic pressure caused by the excessive demand and insufficient supply, imposes burdens which no people can or will bear without social disturbances and phenomena which I do not care either to contemplate or describe.

Again, the economic forces and instrumentalities of commerce, which ordinarily in normal times control the distribution of food products and serve to maintain a fairly constant level of prices, have so broken down under the pressure of the conditions which I have described that they no longer serve their normal functions.

The condition which I have just outlined is one which readily lends itself to the manipulation of the speculator, to food monopolization and the evils which attend it, to extortion, to waste, and to every uneconomical and evil practice which imagination can conjure up. It is inconceivable to me that any man should take the position, either that this condition should not be remedied or that the forces which so far have proven utterly incapable of controlling it will by some miracle or alchemy of nature be able to control it in the future, when the conditions which have rendered their control by natural forces impossible in the past will have increased tenfold in difficulty.

To sum up, the food situation is fast getting out of control—running away, as it were. There is immediate and imperative need for some intervention which will reduce this abnormal condition so far as our own people are concerned, to something approaching the normal.

In his statement before the Senate Committee on Agriculture on June 19, 1917, Mr. Hoover made the following enumeration of the tasks of food administration:

Food administration, as we see it, falls into four great branches: The *first*, the control of our exports; *second*, the instrumentalities which we set up in an endeavor to regulate trade to the exclusion of both legitimate and illegitimate speculation; *third*, the mobilization of the women and men of the country engaged in personal distribution as actual members of the food administration to carry out, so far as their circumstances permit, the advice and directions which we give to them toward national conservation; *fourth*,

the erection in every State in the Union of some form of food administration and the decentralization of our functions so far as possible into the State administrations, we to support them in interstate matters and to advise and cooperate with them.

Again, on the creation of the Food Administration, the Food Administrator made a statement of its purposes and principles of control, which read in part as follows:

The hopes of the Food Administration are threefold. *First*, to so guide the trade in the fundamental food commodities as to eliminate vicious speculation, extortion, and wasteful practices and to stabilize prices in the essential staples; *second*, to guard our exports so that against the world's shortage we retain sufficient supplies for our own people and to cooperate with the allies to prevent inflation of prices; and, *third*, that we stimulate in every manner within our power the saving of our food in order that we may increase exports to our allies to a point which will enable them to properly provision their armies and to feed their peoples during the coming winter.

The Food Administration is called into being to stabilize and not to disturb conditions, and to defend honest enterprise against illegitimate competition.

It has been devised to correct the abnormalities and abuses that have crept into trade by reason of the world disturbance and to restore business as far as may be to a reasonable basis. The business men of this country, I am convinced, as a result of many hundreds of conferences with representatives of the great forces of food supply, realize their own patriotic obligation and the solemnity of the situation, and will fairly and generously cooperate in meeting the national emergency. I do not believe that drastic force need be applied to maintain economic distribution and sane use of supplies by the great majority of American people, and I have learned a deep and abiding faith in the intelligence of the average American business man whose aid we anticipate and depend on to remedy the evils developed by the war, which he admits and deplors as deeply as ourselves. But if there be those who expect to exploit this hour of sacrifice; if there are men or organizations scheming to increase the trials of this country, we shall not hesitate to apply to the full the drastic, coercive powers that Congress has conferred upon us in this instrument.

In enforcing the measures of the act it is not our intention to proceed with a host of punitive measures, but rather by coordination with the various trades to effect such constructive regulations as will render gambling, extortion, and other wasteful practices impossible, and will stabilize prices. Indulgence in profiteering in this hour of national danger is far from the wish or the will of the vast majority of our business people, and I am convinced that while we must have ready in reserve the corrective powers given us, we shall by these powers free the great majority from necessity to compete with operators whose sole effort is to inflate prices and bring into disrepute the majority of honest traders. We propose to proceed as rapidly as possible with constructive regulation in various commodities and to announce

each program as quickly as it is properly formulated. We hope within the next few days to announce the method of wheat and flour control.

In summing up these statements we may say that the two general problems before the Food Administration were: (a) the assurance of an adequate supply of foodstuffs for the people of the United States and for the Allies; (b) the protection of our people from prices which threatened in the unusual situation to disrupt the entire social and commercial fabric.

The solution of these general problems required: *first*, not only the setting up of a national organization, but also the creation of an organization within each of the states which should be prepared to function locally from a national viewpoint; *second*, the direction of conservation of existing foodstuffs and the elimination of waste in every possible way; *third*, control over the exports of foodstuffs, involving a study of the needs of neutrals; *fourth*, the co-ordination and control of purchases by our government, the Allied governments, and other large purchasers; *fifth*, the regulation of and control over distribution with a view to preventing waste as well as speculation and exorbitant prices.

Since the basis of the Food Administration program was voluntary service and co-operation, the education of the entire people in the conditions and problems calling for their service as well as the most pressing needs was fundamental to the entire program.

POWERS OF THE FOOD ADMINISTRATION

The powers of the Food Administration were derived only from the Food Control Act, but certain powers in that act were unprecedented and in general its language was broad and somewhat elastic. It was based on the war power and was not confined to interstate commerce. To the Food Administration was delegated only the control of food, feeds, and derivative products and a few collateral commodities. Outside of the Act, the Food Administration exercised some control of the export and import of foods through the War Trade Board and over the purchase of foods by the Allies and the government through the co-operation of these powers.

It is remarkable that very little control was based directly on the Penal Provisions of the Act. A penalty was provided for hoarding (except by producers), for the willful destruction of food, and for conspiracies and agreements to limit the production, manufacture, or distribution of food. In only two or three cases were any

persons arrested for violation of the Food Control Act during the war. The license control, hereafter described, rested upon a penalty provision; but it was never necessary to invoke it.

Practically the control of the Food Administration, apart from voluntary co-operation, rested on three powers—that to enter into any voluntary agreement, that to license and prescribe regulations, and that to buy and sell foodstuffs. It was only through voluntary co-operation of the people and the trades that these three powers were made effective.

Section 2 of the Act provided: "That in carrying out the purposes of this Act the President is authorized to enter into any voluntary arrangements or agreements." This authority was held by the Attorney General to authorize the Food Administrator, acting by direction of the President, to make uniform agreements with producers, manufacturers, or distributors which, if made only between the members of these groups themselves, would have constituted a combination or conspiracy in violation of the anti-trust laws. The opinion of the Attorney General relative thereto is in part as follows:

I am of the opinion that any agreement made with producers or traders *by the Government itself* (through the Food Administrator acting by direction of the President), under authority of Section 2 of the Act, and having a reasonable relation to the objects enumerated in Section 1, for example, to assure an adequate supply and equitable distribution of necessities during the war, would not fall within the operation of the Sherman Anti-Trust Law, even though the effect of the agreement or agreements were to fix a uniform price or to accomplish a pooling of output. This, because *Governmental action* with respect to price or methods of distribution is obviously not within the mischief at which the Sherman Law was aimed. On the contrary, when natural laws of trade break down, governmental action in this regard may become essential to prevent the private control of markets. For, when natural laws of trade can no longer be depended upon to regulate markets, the only choice is between artificial control imposed by public agencies. In these circumstances, therefore, such governmental action, so far from running counter to the purpose of the Sherman Law, is directly in line with it.

I am equally clear that the President has no power under the Food Control Act to authorize price fixing or pooling agreements between the producers or traders themselves.

Under this power it became possible, once the practically unanimous consent of a trade had been obtained, to reach results which the Food Control Act itself did not make possible. Wherever a given step in distribution was not made up of too many elements, it was possible to obtain a unanimous agreement as to price to be paid or

received for a given commodity, and substantially to fix the price of that commodity. A control over distribution and equitable rationing was also possible. Practically, the agreements had the effect of conferring additional powers on the Food Administration; but they were not an easy instrument to use. Even in a small trade, the opposition of one large factor in the trade might destroy the entire agreement. In a trade such as that in corn, which never passes through any restricted class of buyers, its use was impossible. Direct agreements with farmers were practically impossible because of lack of organization among them of such a character as to enforce contracts, except perhaps the fruit industries of California, which are concentrated in a few hands. In many cases, however, as in that of cottonseed and its products, hogs, beans, milk, sugar, etc., informal agreements with the best-recognized representatives of the producers were arrived at which furnished the background for policies adopted.

The control of exports was of the greatest importance not only in the ability to direct the destination of the surplus for export to the concrete purposes of the war but also as it permitted (in commodities where the export surplus was the determining factor in price) arrangements with foreign buyers as to the prices they must pay in fairness to the American producer and consumer. Furthermore, the control of exports served to minimize the opportunities of speculation very greatly, as this sort of activity cannot thrive upon the uncertainty of a controlled flow of commodities outward or inward. Upon this control was based the co-ordination of purchases among the Army, the Navy, and foreign buyers.

The power to buy and sell commodities was most important in the stabilization of the wheat price, and at a later date in that of sugar and coarse grains. Section 10 of the Act authorized the requisition of foods and feeds for any public use connected with the common defense, and under this power the Attorney General held, in an opinion dated August 31, 1918, that the lesser power to buy and sell foods and feeds for this purpose was included. "A public use connected with a common defense" was held to include purchase and sale in order to co-ordinate the flow thereof to seaboard over our railways and to assure a sufficient amount thereof to the civil population of our own country, as well as the Allies. The power to make these purchases made it possible to moderate speculative rise and fall in price considerably.

The primary basis of commodity control, however, was that conferred by Section 5, which authorized the President, by proclamation, to license the importation, manufacture, storage, and distribution of any foodstuffs and provided a penalty for any person conducting his business without a license. With reference to persons who were licensed, the President was authorized to issue regulations, prescribing just, reasonable, nondiscriminatory, and fair storage charges, commissions, profits, and practices. Section 4 of the Act prohibited many acts for which, however, no penalties were provided because of the indefinite nature of the prohibition. Practically, the President was authorized under the license control to make definite and specific the provisions against wasteful, unjust, and unreasonable charges and practices.

The license control, however, contained two important exceptions: one relating to producers, and the other relating to retailers whose gross sales did not exceed \$100,000 per annum. The indirect method by which retailers were controlled is described later, but it is sufficient to say that from a legal standpoint this control over retailers was eminently unsatisfactory. The Food Control Act did not confer the power to issue any proclamation or regulation making it criminal to disregard a fixed price. The exception of the farmer from the license control made it impossible to regulate his profits and thus perhaps determine a basic price for the raw material. In general, the Food Administration was obliged to accept the basic price created by the law of supply and demand and to confine itself to a regulation of the margins and profits of manufacturers and distributors. The regulations issued, therefore, fell practically into four classes: those limiting margins and profits; those eliminating unnecessary functions in distribution; those preventing waste; and those securing equitable distribution chiefly by the prevention of hoarding.

PRINCIPLES AND PROBLEMS OF LICENSE CONTROL

The imposition upon licensees of rules for the conduct of their business, backed with the severe power of enforcement by taking away the offender's license, demanded the exercise of every possible care. The one penalty of destroying a business by withdrawal of license proved too drastic for the great majority of transgressions. In the first place, the withdrawals would have been disconcerting and

demoralizing to the trades affected if they had been imposed without warning or consultation with representatives of those trades. As the Food Administrator emphasized a number of times, however, one of his cardinal principles of food administration was co-operation with the trades in the solution of the problems which so vitally affected them, and it was not part of his purpose to injure or limit them in the performance of their legitimate functions. The uniform practice of the Food Administrator therefore was to promulgate rules only after full and free conferences with the trade representatives, at which conferences they were notified just what rules were being considered and their suggestions and criticisms were asked. In many cases it was found that these trade representatives were willing to accept more rigid control than the Food Administration found to be necessary. In a very real sense, therefore, the rules and regulations that the licensees were required to observe in the conduct of their business were rules which in many cases the trades patriotically adopted. The conferences served the triple purpose of giving notice to the trade, of obtaining their advice, and of unifying them in a spirit of co-operation with the efforts of the Food Administration.

The rules were formulated with full recognition of the fact that we were regulating trades throughout a country of vast expanse and diversified conditions. The conditions surrounding these trades differed in the various localities and sections of the country by reason of their transportation facilities, distance from raw material, density of population, etc. Rules and regulations applicable to all licensees were therefore of necessity broad rather than detailed directions as to trade practices and usages. Detailed rules which worked hardship on particular trades and localities would have led to confusion and discouragement—the exact opposite of the results at which the Food Administration was aiming.

The magnitude and character of the task involved made it impossible to institute at the very beginning the system and measures of control in detail. Not everything could be done at once. This difficulty was expressed by Mr. Hoover before the Senate Agricultural Committee on June 19, 1917, in the following words:

It is impossible in constructing routes and bridges through this forest of speculation and difficulty to describe in advance the route and detail of these roads and bridges which we must push forward from day to day as we proceed into the unknown.

Again, in his address before the United States Chamber of Commerce at Atlantic City on September 19, 1917, he said:

We shall find as we go on with the war and its increasing economic disruption that first one commodity after another will need to be taken into control. We will, however, profit by experience if we lay down no hard and fast rules, but if we deal with every situation on its merits. So long as demand and supply have free play in a commodity we had best leave it alone. Our repairs to the break in normal economic control in other commodities must be designed to repair the break, not with a view to setting up new economic systems or theories.

The field was new; almost no precedents existed, and such as did exist were valueless. The scope of the war disorganized the life of the whole world, overthrew all precedents, shattered the fundamental relations; and in nothing was its influence upon the normal more disturbing than in the matter of food. Food was war material. The demand for food was concentrated upon the United States and the supplying of that demand admitted of no delay. In that exigency there was no time for the Food Administration to devise and carefully test plans dictated by the soundest and best of theories which promised excellent results some time in the future. The crisis of the situation was upon us, the leak in the dike had been sprung, and measures were demanded which would produce the result of stopping that leak immediately before it caused a flood. From the beginning the stocks of manufacturers and dealers were limited, so that an even distribution might prevent shortage and high prices. Contracts for future delivery were limited again in order to secure an equal distribution and decrease the possibility of speculative profits from the rising market. Wasteful and expensive practices were forbidden, but the greatest difficulty consisted in the limitation of profits and the securing of a direct distribution. Conditions in nearly every food industry varied widely, and rules had to be worked out of a widely different character for each trade.

The law of supply and demand was practically inoperative, or would have resulted in such rapidly rising prices as to interfere seriously with the progress of the war. While the law of supply and demand is probably the best regulator of price and supply that could be devised, yet under war conditions it either did not operate at all or operated so slowly that damage was done.

In many industries the law of supply and demand was so ineffective that the control of profits alone under the license system

would have been of little avail except for the stabilization effected through agreements or through control of export purchase. In many cases the actual regulation of profits would have been impossible if wide fluctuations had not been controlled by these other methods and the price of the basic commodities stabilized. It is essential to realize, therefore, that the results of Food Administration control were based on a combination of circumstances which could result only from war conditions.

It should be mentioned here, further, that Section 13 of the Act conferred extensive power to control exchanges, which was made use of in the case of the coffee exchange, and which made easy the voluntary regulation of exchanges as to grain, butter, and poultry.

Section 14 also conferred the power to offer a guaranty for wheat. This was utilized, as to both the 1917 and the 1918 crop, to secure the large increase in production. It should be further pointed out that there was no control, as commonly assumed, over the consumer. The limitation of consumption by consumers and public eating houses rested almost entirely upon the educational campaign and appeals to the patriotic spirit of the public.

In conclusion it should be pointed out that the language of the Food Control Act was in many respects indefinite and difficult to construe. The language of the first section, however, as to the purposes of the Act, is so broad that the intention of Congress in favor of a broad construction could not be doubted, especially during the actual progress of the war.

ORGANIZATION AND DIVISION OF PROBLEMS

In forming his organization, the Food Administrator called to his assistance men and women from all sections of the country who were found to be specially qualified to deal with the questions involved. In agreeing to undertake the direction of food administration, Mr. Hoover made it a condition of his acceptance that he should serve without compensation and that he should select his assistants on the same basis. His position on this matter was stated as follows in an interview at that time:

If we are going to take control of the delicate links in the economic chain, we must have the best skill that the country has. The persons most skilled in the handling of those links and their ramifications are those who are engaged in handling them in their everyday life, who have shown by

their success, their superior abilities in the handling of them. . . . But such men cannot be hired at any price by any bureaucracy. We must ask them to volunteer. The country has as much right to ask them as to ask other men to risk their lives in the trenches. There is no country in which, as a matter of fact, they will respond more gladly, no country in which they can be organized more quickly—almost over night.

The employment of volunteers in the positions of principal responsibility also avoided the tendency, apparent in Europe after the war, to perpetuate the war-emergency organization into a permanent bureaucracy.

There was at no time a rigid departmentalization in the organization of the Food Administration. No chart showing the branches of the Food Administration was ever made, for the reason that no exact permanent division was attempted. When through conferences and investigations problems developed into form sufficiently definite to require the consideration of a more or less permanent staff, the Food Administrator selected someone from among his associates to give special consideration to the subject or commodity so separated. The head so selected was at liberty to call on other assistants and to proceed to form such a staff or division as the work required. As the program of control developed and it was possible to give more detailed attention to particular problems, new divisions, formed in the manner indicated, were added to the organization. These divisions, however, were continually changing, as it was not possible to forecast the nature of the obstacles which would arise from time to time. The questions arising were all more or less overlapping, and the changing situation demanded frequent changes of emphasis on the different aspects of price control, conservation, supply, etc. Instead of attempting to fit these continually developing problems into departments already formed and defined in their limits of responsibility, the divisions themselves were frequently changed and were at no time precisely limited in their activities.

The heads of the so-called divisions of the Food Administration may be considered as "problem-leaders," since the organization was on the basis of individuals summoned to solve certain problems. These problem-leaders may be classified under three main sections: first, Commercial or Commodity Control; second, Conservation; and, third, General Services.

The Commercial or Commodity Control problems were those of the regulation of the distribution and trade practices in handling

commodities under heads such as Cereals, Meats and Fats, Canned Goods, Sugar, Perishables (fresh fruits and vegetables, dairy products, etc.), Bakery Products, Non-Perishables in the hands of wholesalers, and the like. The problem-leaders in charge of these different commodities advised with the Food Administrator in the determination of the policies and plans of regulation. Acting in an advisory capacity to these division heads or problem-leaders were a few trade specialists. These trade specialists, who also served without compensation, gave invaluable aid in informing the Administration of the view of the trades and in furnishing technical information as to trade forces, as well as in interpreting to the trades the national necessities. Since some of these trade specialists were financially interested in the lines of business under regulation, it was important to protect them from unjustified charges of favoritism and trade interest; and great care was therefore taken by the Food Administrator to furnish them this protection by defining their functions carefully. The following definition of their functions was given by the Food Administrator:

The Trade Specialists have the following important functions:

- a) To advise on trade practices and trade currents.
- b) To join with divisional heads in trade conferences on various problems.
- c) To interpret the policies of the Food Administration to the trades by conferences, conventions, and correspondence.
- d) To secure and maintain the spirit of voluntary co-operation of the trades, to help in the elimination of practices undesirable in war, to stimulate production and storage, to promote distribution, and particularly to co-operate with the transportation division in its difficult problem in these times of short transport capacity.

The heads of Commodity Divisions and the Food Administrator determine all policies and regulations and make all decisions affecting the objectives of the Administration. The volunteer trade specialists, for their own protection, will take no action of this character. In advising the Food Administration and in interpreting and promoting its decisions and policies, their point of view should be national, their aims national welfare and efficiency.

All enforcement of the law against unfair practices, unreasonable profits, hoarding, etc., is vested in the Enforcement Division solely and the Food Administrator. No action of this character lies in the commodity divisions in any event.

The purchase or sale of foodstuffs by the Administration, or its direction in co-ordination, does and must rest entirely in men free of any financial interest in such transactions.

The Conservation problem was separated from that of regulation and control because it was peculiarly dependent upon the organization of voluntary effort and dealt with social and civic as well as commercial organizations. It was subdivided into sections, such as a section devoted to co-operative organizations (churches, fraternal orders, clubs, and the like), schools and colleges, hotels and restaurants, libraries, and home economics. It was closely allied to both the Educational or Public Information Divisions and the Division of States Administration, since the two chief aspects of it were the decentralization of the work into the different states and communities and the education of the people as to the measures to be taken and the necessity therefor.

The General Service problems were assigned to divisions which functioned for the entire organization. These divisions were: Legal, Statistical, Public Information or Educational, States Administration, Accounting, Filing, Mails, and Office Management.

Because of the preliminary work of the Food Administrator carried on by direction of the President, before the passage of the Food Control Act, an organization was already in existence on August 10, 1917, which was prepared to proceed immediately with the more pressing work. It was owing to this preliminary organization and the study and investigation which had been carried on by it that the Food Administration was enabled to get under headway immediately upon the passage of the Food Control Law on August 10, 1917.

In addition to the General Service divisions mentioned above, there were on August 10, 1917, the following tentative divisions handling the Commercial or Commodity Control Problems—Baking, Canned Goods, Dairy Products, Perishables (fresh fruit and vegetables), Grain, Potatoes, Storage of Perishables, Sugar, Wholesale and Retail Distributors, Fish, Livestock and Meat, and Miscellaneous Commodities. In addition to these there was also an Exports and Imports Division and a Transportation Division.

As further study of problems developed and new commodities were taken under control, additions to these divisions were made and the groupings changed. It would add nothing to the information of this report to follow through the changes in this organization of tasks which took place from time to time. The work of each division is discussed in full under the commodity or problem considered, and it is impossible because of overlapping and interdependence of the work to give exact credit to each division for its particular work.

ORGANIZATION WITHIN THE STATES

In his statement of May 19, 1917, Mr. Hoover said:

I conceive that the essence of all war administration falls into two phases: *first*, centralized and single responsibility; *second*, delegation of this responsibility to decentralized administrative organs.

Again, in his statement before the Senate Committee on Agriculture on June 19, 1917, he defined the fourth great branch of food administration as

the erection in every State in the Union of some form of food administration and the decentralization of our functions so far as possible into the State administrations, we to support them in interstate matters and to advise and co-operate with them. . . .

It is our desire to decentralize our administration into the hands of the State administrations at every point possible. Our theory of administration is that we should centralize ideas and decentralize execution.

This theory of the Food Administrator was put into practice in the work of the Food Administration as rapidly as possible. As the program developed, and the organizations within the various states became more capable through experience, the work of the Food Administration was decentralized more and more, until by the summer of 1918 there was in each state an organization, extending into each county and district, carrying on the actual work of the Food Administration locally in close contact with the people who were vitally interested in that work. National policies were determined upon by the Food Administrator and his staff in Washington, but the carrying out of those policies and their interpretation to the people of the country was largely accomplished through the representatives of the Food Administration within the various states.

Beginning early in June 1917, inquiries were made of the governors of the states, and of other public officials and leading business men who would probably be able and willing to volunteer their services in directing the work of the Food Administration within their states as their part in the war work of the nation. The selection of these men was made with the greatest care possible, with a view to securing men who possessed not only the broad vision and ability for such a complicated task but also the confidence and respect of the people of their respective states. When a man was thus selected the Food Administrator submitted his name to the President and recommended that he be appointed as Federal Food Administrator for

the designated state. The President then made the appointment if he approved the recommendation.

Federal Food Administrators for about half the states were selected before August 10, 1917. Early in June those who had been selected came to Washington for the first conference with Mr. Hoover, at which conference preliminary plans were made for proceeding with the work within the states immediately upon the passage of the Food Control Act. Other men were chosen very soon after the passage of the Act, and finally there was appointed a Federal Food Administrator for each state as well as one for the District of Columbia and one for each of the territories, Hawaii, Porto Rico, and Alaska.

It is impossible within this report to give an account of the work carried on within and the problems peculiar to each state in the matter of food administration. The Federal Food Administrator of each state or territory had in fact to carry on the actual work of food administration in the territory under his jurisdiction; he was the representative of the Food Administration, and to him the people under his jurisdiction looked for information and guidance as to the policies of the organization and the duties and restrictions imposed by it. This necessitated the erection within each state of a miniature of the organization existing in the national office with respect to many of the activities. The interpretation of the regulations received from the Washington office was passed on to the people by the State Administrators, matters of enforcement were handled almost exclusively through them, and the detection of violators of the regulations and the investigation of complaints were matters of regulation and commodity control with which they were particularly charged. But the national office was even more dependent upon the state organizations in matters of conservation; for the State Administrator with his local representatives were relied upon to accomplish the all-important task in conservation, viz., the bringing home to the people of his state the necessity for food conservation and a clear understanding of the reasons for saving certain commodities. Upon the staff of each Administrator there was therefore a Home Economics Director, a State Merchants Representative, a Library Director, and an Educational Director, who were connected through the States Administration Division with their respective chiefs at Washington and who carried out the national plans as well as local plans of their own devising.

County administrators.—The state organizations were further decentralized into the counties and districts. This county organization was not set up immediately upon the creation of the state administration but followed as soon as the need developed and it was possible to make the necessary selections and appointments of county administrators, which in most states was not until the first part of the year 1918; nor was there any set or uniform method of forming the county organizations. The plan followed in one state which may perhaps be selected as typical and was in fact followed by some other states was as follows: The president of the largest bank in each county was asked to call together a representative of each bank of his city, the editors of the leading newspapers, and the chief executive of the commercial club, etc., for the purpose of nominating for County Administrator the best-qualified man in that county who could give his services without compensation and who would devote considerable time to the work. The nominee was then appointed County Administrator by the Federal Food Administrator for his state. Whether chosen in this way or another, all of the states were thus organized by the summer of 1918. The number of the local administrators did not in fact correspond exactly to the number of counties in the country, for the reason that in some counties more than one administrator was appointed: for example, in counties where there was a large city an administrator for that city was selected in addition to the administrator for the rest of the county. At the time the Armistice was signed there was a total of approximately 3,200 county and district administrators.

These local representatives of the Food Administration were the immediate representatives of the Food Administration in close contact with the people. They were at all times available to the citizens in their localities for suggestions and complaints and soon became known as the most reliable sources of information with reference to all national food questions. Their work was, therefore, of vital importance. Worthy of special mention was their work in the distribution of sugar certificates during the summer and fall of 1918, when the sugar distribution plan was in force. The entire burden of the proper distribution of these certificates to those entitled to their possession on a commodity so important to the householder as sugar was a burden of no small proportions. The details of this work, and of other special campaigns carried out through the administrators, are hereinafter referred to.

The instruction of the people as to the wishes of the Food Administration, the supervision of trade practices, and the interpretation of the Food Administration program were in the final analysis the activities which determined the effectiveness of the endeavors of the Administration. It should be remembered, therefore, that the designation "Food Administration" as used in this report refers not only to the national office but also and in particular to that vast and admirable organization extending through the Federal Food Administrator of each state and territory down to the local representatives in each county or district. The work of all was indispensable, and to all of them goes the credit. The regret is that limited space forbids the inclusion in the report of special mention of the admirable work done by each of these volunteers in the war service.

A list of the State Food Administrators for the war period is given in Appendix B.

STATES ADMINISTRATION DIVISION

With this vast organization existing throughout the country under the direction of a different head within each state, it was of the greatest importance that close contact be maintained both between the state organizations and the Washington office and between the different state organizations themselves. The Food Administrator therefore assigned to the Assistant who had in charge the gathering of information as to men available for Federal Food Administrators the further problem of maintaining this contact and co-ordinating the efforts of all Administrators. The division thus created was known as the States Administration Division, and it was this division which served as a clearinghouse for all matters flowing to and from the State Administrators. The activities of this division are considered here in order that the organization for carrying out the plans and measures hereinafter described may be more clearly understood.

The work of the States Administration Division was divided among the assistants of the head of that division on the basis of territorial division; that is, there was assigned to each of four assistants a group of states for which he followed all details. The District Chairman, as each of these four assistants was called, made himself familiar with the interests and problems peculiar to his group of states, answered letters from Administrators in that group or referred them to the proper division of the Food Administration for



Zone Map of the United States Food Administration

attention, and in general represented the point of view of his states and made certain that they were properly informed of changes in the program of the Food Administration.

Correspondence with the states was largely by form letters and telegrams, which went to all Administrators in the same form. In addition to such letters and telegrams, the District Chairmen corresponded on special subjects with their respective states. Also, questionnaires were sent from time to time in order that the Washington office might be advised of the status of affairs in each of the states; and the replies to these questionnaires were so indexed that the situation in a given state or the situation in all the states in regard to any subject could be determined at any time. A biweekly résumé also was prepared by the States Administration Division summing up important developments in the program of the Food Administration and giving a synopsis of important letters and telegrams that had gone out during the period covered. This résumé was issued in sufficient numbers for distribution to all counties.

Meetings.—In addition to the contact maintained by District Chairmen and by formal correspondence, it was found advisable to hold meetings, both in Washington and in the field, in order that the latest developments of the food situation and various problems could be given directly to the Food Administrators and their staffs. These meetings were of three kinds:

1. Meetings of Federal Food Administrators at Washington, which were held on the following dates: July 10–11, 1917; August 14–15, 1917; November 14–15, 1917; January 8–9, 1918; March 12–13, 1918; May 28–29, 1918; September 4–5, 1918; November 12–13, 1918.

2. Meetings of County Administrators, which were held at state headquarters in the various states. These were held at various times throughout the life of the Food Administration and were attended wherever possible by a member of the States Administration Division from Washington.

3. Zone meetings. An additional method of keeping in touch through meetings was adopted at the meeting of Administrators in Washington in May 1918. The country was divided for administrative purposes into eleven zones, the states being grouped according to community of interest. (See Zone Map opposite.) During the summer and fall of 1918, Zone meetings were held in all of these zones, the practice in a majority being to hold a meeting every two

months. In practically all cases a member of the States Administration Division attended the meeting, the District Chairman in charge of the states comprising the zone being the usual representative. A representative of the Food Administration Grain Corporation also attended the meetings. These meetings proved very successful, as they afforded an opportunity for Administrators having similar problems to discuss them more in detail with each other than would otherwise have been possible, while the visiting representatives of the Food Administration advised with them on matters relating to general policy affecting the country as a whole. The Zone meetings were held in 1918 as follows:

- ZONE 1. Boston—June 19; July 15; August 19; September 16; October 28.
(Regular meeting, third Monday of every month.)
- ZONE 2. New York City—July 12; August 16; September 13; November 21.
- ZONE 3. Philadelphia, June 20.
Columbus, Ohio, July 23.
Staunton, Virginia, September 20.
Baltimore, Maryland, November 26.
- ZONE 4. Atlanta, Ga.—June 11; August 6.
- ZONE 5. Chicago—June 29; July 27. (Regular meeting—once each month, in Chicago.)
- ZONE 6. Vicksburg, Miss., July 15.
Memphis, Tenn., July 27.
Shreveport, La., October 31.
- ZONE 7. Kansas City—June 27; July 26; September 20; November 7. (Regular meeting monthly.)
- ZONE 8. Fargo, N.D.—June 22; August 17; September 31.
- ZONE 9. Denver, Colo., June 24.
- ZONE 10. Boise, Idaho, August 19.
- ZONES 10 and 11. Joint meetings—at San Francisco, June 21, 1918; at Salt Lake City, Utah, August 1918.
- ZONES 3-5-6-7. Joint meeting at Chicago, November 6, 1918.

Another method of keeping in personal touch with the Administrators on particular problems was through a so-called "Flying Squadron." This "Flying Squadron" was composed of from two to four men who visited particular states from time to time to assist in special tasks and particularly in problems of organization.

IV. CO-OPERATION WITH OTHER GOVERNMENT DEPARTMENTS

Although a separate and independent government establishment, responsible directly to the President, the Food Administration received valuable assistance and co-operation from other government establishments and departments in the accomplishment of special parts of its program. The following should be specially mentioned.

DEPARTMENT OF AGRICULTURE

The relation between the Food Administration and the Department of Agriculture was at all times intimate and fundamental. It was impossible completely to disassociate the problems upon which the two organizations were at work, and the common problems were worked out together with an eye single for the public good. In a broad way it was agreed that the prime functions of the Department of Agriculture should be the stimulation of production, the conservation of products on the farm through the normal and approved processes, the promotion of better marketing and distribution of products from the farms to the markets, the prosecution of the work in home economics along the usual lines theretofore established by the Department, the dissemination of information, and the extension of all these activities as authorized by law.

The principal functions of the Food Administration, as stated above, were the control and regulation of commercial distribution of foods (that is, of the products after they had reached the channels of distribution or the hands of consumers), the conservation of these commodities by consumers, and the elimination of waste.

On the other hand, the question of price dominated the stimulation of production; and while the Department of Agriculture could and did carry on wonderfully constructive work in stimulation of production, the price and market utterances of the Food Administration proved the dominating factor in increased production.

To sum it up: The Department of Agriculture dealt with all the processes of farming up to the time the products left the farm. At this point the Food Administration entered the situation and exercised its wide powers of regulation, direction, and suggestion.

WAR TRADE BOARD

The Food Administrator had two representatives on the War Trade Board, and in all questions of regulation affecting the exporting or importing of food the policy of the Food Administration was followed.

The commodity experts of the Food Administration were largely relied upon for expert and technical advice with reference to the condition of supply of the particular food commodities concerning which they were best informed.

FEDERAL TRADE COMMISSION

The Federal Trade Commission gave the Food Administration valuable assistance in the matter of determining costs in various trades and industries, particularly baking, canned foods, and meat products.

TARIFF COMMISSION

This agency also made special investigations of costs in the sugar industry on behalf of the Food Administration.

WAR INDUSTRIES BOARD

The co-operation with the War Industries Board was especially close with reference to certain of the collateral commodities, such as ammonia, arsenic, and burlap. The program of the Food Administration with regard to vegetable oils was also carried out in conjunction with this Board.

UNITED STATES RAILROAD ADMINISTRATION

The transportation division of the Food Administration was in fact, after February 1918, a division of the Railroad Administration. Special measures with regard to the priority of movements of foodstuffs, permit systems, and the like were to a large degree directed by the Food Administration through this arrangement with the Railroad Administration.

SHIPPING BOARD

The marine transportation division of the Food Administration was in close touch with the Shipping Board. Food import programs, as hereinafter explained, were mapped out and carried through in co-operation with the Shipping Board.

DEPARTMENTS OF COMMERCE AND LABOR

The statistical division of the Food Administration received special aid from these departments as well as from the Department of Agriculture.

DEPARTMENT OF JUSTICE

Although the Food Administration maintained its own legal and enforcement divisions, the Department of Justice handled all matters pertaining to criminal prosecutions under the Food Control Act and gave special assistance in such other legal matters as fell within its regular functions.

V. CONSERVATION

The conservation activities of the Food Administration were the most typical of its work, because conservation results depended upon and were accomplished through the application of the spirit and faith of food administration in the United States. As has already been stated, this basic idea was the reliance upon the organized voluntary effort of the people of the United States. The Food Administrator believed that in the unselfish patriotic spirit engendered by the war, in the intense longing for participation in war service on the part of an energetic and thoroughly aroused citizenship, there was a tremendous force which could be utilized through proper organization and direction to effect the necessary conservation. He therefore rested the solution of one of the most vital problems in the successful conduct of the war upon this faith in the power of a democracy to solve its problems through the voluntary effort of its informed and enlightened citizenship. The results have demonstrated that this faith was not unfounded or misplaced.

The first requirement of the situation was to arouse this great force, which was to a large degree dormant and only potential, and then to direct it toward the elimination of waste in all the economic processes, particularly those having to do with food. To this end the Food Administration planned to utilize every available channel and instrument in our economic and social organization for impressing upon the people the great central idea of conservation, that careless and willful waste in time of war was unpatriotic and that the citizen who truly desired to assist in winning the war was given an opportunity to render that assistance in a material way every day through wise saving.

In the larger sense conservation refers to and includes all of the measures taken by the Food Administration to secure the more economic handling of food, whether by producer, distributor, or consumer. The primary effort was directed to overcoming the steady increase in food consumption in the United States due to higher wage levels. The secondary purpose of the Food Administration was to instill a spirit of economy and of simple living during war time to the end of providing the reserve to meet the financial drains of the war. The measures and suggestions for the elimination of

waste were, however, confined to foods and feeds, and largely to the distributors and consumers of these. The active assistance in saving on the farm and in the immediate marketing from the farm was in the hands of the Department of Agriculture, since it was part of the process of production, although in a few instances the Food Administration did direct special efforts to saving by the producer, as, for example, in the case of wheat-threshing, which will be hereinafter referred to.

ELEMENTS OF THE PROBLEM

We may better visualize the problem of conservation if we picture the whole of the United States as a great reservoir containing the food supply. The intake pipes of this reservoir are production and imports. The outlet pipes are domestic consumption and exports. There are, however, two kinds of consumption: one necessary and essential consumption, and the other waste and luxury consumption. The task of the Food Administration here was to guard the exports outlet and to reduce so far as possible the flow of goods through the waste and luxury consumption outlet.

After the food and feed supply leaves the hands of the producers, waste consumption occurs in a variety of ways, first, in the hands of the distributors, and then in the hands of the consumers. The Food Administration was called upon to search out these leaks, direct attention to them, suggest remedies, and, especially in the case of distributors, direct the application of specific remedies.

In distribution the waste occurs in part from negligent and wasteful trade practices: from faulty loading for transportation, from slow transportation, from failure to unload goods promptly from cars; from buying in too large quantities; from such customs as the acceptance by bakers of the return of stale bread; from the so-called combination sales by retailers; from unnecessary resales; and the like. The distributor could in a measure be controlled by regulation under the licensing power; hence with respect to distribution the principal problem was to find the wasteful practice, secure the co-operation of the trade, and devise a workable regulation to end it.

In the case of the consumer there was an opportunity for food saving in many directions. First, an actual reduction of consumption by that portion of our population, at least 30 per cent, who ordinarily consume more than they require, and by the others who were inclined to extravagance and increased consumption because of higher

wages and the means of satisfying the resulting new demands. Second, inefficient buying and improper cooking practices could be helped by direct instruction. The Food Administration was especially interested in saving certain particular food products of an easily exportable and highly concentrated quality. These were wheat, meat, fats, and sugar. In the saving of these the substitution program, which called for the substitution of other foods for those which we wished to save, played a major part.

In order to induce people to change their diet, education in the elemental facts of nutrition had to be undertaken and vigorously prosecuted. Eighty per cent of the food in the country passes through the hands of the women of the country. Therefore their full co-operation was at once solicited. But while the housewife was first in importance, the men and the children form a large and eloquent part of the consuming public. As consumers they had to be advised that war needs called for a reduction or a change in consumption and their aid solicited. The two elements of this problem were: first, to inform the consumer of the action desired, pointing out where waste and luxury occurred and how it might be remedied; and, second, education, or, perhaps more accurately, educational appeals.

Every agency, every means of assisting in the dissemination of the requests and directions of the Food Administration was utilized. Representatives of the established agencies of society through which groups of people might be reached were called into conference by the Food Administrator in June and July of 1917 and asked to lend their assistance in the work. These agencies included the following: churches, schools, colleges, normal schools, and universities, clubs, lodges, and all fraternal organizations; merchants' associations, retail and wholesale, and other trade organizations; advertising clubs, and other commercial organizations; women's organizations; libraries; transportation companies, both rail and water; and hotels, restaurants, and other public eating places.

In addition to using these established agencies and organizations for reaching consumers, the Food Administration also appealed to people directly through every available medium. First, the press of the country was used for the most important direct daily communication of information concerning the developing program in all the divisions of the Food Administration work. Second, the most important and effective method for directly reaching the women of the country was the personal canvass for membership in and pledges

to the Food Administration. Third, advertising—perhaps the most spectacular and best-known medium used—presented the visual appeal through electric signs, signs on bill boards, in street railway cars, railroad coaches, and every space where the eye of the public would be reached. This advertising campaign also included the valuable co-operation of the moving-picture theater. Fourth, speakers were used both locally and nationally to present the appeal verbally to various audiences.

CO-OPERATION OF THE PRESS

It was obviously fundamental to the entire program of the Food Administration that the public should be kept advised of the facts which determined that program as well as the exact terms of the requests and directions for its achievement. This could be best and most directly accomplished through the one great agency for disseminating information, the press of the country; and from the outset the Food Administration sought and received the full and hearty co-operation of the press of the United States from the great dailies of the cities to the small country weeklies and from the larger magazines to the smallest trade journals.

The importance attached by the Food Administration to the support of the press is evidenced by the letter of appeal sent to 2,500 members of the press immediately after the creation of the Food Administration. The following is quoted therefrom:

The world as a whole is faced with a definite and growing food shortage which will have a most important bearing on our national life, not only as affecting our task of supporting our Allies in the war, but in its ultimate reactions upon our entire range of food industries and the life of our people. I recognize that to an intelligent people it is necessary to prove the case that such a shortage exists and will increase, and that this proof must be furnished as a basis for creating the dominant idea in the national mind that we must enlarge our food service to the world, not only as a war measure, but as a measure of humanity itself. If we can secure the emplacement of this idea in the minds of the people, the sequent suggestions of constructive order which we may make will fall not only on a receptive mind but upon a convinced intelligence. . . . We believe that we must first prove the case and then we must trust to the guidance of the press of the country to secure the awakening of the national conscience to the dominant idea of food administration.

To guide the public mind in these channels, we are wholly and absolutely dependent upon the press of the country. If we do not receive this support, the problem is hopeless. If we do have it, it can be solved.

The problem was, as has been emphasized, the problem of every individual citizen, and the Food Administration therefore endeavored to furnish the people with the most accurate and detailed information obtainable as to the situation with which they were faced. There was of course an intense interest on the part of the people in all of the steps taken by the government for winning the war, and all information relative thereto possessed news value. The military and naval preparations could not be fully disclosed in the public press, and the accomplishment of the war program did not require it; but the work of the Food Administration could be and indeed had to be given wide publicity.

The furnishing of this information could not be left to chance interviews with the Food Administrator and his advisers. To have done so not only would have been a heavy tax upon the time of those charged with heavy responsibilities but it would also have resulted in inevitable inaccuracies and omissions through the differing emphasis placed by individual reporters on facts thus obtained. The Educational Director of the Food Administration was accordingly charged with responsibility for the systematic gathering and release of information for the press. A small staff was maintained which kept in close touch with the appointments of the Food Administrator, with conferences and meetings held with the different commodity-division heads, with information gathered by the statistical branch, with enforcement proceedings, special conservation plans, new rules and regulations, interesting accomplishments in the furtherance of food conservation plans, and with all activities which promised news of general and informative interest to the public. This information so gathered was furnished to the representatives of the press daily without discrimination and in a systematic manner. The Food Administrator personally reviewed the food situation with representatives of the press at a regular weekly meeting with them, and he was further available when information of special importance was desired by the press. News which dealt with topics requiring expert knowledge was submitted to and approved by the expert handling the commodity or subject dealt with, before it was released to the press. Likewise special articles for journals, magazines, and trade papers were reviewed and corrected by those in charge of the work under consideration. Inaccuracies were thus guarded against, and the public learned that it might rely with confidence upon the accuracy of information given out.

The newspaper representatives were thus given every assistance possible in securing accurate and full information for the public. They gave evidence of their appreciation of this opportunity for service by making a special effort to give publicity to news of the Food Administration.

Throughout its period of full activity the demand upon the Food Administration for information continued unabated. This continuing interest was rather unusual in view of the length of time during which the activities ran and the general sameness of the appeals. Yet there were continual changes in emphasis on the conservation and regulation of commodities, the needs became continually more intense, and there were daily developments and accomplishments of interest to be recounted, which served, when properly presented, to maintain the interest of the people.

Sections of the Educational Division were devoted also to the preparation of articles for and the furnishing of appropriate information to publications which served special clientele. These sections were: Women's Journals and Woman's Page Section; Trade Journals Section; Farm Journals and Country Weeklies Section; Religious Journals Section; Negro Press Section; and Labor Publications Section. These sections were directed and the information given out was edited by volunteer editors and writers experienced in each of the type of publications served—people who in most instances were loaned by publications representative of each class and were therefore familiar with the demands and interests of the clienteles served.

There was also maintained a plate service for the great numbers of newspapers throughout the country receiving material from the plate-distributing agencies. Instructive and suggestive articles for the housewife, the farmer, the tradesman, and other sections of the population were thus circulated in those publications, reaching that part of the public which was not reached by the daily press releases to the newspapers. Photographs, matrices, and cuts were supplied to large numbers of newspapers both through the Washington office and through the educational directors on the staffs of the State Administrators. Specific illustrations were supplied to magazines for stories and special articles. Charts and graphic exhibits to illustrate and enforce special conservation programs, particularly the use of substitute foods, were supplied in large quantities on request.

After this work was well organized, it was, in accordance with

the policy of the Food Administration with respect to all activities, decentralized into the various states as much as possible. An educational director was appointed on the staff of the Federal Food Administrator for each state whose duty it was to keep in touch with the press of his state and to keep it supplied not only with news of local interest but also with the news material and special information supplied from the Washington office.

The Educational Division also kept in touch with the extent to which Food Administration material and news were carried in the press of the country. A press-clipping section was maintained and the reaction of the press to the policies of the Food Administration as well as the publicity which its activities were receiving was checked up daily. Misunderstandings and misrepresentations through wrong information were cleared up in many instances through direct communication with the editors.

PERSONAL-PLEDGE CAMPAIGN

The most important means of presenting food conservation directly to the women of the country were the personal-pledge campaigns. The first of these campaigns was begun in July 1917 and lasted for about eight weeks. At that time the Food Administration had no adequate funds, nor organization for an extensive campaign such as was required. The Women's Committees of the Council of National Defense were therefore called upon for assistance and the work was conducted principally with their aid. The housewife was presented either by a solicitor in person or through the mails with a card for signature pledging her as a member of the Food Administration to carry out its requests in the conduct of her household so far as her circumstances would permit. After the signed card had been returned to Washington the signer was furnished with a window card to denote membership in the Food Administration and a home card for the kitchen, the latter carrying directions in the matter of saving. This first campaign reached only a minority of the housewives because it was impossible to build the proper organization throughout the country and give the necessary detailed directions within such a short time. The method of distributing the cards also was unsatisfactory. It did, however, serve to introduce the Food Administration to every community and laid the basis for the second and more intensive campaign.

SECOND PLEDGE CAMPAIGN

In the months of August, September, and October, 1917, an organization of nearly five hundred thousand workers was built up by states, counties, and towns with committees and soliciting teams in practically every town in the United States. These volunteer workers made a house to house canvass and asked each housewife to join the Food Administration by signing the pledge card presented. Personal explanations of the reasons and need for the pledge were made. The press and co-operating organizations, schools, churches, and clubs also intensified their efforts during this pledge week. The result of this campaign was the securing of more than ten and a half million pledge cards signed by the heads of families and the distribution of the window and home cards to that number of homes. This number was subsequently increased by additions, until between thirteen and fourteen million homes in the United States were actively enlisted as members of the Food Administration.

The home card given to the households contained on one side a statement of the reasons for the requests made, and a summary of the task of food saving and our duty toward the Allies. On the other side of the card detailed directions were given as to the commodities to be saved, and suggestions were provided as to the method of saving. Particular emphasis was laid upon saving by substitution. The Food Administration desired particularly to save wheat, meat, butter, pork products, and sugar. It was accordingly possible for those housewives who already felt that they were as frugal as possible with food to join the program of the Food Administration by substituting other foods for these prime commodities which we desired to save.

As the necessity for saving became more pressing, the program for the home was changed and made more detailed. It consequently became necessary to change the home cards to meet the new program. The first home card issued asked for one wheatless meal each day and for sparing use of meats, milk, fats, and sugar. The second home card issued asked for one wheatless day each week as well as one wheatless meal each day. It also asked for one meatless day each week as well as one meatless meal each day. Special emphasis was also laid upon the duty of the housewife to avoid hoarding foodstuffs. It was requested that these home cards should be hung in the kitchen where they might serve as a daily reminder of the pledge of the Food Administration.

ADVERTISING

The American genius for advertising was called to the assistance of the conservation program, beginning on July 9, 1917. The Food Administration was the first of the war organizations to call upon the advertisers of the country for assistance. While advertising is a commodity that can be valued and paid for the same as military equipment, ships, and other commodities in connection with the military program, the Food Administration took the view that the donation of advertising could be asked for upon the same grounds as the donation of personal services. Under the leadership of a volunteer expert in advertising we therefore appealed for volunteer services and material on patriotic grounds. The relative importance which each advertising medium would play in stirring the public mind to conservation duties and needs was planned comprehensively and on a very large scale.

Outdoor advertising interests were the first to contribute; but other advertising mediums—periodicals, newspapers, printed matter in the house organs and similar private publications, controllers of streetcar advertising space and numerous miscellaneous mediums—followed rapidly. No enterprise, public or private, has ever received the widespread display through outdoor and other mediums of advertising that was furnished to the Food Administration. The actual expenditure by the Food Administration in acquiring this return of millions of dollars in advertising was only the expense of a few employees in the Advertising Section of the Educational Division and the actual expense for the accumulation of this contribution was less than ten thousand dollars. The forms of advertising employed were (1) outdoor; (2) poster; (3) street and railway coach signs; (4) conservation advertising by food companies.

1. *Outdoor advertising.*—This included (a) painted bulletin signs on public premises. In this connection the Food Administration had the close co-operation of the Treasury Department, which gave permission for the posting of signs on Federal premises. City and state authorities gave like permission. (b) Electric signs on public premises. (c) Painted and electric signs on private buildings and advertising space. (d) Bill posting on all available outdoor premises.

2. *Half-sheet posters* in public and private buildings throughout the country.

3. *Streetcar and railway-coach signs.*—The streetcar advertis-

ing was donated by the advertising companies controlling this space, and the Railroad Administration gave permission for the posting of signs in railway cars.

4. *Conservation advertising.*—The Advertising Section encouraged milling companies and other dealers to advertise conservation rather than the foods which the Food Administration was trying to save. Sirup manufacturers, sugar companies, and others carried these advertisements in their usual advertising space, thus exhibiting unselfish and patriotic co-operation by advocating the spare use of the products which they had for sale. Some of the milling companies not only carried this advertising in the press but went further and painted signs in considerable number.

An attempt was made to keep a record of the intrinsic value of the advertising received. Below is an appraisalment made in an attempt to evaluate the advertising; but the patriotic giving became so spontaneous after the first six months that it was not possible to keep or make an exact inventory. The work was partially decentralized under the publicity directors of the different states, and no accurate account was kept of all the detailed advertising in the various states. The value, as conservatively estimated, was as follows:

53,524 sheet posters estimated on a 90-day average service per poster	\$ 1,284,000
Other poster advertising, 24 and 3 sheets	1,533,600
3-sheet stands on special store corners	48,000
289 signs on federal premises	867,000
225 signs on city halls or municipal premises	787,500
973 signs on hotels	291,900
79 railroad bulletins	7,900
41 spectacular electric displays	820,000
39 illuminated bulletins	156,000
165 de luxe bulletins—signs with carved or raised columns	577,500
1,273 miscellaneous painted bulletins of various sizes	509,200
4 months' additional display, over the first year, of painted and electric signs	700,000
	\$ 7,582,600

Next in importance to this outdoor space was the space used in the interior of railroad coaches. This space was used for several months, negotiation having been begun with the railroad companies prior to the organization of the Railroad Administration. Fifty thousand of these signs were on display. No national advertiser would hesitate to pay \$12 per month per sign for such exclusive and dominant advertising. Estimating the value to January 1, 1919, on the basis of four months' full showing, gives a total of...\$ 4,800,000

Special 36 x 56-inch posters, beginning with the series known as "The Women of France" and continuing with other posters, were displayed on express companies' deliveries as well as retail merchants' deliveries. The rental value of these was estimated at \$5 per month. With 100,000 of these in circulation, on the basis of six months' service, the value was estimated at.....\$ 3,000,000

Streetcar companies contributed the important advertising medium of standard 11 x 21-inch streetcar space. This was displayed in 60,000 cars with an average of two signs to the car, or 120,000 streetcar signs, valued at.....\$ 960,000

Other classes of space of the same kind included the elevated city roads for large special size cards and that in Fifth Avenue busses. The value of this to January 1, 1919, was estimated at...\$ 75,000

Newspaper and periodical advertising with other miscellaneous contributions was estimated to have a value of approximately\$ 3,000,000

This gave a total value of.....\$19,417,600

This does not include the salaries of volunteers who assisted in securing and devising the advertising, nor does it include the services of artists of national reputation who contributed the painted posters.

MOTION PICTURES

A motion-picture section of the Educational Division was instituted to organize and direct the use of motion pictures in food-conservation propaganda. The War Co-operation Committee of the motion-picture industry was appointed by the president of the national association of the industry to assist in all war activities. Chairmen of subcommittees were appointed in each state, and these chairmen co-operated with the Food Administration. Short reels of pictures depicting food conservation in the home were made with the assistance of leading moving-picture stars and distributed by three important newsreel distributors. The cost of producing and distributing these pictures was contributed by the distributing companies. A few longer reels enforcing and illustrating Food Administration suggestions were made by the Food Administration at its own expense. In this class were the thrift-suggestion pictures showing how foodstuffs which are ordinarily wasted could be used to advantage. Short humorous cartoons were utilized, and a series of lantern slides bearing the practical messages of conservation were widely distributed. The distribution and use of all these pictures by colleges, schools, and social and civic organizations was encouraged

and aided by the educational directors of the Food Administration in the various states. It is, of course, not possible to estimate the number of people reached through the displays in moving-picture theaters; but the importance of this method of direct appeal was without question of first rank in the various mediums employed.

SPEAKERS

No extensive speaking campaign was undertaken by the Food Administration. The use of speakers by co-operating organizations, such as churches, schools, lodges, clubs, etc., for enforcing the appeal of food conservation was encouraged. In connection with the pledge campaign and other special campaigns, voluntary speakers were used in very large numbers throughout practically all the states.

In October 1917 six representatives of the Food Administration were sent as a special commission to France to examine conditions and make a special report of those conditions as related to the food supply in order that they might carry throughout the United States the message thus gained. These representatives returned on January 19, 1918, and with twelve other speakers, who had made special studies of the food problem, made a speaking tour of nineteen of the central states. This speaking tour was the means of reaching large audiences in practically all of the principal towns of the states visited.

No attempt was made by the Washington office to maintain a corps of speakers after April 1, 1918. Two well-known and capable women speakers were retained after that date. These women attended and spoke at national or other special meetings where it was necessary to have a representative of the Washington office. In most of the states a local speakers' bureau was established and speakers were always available to address meetings whenever the opportunity might offer.

EDUCATIONAL INSTITUTIONS

The educational institutions of the country, from the grammar schools to the universities and colleges, gave freely of their assistance in the solution of the food-conservation problem. A School and Collegiate Section of the Food Administration was organized in the fall of 1917, and through this section the activities of all educational institutions were co-ordinated and stimulated. The organization of the educational forces was divided into two fields: (a) that of

the elementary and secondary schools, and (b) that of the higher educational institutions.

The elementary and secondary schools were of especial assistance in reaching the home because the lessons in food conservation impressed upon the school children not only were observed by them in the home but were carried to other members of the family through them.

On August 23, 1917, President Wilson directed a special appeal to school officers, from which the following is quoted:

The war is bringing to the minds of our people a new appreciation of the problems of national life and a deeper understanding of the meaning and aims of democracy. Matters which heretofore have seemed commonplace and trivial are seen in a truer light. The urgent demand for the production and proper distribution of food and other national resources has made us aware of the close dependence of individual on individual and nation on nation. The effort to keep up social and industrial organizations in spite of the withdrawal of men for the Army has revealed the extent to which modern life has become complex and specialized. . . .

In order that there may be definite material at hand with which the schools may at once expand their teaching I have asked Mr. Hoover and Commissioner Claxton to organize the proper agencies for the preparation and distribution of suitable lessons for the elementary grades and for the high school classes. Lessons thus suggested will serve the double purpose of illustrating in a concrete way what can be undertaken in the schools and of stimulating teachers in all parts of the country to formulate new and appropriate materials drawn directly from the communities in which they live.

For the elementary and secondary schools three sets of reading lessons were instituted: the first for the fourth, fifth, and sixth grades; the second for the seventh and eighth grades of the elementary schools and the first year of the high school; and the third for the three upper classes in the high school. Each month, from October 1917 to May 1918, three leaflets, each of thirty-two pages, were issued by the Bureau of Education, working in co-operation with the Food Administration. The individual leaflets were the work of a number of men connected with the educational institutions of the country. These leaflets, entitled "Lessons in Community and National Life," were not confined to food conservation but were, as suggested by the President, related to the child's duties toward citizenship in general. Special emphasis however was given to the conservation program of the Food Administration as illustrative of the type of national service that could be performed in time of peace as

well as in war. They were issued in sufficiently large number so that the needs of schools could be supplied by the Bureau of Education at a small cost, and state, county, and city superintendents of schools assisted in the distribution and utilization of them.

The National Educational Association, at its annual meeting in July 1918, adopted a resolution asking the Food Administration to "prepare in a form suitable for use in public schools, and particularly in the upper grades, lessons and material supplementary to existing courses, which will promote the program of food conservation."

In response to this request a small book entitled *Food Saving and Sharing* was prepared under the direction of the School and Collegiate Section of the Food Administration, and a copy was furnished free of charge to any teacher requesting it.

Another book prepared by the Collegiate Section of the Food Administration entitled *Food Guide for War Service at Home* was designed for use by elementary and high school teachers and the general public. This book contained simple explanations of the problems before the Food Administration, particularly with reference to wheat, meats, fats, and sugar, and laid emphasis upon the substitution program for the home upon which the Food Administration relied for the solution of the supply problem.

Courses of study in the higher educational institutions began in the normal schools and the summer schools in July 1917 and were extended by the use of prepared courses in the higher educational institutions during the regular terms.

The publication used during the summer was entitled *Ten Lessons in Food Conservation*. This was subsequently revised and published in book form under the title *Food and the War*, and one copy of the book was furnished to every college and normal school in the country free of charge, while others were sold by the publishers at a moderate price.

In May 1918 a State Secretary of volunteer college workers was appointed in most states as a member of the staff of the Federal Food Administrator for the state. In some of the states this position was held by the Educational Director and in others by the Home Economics Director. The special function of these officers was to organize college women of the state for volunteer service in furthering Food Administration efforts. Under this direction the college women gave invaluable assistance to the state and county Food Administrators in numerous directions. They furnished volunteer speak-

ers and office help, organized girls clubs, and volunteered their assistance to anyone desiring to undertake food-conservation work.

RELIGIOUS AND FRATERNAL ORGANIZATIONS

To enlist the co-operation of these organizations representatives were invited to a series of informal conferences as follows: religious organizations, July 10, 1917; patriotic societies, July 11, 1917; fraternal organizations, July 12, 1917. At these meetings the necessity for food conservation was presented and the opportunity for service in food conservation by the organizations represented was stressed. Resolutions were passed at each meeting endorsing the general plans of the Food Administration, and the various organizations were pledged to a program of "continuous, persistent, and systematic effort on behalf of the conservation of the food supply."

CHURCHES

Following the general conference of July 10 at which all religious organizations were represented, a separate conference was held with representatives of each denomination, at least one conference being held on practically every week day from July 17 to August 8, 1917. One volunteer representative from almost every denomination was chosen to serve with the Food Administration and to direct the activities of his denomination. A system of weekly report cards was instituted by which the members of the congregations reported to a Food Report Committee of the individual church the extent of compliance with the conservation program by the members' households during each week.

The ministers of all denominations assisted the pledge campaigns of the Food Administration with special appeals from their pulpits on "Conservation Sundays." In response to a demand from the profession, a special three-day course of intensive instruction was given in Washington in July 1917 for a large number of ministers, at which the Food Administrator and several of his expert advisers presented the food problem. The women's societies of the churches were in most instances leaders in food-conservation endeavors. The intimate relation between the home and the church gave special value to this active interest, and much of the success of the efforts toward education in food needs can be traced to this source.

At a conference with editors and representatives of the religious

press of the country, held on July 31, 1917, a representative of the religious press was chosen to serve on the educational staff of the Food Administrator. Special articles were furnished by this representative to religious journals, Sunday School papers, and other publications, written by men and women trained to write for these publications, who were kept closely advised of the conservation program. The material so prepared was sent out to the press through a weekly publication called the *Religious Press Weekly Bulletin*.

FRATERNAL ORGANIZATIONS AND PATRIOTIC SOCIETIES

Conferences similar to those with religious organizations were held with representatives of the larger fraternal organizations. Without exception these also pledged their full support to the conservation program. Many organizations established a talk on food conservation as a part of their order of business at regular meetings, and a five-minute talk was given on the subject by a member at each meeting. Other effective and novel plans too numerous to detail here were carried out by individual organizations on their own initiative.

PUBLIC EATING PLACES

Hotels and restaurants.—Beginning in July 1917 with the appointment of a leading hotel man charged with the duty of organizing the public eating places of the country for conservation, an organization was rapidly effected which became one of the principal forces in food conservation. The United States was divided into seven districts, each with a prominent hotel man as chairman. These district chairmen selected chairmen of state committees, who were approved by the Federal Food Administrator for each state.

A form of pledge card was distributed throughout the country and thousands of signatures were obtained to this pledge, which was in the form of an agreement on the part of the signer to observe faithfully the directions and regulations of the Food Administration in the conduct of his hotel or restaurant. The signers of the pledge were furnished with a large reproduction of the emblem of the Food Administration, which they displayed in their place of business as an evidence of their co-operation. The Food Administration emblem was printed on the menus, and in most cases some short appeal of the Food Administration for food conservation was also carried on the

printed menu. The hotels and restaurants thus served the double purpose of saving in their own establishments and of emphasizing the appeal of the Food Administration to their patrons.

The hotels and restaurants were the first to observe wheatless and meatless days. Meatless days were inaugurated in many of the hotels in New York City on October 9, 1917, and by the middle of December practically all of the principal hotels and restaurants of the country were observing meatless and wheatless days. In fact, the hotels and restaurants were relied upon to set an example for the community in all the principal voluntary-conservation measures. At a meeting held in Washington on March 29, 1918, at the insistence of the chairman of the Hotel Division, about five hundred of the owners and managers of the principal hotels and restaurants of the country, in response to an appeal from the Food Administrator and his assistants, pledged themselves to go entirely upon a wheatless basis in their establishments until after the harvest. This pledge was followed by similar pledges from more than four thousand other hotels and restaurants. This leadership taken by the hotels and restaurants was of great value in securing widespread observance of the appeal for the use of no wheat by the households of the country.

Dining cars.—The dining-car services of the country were organized in August 1917 through a committee of the Association of Dining Car Superintendents. After the railroads were taken under the management of the United States Railroad Administration, this co-operation, which was begun between the Food Administration and the roads when privately owned, was cordially continued. The saving as well as the education of the public effected by the dining-car services was of material assistance.

Steamships.—On October 30, 1917, a chairman was chosen for a Steamship Section of the Hotel, Restaurant, Dining-Car, and Steamship Division. An advisory committee consisting of members of the American Steamship Association and certain labor leaders was appointed. A uniform crew bill of fare was approved by the Department of Commerce and made effective in the Atlantic and Gulf service. This bill of fare was voluntarily used by many Pacific steamers. Steamships on the Great Lakes also put into effect uniform bills of fare formulated by their associations. Inland steamships were controlled by Federal Food Administrators in the different states and followed the same regulations that applied to hotels and restaurants. In co-operation with the War Trade Board, regula-

tions corresponding to those voluntarily observed by hotels and restaurants were put into effect not only upon American steamships but upon all steamships entering American ports for supplies.

Clubs.—The clubs of the country observed the same regulations as the hotels and restaurants, and their co-operation was very complete. The extent to which men's clubs co-operated in the wheat-saving campaign is indicated by the fact that of the clubs in New York City and Brooklyn, including the country clubs of adjacent territory in New York, 298 took the no-wheat pledge in the spring of 1918 and all but five of these kept it until they were formally released on August 1.

Results.—The hotels, restaurants, dining cars, clubs, and other public eating places saved by observance of the meatless and wheatless days and the other conservation requests more than 250,000,000 pounds of wheat, more than 300,000,000 pounds of meat, and over 56,000,000 pounds of sugar.* The importance of the saving by a single large hotel is shown by the fact that on a meatless Tuesday one hotel in New York saved more than 2,000 pounds of meat; and on a wheatless day the same hotel, serving upward of 4,000 persons, saved five barrels of flour. When the hotels went on a no-wheat basis, this hotel saved thirty-five barrels of flour a week. A chain of popular restaurants in New York City saved seven tons of meat on a meatless day, and on a wheatless day in excess of 8,000 loaves of bread. For ten months, the last three of 1917 and the first seven of 1918, American dining cars alone saved 2,480,104 pounds of beef, 2,174,255 pounds of wheat flour, and 348,216 pounds of sugar. It should be emphasized that this saving in the public eating places was entirely on a voluntary basis, with the exception of the regulations on the sale of wheat and sugar which were in force during 1918 and which of course affected the purchase of these commodities by the hotels as well as by individuals.

General orders, effective October 21, 1918, were promulgated which made compulsory the observance by public eating places of certain conservation measures, particularly with reference to wheat products, meat, fats, and sugar. These orders defined certain practices with reference to these food products as wasteful practices under the war conditions, hence unlawful under the Food Control Act. Since these orders were in force only from October 21, 1918, to

* These quantities represented the rations of 8,000,000 soldiers for a month.

December 23, 1918, they cannot be said to have played an important part in the saving effected by the public eating places.

CO-OPERATION OF RETAIL STORES

This co-operation was of special value because of the direct contact between the retail stores and the consumer. A state merchant representative was appointed in each state as a member of the staff of the Federal Food Administrator for that state. The co-operation which the merchant representative solicited from the retail stores of their respective states was in the following seven particulars:

1. *Newspaper advertising.*—The retail stores devoted some portion of their newspaper advertising space to food conservation propaganda.

2. *Direct advertising.*—The retail stores printed food-conservation slogans upon stationery, bill heads, show cards, wrapping paper, etc. Under this head comes also a donation to the Food Administration of space in the fashion sheets, circulars, cards, etc. It also includes the printing of various food-conservation enclosure slips, booklets, and leaflets at the merchant's expense for distribution to his customers.

3. *Outdoor advertising.*—Food-conservation signs were displayed on buildings, premises, and delivery vehicles of the stores.

4. *Window displays.*—Window exhibits were widely displayed by retail merchants to convey the needs and methods of food conservation. Not only was this done in the windows of retail stores but in a great many cities the windows of offices and empty buildings were also utilized, the material being donated and the displays arranged by a local retail merchant.

5. *Indoor demonstration.*—Booths were installed for the demonstration of the facts relating to food conservation. Instruction was given in the preparation and cooking of substitute foods and a wide distribution was given to substitute recipes through this medium.

6. *Auditoriums.*—Space was donated in auditoriums and halls for the purpose of holding food-conservation lectures, cooking classes, and exhibits of various kinds.

7. *Employees.*—Store employees were given special instruction in food conservation aims so that they were able to reflect intelligently the patriotic attitude of the merchant in respect to food conservation and to pass on to the customers the special information obtained as to the aims of the Food Administration.

The Retail Stores Section of the Educational Division in the Washington office directed the work of the State Merchants' Association representative and gave suggestions through correspondence and a regularly issued leaflet as to the special measures which the retail merchants could further through their stores.

LIBRARIES

As community centers for the dissemination of information, the libraries were appealed to for assistance in the distribution of conservation material and encouraging interest in the work. This co-operation was freely given, and throughout the period of the war the libraries performed a very valuable service for the Food Administration.

A Library Director was chosen as a member of the staff of each State Administrator. The general duty of this Director was to keep in touch with the librarians of the state and see that they put before their patrons general and local food information. The Washington office maintained a Library Section of the Educational Division which kept in touch directly with the Library Directors in each state and to a certain extent with the libraries themselves.

The conservation bulletins and other Food Administration printed matter was sent to the Library Directors in large lots for distribution to the libraries in their states. More than 1,500,000 pamphlets and leaflets, and 600,000 posters, as well as a quantity of photographs, were thus distributed.

Direct contact with the libraries was maintained through a publication called *Food News Notes*, issued for libraries only and containing material to which the Food Administration desired to direct their special attention. Bulletin boards were maintained by practically every library in the United States, upon which were displayed Food Administration posters and appeals as well as directions. Particular attention was given to the collection of books and magazines and the listing of these for ready and handy reference by those interested in securing information as to food conservation.

The libraries having auditoriums also freely offered the use of these meeting-places for food-conservation speakers. In many of the larger libraries special exhibits presenting the request of the Food Administration in a graphic and forceful way were prominently displayed.*

* See Edith Guerrier, *We Pledged Allegiance*, Stanford University Press, 1941.

HOME CONSERVATION

At the beginning of the conservation work an advisory council on home economics was brought together in Washington composed of leading home economics and nutrition experts. After the organization of the Food Administration on August 10, 1917, a Division of Home Conservation was created which was also under the direction of home economics experts. The purpose of this division was to promote in the homes the study of methods of economy in the use and preparation of foods, and particularly to assist the women of the country with the problems created by the substitution program of the Food Administration. A Home Economics Director was appointed in each state as a member of the staff of the State Administrator. The Department of Agriculture and the colleges of agriculture had in many of the states organized extension branches of home economics. The women experts already connected with this extension service were called upon by the Food Administration for assistance, and through the co-operation of the Department of Agriculture this experienced and expert organization was enlisted in this special work of food conservation. The Home Economics Director appointed by the Food Administration was in some states the director of the Home Economics Extension Service of the State College, in others the State Home Demonstration Leader employed by the Department of Agriculture, and in still others the head of the Department of Home Economics of the State College. In each case these state directors employed their local representatives as the local representatives in the Home Conservation work of the Food Administration.

In general, the plan for organizing the women of each state for home conservation was the same as that followed in all of the state organizations, namely, to extend the work of the State Administrator by divisions and subdivisions throughout the state until it came directly in contact with the individual households. The conservation requirements and program determined upon by the Administration at Washington and the state authorities was transmitted to the households through district supervisors. For example, in New Hampshire the districts comprised about five towns each; each of the districts was subdivided by a committee chosen for each town. In charge of each group of twenty-five families there was a local leader whose duty it was to see personally every housewife in her assignment within a period of three or four weeks. In order to provide for all these housewives thoroughly practical scientific advice and

help, there was established a force of ten home economics teachers selected by the State Agricultural College. The entire state was then divided into ten instructional districts and a Home Economics teacher was assigned to each instructional district. Within her district a complete schedule was arranged so that the instructor visited each community once a month. At these meetings she met the local leaders and any other women who desired to attend, and went over with them the food lesson of the month as prepared by the Home Conservation Section of the Food Administration at Washington. Discussion was also had upon the facts of the situation upon which the suggested program was based.

The Home Conservation Division in Washington advised in and co-ordinated the work of all the State Directors and acted as a clearinghouse for all information bearing upon the work of these Directors. The Division co-operated closely with the School and College Section and furnished advice in the preparation of lessons on home conservation for the colleges.

An experimental kitchen was maintained and recipes for the use of substitutes were worked out and thoroughly demonstrated before they were sent to the Home Economics Directors of the different states for distribution. Perhaps the most important of the many activities of this Division was the preparation of material consisting of pamphlets and letters and newspaper releases containing recipes and expert advice on substitutes for sugar, wheat, etc. Statements relative to food values, menus, and the like were submitted to and approved by an expert committee of alimentation before they were released for distribution.

In addition to sending out this large amount of material from Washington, the Home Economics Director of each state devised special programs and information on conservation for the women of her state, particularly with reference to the saving of wheat and sugar. Where the problems in cooking occasioned by substitution were especially difficult, the printed advice as well as the assistance of the local agents in home conservation was a very important factor in relieving the burden of the housewife.

GARBAGE UTILIZATION

The conservation program called for the reduction of the amount of garbage to a minimum and thus for the housewife to "watch the

garbage pail." It was recognized, however, that a great amount of unnecessary waste occurs every year through the wasteful disposition of the garbage itself, either through burning or through dumping. With the object of preventing this waste through the utilization instead of the destruction of garbage, a Garbage Utilization Section of the Food Administration was created on November 1, 1917.

The methods of securing utilization were: (1) reduction plants, which reduced the garbage to fats and fertilizer; and (2) use of it as hog feed in cities where reduction plants were not feasible or available. A careful survey was made of the cities of the United States and information was gathered as to their methods of disposal of garbage and the possibilities of inducing a change where the garbage was being wasted. The matter of change in method of disposal was taken up with the authorities of the cities where the necessity for it was apparent, and advice and assistance were given to officials interested in making such change.

This work was necessarily slow because of the necessity of securing action through city councils and the usual channels after convincing the officials of the necessity for the innovation recommended. It is apparent, however, from the following summary of the results accomplished in the fourteen months of this work that an important contribution was made to conservation results even in the face of these obstacles:

Forty cities, having an aggregate population of 2,217,200, changed from a nonutilization method of garbage disposal to a hog-feeding method; and three cities, having a total population of 248,000, changed from nonutilization methods to reduction and recovery of grease and fertilizer. These changes meant that from fifteen to twenty million pounds of pork per annum were produced from garbage formerly wasted. The change to reduction should increase garbage-grease production about 1,500,000 pounds per annum and fertilizer-tankage production about 3,500 tons. These were produced without the use of any existing fats or other commercial commodities and represent recoveries from material formerly regarded as worthless and mere waste.

A further important result of the work of the Garbage Utilization Section was that the attention of practically all of the cities in the United States was directed to the importance of the saving that might be effected through the proper utilization of garbage. The amount of garbage still available for utilization is enormous, and the work of

encouraging the erection of reduction plants and the use of garbage as hog feed could be productive of further very valuable results.

CONSERVATION MEASURES WITH REFERENCE TO
PARTICULAR COMMODITIES

The measures taken to conserve some of the principal commodities, particularly wheat and sugar, included certain conservation regulations imposed upon licensees in addition to the voluntary action asked of everyone. The following is a statement of the more important of these special measures.

Wheat.—By the first of the year 1918 it was apparent that we would have to secure a greater reduction in the rate of consumption of wheat products in the United States than had been brought about by the voluntary conservation measures up to that time, if the necessary amount of wheat was to be supplied to the Allies. On January 24, 1918, Lord Rhondda, the British Food Controller, cabled the Food Administrator, in part as follows:

Unless you are able to send the Allies at least 75,000,000 bushels of wheat over and above what you have exported up to January 1st, and in addition to the total exportable surplus from Canada, I cannot take the responsibility of assuring our people that there will be food enough to win the war. Imperative necessity compels me to cable you in this blunt way. No one knows better than I that the American people, regardless of national and individual sacrifice, have so far refused nothing that is needed for the war, but it now lies with America to decide whether or not the Allies in Europe shall have bread to hold out until the United States is able to throw its forces into the field. I have not minced words because I am convinced that the American people, if they know the truth, will not hesitate to meet the emergency.

On January 1, 1918, the best estimates indicated that there were in the United States 313,000,000 bushels of wheat and flour in terms of wheat not yet shipped from the mill. The amount required for seeding in the spring was at least 31,000,000 bushels, and the normal consumption was about 42,000,000 bushels per month, or 252,000,000 bushels from January 1 to July 1, 1918. The balance, 30,000,000 bushels, was less than the safe minimum carryover, taking into account that probably one-third of this balance would never leave the farm. On the face of these figures there was no exportable surplus; yet it was absolutely necessary in the face of the authoritative statements from the British and French food controllers that 75,000,000 bushels be shipped abroad during this period. The Food Adminis-

tration determined to use every power available to save this amount from the consumption in the United States.

All of the measures to secure voluntary saving on the part of consumers were intensified. The true facts of the situation were given wide publicity, and an appeal was made to every section of the population through all the available channels hereinbefore designated.

On January 18, 1918, the President issued a proclamation emphasizing the necessities of the situation and concluding as follows:

Now, therefore, I call upon all patriotic citizens to effect every possible saving in their use of wheat and wheat flour, to make use of substitutes therefor whenever possible, and, particularly, to conform to the following conservation measures and to the rules and regulations which I have prescribed under the authority vested in me by the act of Congress of August 10, 1917, entitled "An Act to provide further for the national security and defense by encouraging the production, conserving the supply, and controlling the distribution of food products and fuel."

The following were the conservation measures to which particular attention was directed by this proclamation:

1. Every consumer should limit his consumption of wheat flour and other wheat products to not more than 70 per cent of his normal prewar consumption.

Every consumer should observe strictly the days of Monday and Wednesday of each week as wheatless days, on which days he should eat no white bread or other wheat product containing more than 70 per cent of wheat.

Every consumer should observe one meal each day as an absolutely wheatless meal, at which meal should be eaten no wheat or wheat products whatsoever, thus excluding all bread, except corn bread, cakes, pastry, pies, macaroni, spaghetti, and such other products, and all wheat cereals. The Federal Food Administrators in the several States will designate the meal which shall be wheatless.

No person should have on hand more than a thirty days' supply of wheat flour.

2. Retailers should limit their purchases of wheat flour and other wheat products at least to 70 per cent of their normal prewar purchases and should urge their customers to buy more corn meal, hominy, grits, corn starch, barley flour, oatmeal, rolled oats, and rice flour as substitutes for wheat flour.

3. Wholesalers and jobbers should sell to their customers only 70 per cent of their 1917 requirements and should urge the purchase of the substitutes listed above.

4. Bakers should not use wheat flour without using wheat-flour substitutes in an amount equal, at least, to 25 per cent of the amount of wheat flour used.

5. Manufacturers of alimentary paste, biscuits, crackers, pastry, cereals made up wholly or in part of wheat should reduce their purchases and consumption of wheat or wheat flour to 70 per cent of their 1917 requirements.

Wheat millers were required by regulation, effective January 28, 1918, to raise their percentage of extraction from wheat so that they would not use more than 264 pounds of 58 pounds per bushel or heavier wheat in making 196 pounds of flour. This meant an extraction of approximately 74 per cent of the whole wheat as against a normal ratio of approximately 71 per cent. This rule effected an increased output of flour amounting to more than 2,000,000 barrels between the time the rule became effective and July 1, 1918. Mills were further required to reserve a certain proportion of the total flour milled by them for purchase by the Grain Corporation for export purposes and for building up a flour reserve. The supply of flour for export was thus cut off from the channels of distribution, and the supply actually available for domestic consumption was reduced by that amount. Millers and wholesale dealers in flour after February 1 were required to confine their sales of wheat flour to their regular channels of distribution and to ship into no territory more than 70 per cent of the amount shipped into the same territory during the corresponding period of time of the previous year. Wholesale dealers were prohibited from purchasing wheat flour in excess of 70 per cent of the total amount of flour purchased during the corresponding period of the previous year.

Wholesale dealers and millers in sales to retail dealers, public eating places, or consumers after January 28, 1918, were forbidden to sell wheat flour except when accompanied by the sale to the same customer of an equal quantity of wheat flour substitutes, or unless satisfactory evidence was presented that the customer had purchased the required amount of substitutes. For the purposes of this rule wheat substitutes consisted of the following: corn meal, corn flour, edible corn starch, hominy, corn grits, barley flour, potato flour, sweet potato flour, soya bean flour, feterita flour and meal, rice, rice flour, oatmeal, rolled oats, and buckwheat flour.

In sales to consumers the retailer also was required to observe this rule to sell an equal quantity of substitutes to the purchaser at the time the wheat flour was sold.

Bakers were not at first included in the operation of this rule. In order to afford opportunity for experiments and the adjustment of their business, they were on January 28, 1918, required to use only 5 per cent of substitutes in their bread. On February 24 the rule requiring the sale of substitutes also became applicable in sales to bakers. The ratio of substitutes required was on the basis of four

pounds of wheat flour to one of substitutes, and the baker was not only required to use these substitutes in bread but he was not allowed to bake bread that did not contain the required amount of substitutes. On April 14 this proportion was changed to three pounds of wheat flour to one of substitutes. The list of substitutes for bakers was slightly larger than the consumer's list and by special permission was made to include potatoes on the basis of four pounds of potatoes for each pound of required substitutes. On September 1, 1918, the percentage of substitutes required to be used by bakers was reduced to 20 per cent and the rule requiring the use of substitutes was canceled, together with other substitute rules, on November 12, 1918. Other conservation regulations governing bakers (notably the prohibition of acceptance of return of unsold bread) are considered herein under the discussion of baking regulations.

The prewar monthly consumption of flour by bakers in baking bread was approximately 3,000,000 barrels, and as the total output of bread by bakers has increased only slightly it is estimated that these bakers' restrictions effected a saving at the rate of at least 15 per cent for the eight and one-half months to November 12, or a total of 3,825,000 barrels of flour or of 16,830,000 bushels of wheat.

Over 900,000 barrels of flour was normally used in each month in the manufacture of other bakery products such as crackers, cake, breakfast cereals, macaroni, and miscellaneous foods. Rules were promulgated requiring manufacturers to limit their consumption of wheat flour to 70 per cent of the amount used in 1917 for the same purpose. Cracker bakers were required to use 10 per cent of substitutes in their products in addition to being limited to 70 per cent of their normal use of wheat flour.

In some sections of the country, through voluntary campaigns organized under the direction of the State Food Administrators, flour was turned back to the government for redistribution by consumers who had already purchased it. This resulted in the return of very substantial amounts in several states. In some states also successful campaigns were conducted for pledging the entire population to use no wheat until the 1918 harvest. This, of course, was not literally observed; but it unquestionably had a marked effect in securing the desired saving. The saving by hotels and restaurants, hereinbefore referred to, was also of very great importance.

As a result of all of these measures we actually shipped to the Allies between the first of the year and the advent of the new crop

85,000,000 bushels of wheat. We were assisted in the operation by the importation of 28,000,000 bushels of wheat from Australia and the Argentine to supplement our domestic supply.

Saving in grain-threshing.—A great amount of waste of the small grains, particularly of wheat, occurs in the threshing through the faulty adjustment and inefficiency of threshing machines and other wastes connected with the threshing operation. To remedy this waste and secure the maximum efficiency possible in grain-threshing operations, a Threshing Division of the Food Administration was organized in April 1918 under the direction of the Grain Corporation. County committees were appointed in approximately one thousand wheat-producing counties. The county agents of the Department of Agriculture actively co-operated in the work. Through the committees, expert threshermen under the title of "Threshermen's Assistants" in the employ of the Grain Corporation, together with manufacturers' field experts, established direct contact with threshing machines while in operation, made tests of efficiency, directed adjustments, and recorded results both before and after adjusting. These tests disclosed that a large percentage of the threshing machines were creating an avoidable waste of from 1 to 2 per cent of the machine's output through the blowing of good grain with the straw into the straw pile.

Other wasteful practices against which a campaign was directed were the failure to rake the shock rows, to use canvas under the feeder of the machine, to clean up thoroughly after the threshing, and to use tight-bottom bundle wagons for hauling the wheat.

The results of the work of the Grain Threshing Division forcibly illustrate the great value of attention to apparently small causes of waste. From estimates made by the Federal Food Administrators of the thirty-two states organized for this work, it appears that through the efforts above outlined a saving of approximately 22,000,000 bushels of wheat was effected. At \$2.00 per bushel this meant a saving of \$44,000,000. The expenses of the Grain Threshing Division were approximately \$55,000.

Conservation of grains other than wheat.—No special stress was laid on the conservation of the coarse grains—corn, oats, and barley. The transportation difficulties of the winter of 1917-18, together with the low quality of the 1917 corn crop and the sudden demand for these cereals as substitutes for wheat, in accordance with the wheat-conservation program, created temporary and local short-

ages of the proper substitutes in the spring of 1918; but these conditions were gradually relieved and adjusted.

The principal saving of these grains was effected through the prohibition and limitation of their use in the manufacture of distilled and malt liquors. The Food Control Act provided for the following types of operations in connection with the liquor trade: (1) Immediate stopping within thirty days after the passage of the act of the distillation of liquor. (2) Authority to commandeer any distilled liquors for redistillation so far as necessary to provide alcohol for munition requirements. (3) Authority to regulate the supply and use of foodstuffs in the preparation of wines. (4) Authority to regulate the use of foodstuffs in brewing beers. (5) Authority to prohibit the use of foodstuffs entirely in brewing.

By Executive Order of September 2, 1917, the President transferred the administration of Sections 15 and 16 of the Food Control Act, which conferred authority upon the Treasury Department. Therefore the action thereunder was not taken directly by the Food Administration, though its advice was of course sought upon the conservation questions involved.

Under the first authority, distillation of liquor was stopped on September 10 throughout the country and foodstuffs were not used after that date for this purpose. It is estimated that this action of Congress effected a saving of approximately 40,000,000 bushels of corn, barley, and rye during the year 1918. To limit further the use of corn in the manufacture of alcohol, the Food Administration caused a regulation to be issued in December 1917 prohibiting the use of corn in the distillation of alcohol for any purpose unless such corn was below the quality required by Federal Grade No. 6, a quality unfit even for animal consumption.

Under the second authority the War Industries Board found no necessity for commandeering distilled spirits in the country for redistillation into munitions alcohol. Technical difficulties made this action inadvisable, as well as the fact that commercial alcohol could be obtained not only abundantly but on a much cheaper basis than through commandeering a redistillation of potable spirits.

Under the third authority no action was taken because the wines produced in this country were produced from grapes, of which a very small proportion are available as table or raisin grapes, and therefore the stoppage of wine making would have added no consequential amount of food to the national supplies. Conversion of vine-

yards to other production would not have been likely so long as there was prospect of resumption of wine-making at a later date.

Under the fourth authority, with regard to brewing, on December 8, 1917, the President issued a Proclamation limiting the consumption of foodstuffs by brewers to 70 per cent of their 1917 consumption, and the alcoholic content in beer was reduced to $2\frac{3}{4}$ per cent. The amount of grains used for brewing in 1917 was equivalent to approximately 46,000,000 bushels of barley, 23,500,000 bushels of corn, and 2,000,000 cwt. of rice. Maltsters and near-beer manufacturers were also licensed and subjected to rules limiting their use of grain.

During 1918, as the result of the restriction placed by the Proclamation of December 8, 1917, on the use of grains, the amount of grain used in the brewing of beers was reduced to approximately 4,500,000 bushels per month, of which approximately 30 per cent was recovered as cattle feed, and the loss therefore into the beer was practically equivalent to 3,150,000 bushels per month, the grains used being barley, corn, and broken rice. From a food point of view the Food Administrator of course favored the saving of the amount of grain that went into the production of the malt liquors, and if the food issues had been the only ones involved the stoppage of brewing would probably have been recommended by the Food Administrator at an early date.

There were, however, other points of serious import to be considered in arriving at a decision to urge this prohibition. In a letter to Senator Morris Sheppard of Texas, under date of June 4, 1918, the Food Administrator stated his views on this question in part as follows:

It does appear to me that there are temperance issues involved of such tremendous moment that they outweigh the use of the reduced amount of foodstuffs in brewing and in any event give ground for a difference of judgment as to the alternative national risks and losses which need the most careful consideration. If brewing were stopped today, beer would disappear from the liquor trade within one or two months and the whole country would be put practically on a whisky, brandy and gin basis with some supplies of wine. The saloons would be left open and upon a basis of selling of drinks carrying 40% or 50% alcohol, with some small supplies of wine, instead of a large proportion of their customers being served with a drink of $2\frac{3}{4}$ % alcoholic content and therefore, from a temperance viewpoint, much less harmful. It raises the very serious moral problem as to whether infinitely more damage will not result from such action than in a continuation of the use of this limited amount of foodstuffs in brewing.

In September 1918 the grain situation was such that it was felt the total prohibition of the use of grain in brewing should be put in force notwithstanding the obviously difficult questions involved in the decision. Accordingly, on September 16, 1918, the President issued a Proclamation entirely prohibiting the use after October 1, 1918, of any food or feed, except malt already manufactured, in the production of malt liquors, including near beer. The use of malt already on hand was permitted until December 1, 1918.

Sugar.—The prewar annual per capita consumption of sugar in the United States was about 83 pounds, as compared with 42 pounds for France and 90 pounds for the United Kingdom. The per capita consumption of the United Kingdom in 1917 had been reduced to about 52 pounds, while France was consuming at the rate of 35 pounds. There was, therefore, considerable room for reduction in sugar consumption in the United States if our reduction was to be comparable to that of the Allies.

The war conditions which brought increased prosperity to a large section of the population tended, however, to increase the consumption of sugar rather than to decrease it. Candy, soft drinks, canned fruits and vegetables, ice cream, flavoring extracts, chewing gum, sweet pickles, catsup, chili sauce, bakery products, and many other edible products all require sugar in their manufacture, as do certain nonedible products such as tobacco, dental preparations, drugs, explosives, and glycerine. The production of nearly all of these commodities increased rather than decreased during the war. Products such as condensed milk were also exported in unusually large quantities. The armed forces of the United States consumed much more sugar per capita than the civilian population. Considerable amounts were shipped for the Red Cross, the Y.M.C.A., the Knights of Columbus, and other war organizations.

The available supply of sugar is considered in connection with the discussion of sugar control elsewhere in this report. The following is a statement of the specific measures for the conservation of sugar undertaken by the Food Administration.

From the outset sugar was of course placed on the list of food-stuffs on which special emphasis for saving was laid, along with wheat, meat, and fats. The householders and all consumers were asked to cut down their sugar consumption in every way possible. For the reasons stated, however, it became evident by the end of 1917 that the consumption of sugar was not being sufficiently reduced as a

result of the general appeal. The sugar shortage near the end of 1917, especially acute on the Atlantic seaboard, emphasized this fact.

On January 1, 1918, manufacturers of candy, soft drinks, chewing gum, and other nonessentials were placed on an allowance of not to exceed 80 per cent of the amount of sugar they had used during the year previous. It was difficult to enforce this rule because there was not adequate machinery for informing the jobber or refiner as to when his manufacturing customer had reached 80 per cent of his consumption. The enforcement was left largely to the conscience of the manufacturer.

As the sugar situation gradually grew more serious, a certificate system for distribution was decided upon. It was announced on May 2, 1918, that on and after May 15 sugar should not be sold for manufacturing purposes by refiners, wholesalers, or retailers except upon the presentation and cancellation of certificates for the quantity of sugar sold, which certificates were to be issued by the Federal Food Administrator of the state into which the sugar was shipped. Exception was made for bakers and for druggists using sugar in the preparation of medicines. Manufacturers were required to submit statements showing the amount of sugar used during the corresponding period of the preceding year, and certificates entitling them to sugar were issued with the amount so reported as a basis. Manufacturers of essential commodities such as condensed milk were given their normal requirements, while the manufacturers of non-essentials were allowed only 80 per cent of the amount they had used in the preceding year. In issuing these certificates on May 15 the entire amount of sugar used since the first of January was taken into consideration, and if the manufacturer had already used his 80 per cent allotment he was entitled to receive no more sugar before July 1.

By July 1, 1918, the necessity of still further restrictions was apparent. The Cuban sugar crop had proved to be smaller than anticipated, the German advance in France had resulted in the total destruction of some of the most important beet factories in that country, and large quantities of sugar had been lost through submarine sinkings. Moreover, the imperative need of the diversion of a large number of ships to carry troops had reduced the number available for carrying supplies of raw sugar to this country. We had reached the season of heavy consumption of sugar for canning purposes and it was feared that there would be immense losses of perishable foods through lack of sugar for canning.

The Food Administration decided to place a firmer check on the consumption not only by manufacturers but also by homes and public eating places. The certificate system of distribution was consequently extended to all classes of manufacturers using sugar in their products, to public eating places, retail dealers, bakers, and, in fact, to everyone who bought sugar for any purpose other than for immediate household consumption. No one other than the domestic consumer was permitted to buy sugar after July 1 without the presentation and surrender of certificates therefor. The check upon the retailer's supply was the means for enforcing conservation by consumers.

In order to provide wholesale dealers with a sufficient stock to enable them to operate, they were issued interim certificates for sugar sufficient to bring their total stock up to thirty days' normal requirements. These interim certificates with the stock on hand constituted the wholesaler's working capital, and in addition to his interim certificates he was allowed to use those obtained from customers as a basis for the purchase of additional sugar from the refiners. When collected by the refiner the certificates were canceled and turned over to the State Food Administrator who had issued them. Under this plan if any wholesaler violated the regulations and sold sugar without certificates, such a sale resulted in a permanent reduction in his stock, as he was unable to replace such sugar in his purchases from refiners.

The total amount of sugar certificates which Federal Food Administrators issued to retailers was based on the voluntary ration of three pounds per person per month of the retailer. In addition to this amount retailers were allowed to sell to bakers and manufacturers, and the certificate surrendered by such person could be used by the retailer in replenishing his stock from wholesalers.

To encourage home canning the county Food Administrators were authorized to issue, to housewives making proper certificate that they desired to use the sugar for canning, a home-canning certificate which entitled them to buy sugar in twenty-five pound lots. These home-canning agreements could in turn be accepted by the jobber from the retailer and were used by the jobber in the purchase of sugar from refiners. The following is the scheme upon which sugar certificates were apportioned for July, August, and September, 1918:

Class A included manufacturers of candies, sirups, chewing gum, cocoa and chocolate, condiments, confections, flavoring extracts, in-

vert sugar, soda water, soft drinks, sweet pickles, tobacco, honey, wines, dental preparations, dessert powders, malted milk, etc. Manufacturers in this class were limited for July, August, and September to 50 per cent of the amount of sugar they used for the corresponding months the preceding year.

Class B included manufacturers of canned and preserved fruits and vegetables, catsup, chili sauce, drugs, explosives, glycerine, and preserved meats and milk, and persons engaged in bee culture. These were entitled to their reasonable requirements. Ice cream manufacturers formerly of this class were now allowed only 75 per cent of their consumption of sugar for the same period the preceding year.

Class C included all public eating places, boarding-houses serving an average of more than twenty-five persons daily, hotels, restaurants, dining cars, boats, clubs, buffets, caterers, institutions (city, county, state or federal), hospitals, private canteens, internment camps, etc. Basis of allowance was 3 pounds for every ninety meals served during same quarter 1917, or 3 pounds per month for every ninety meals served in June 1918.

Class D included manufacturers of all bakery products, including bread, rolls, sweet yeast dough goods, crackers, biscuits, cookies, ice cream cones, cakes, pies, fried cakes, pastry, quick breads, Boston brown bread, batter cakes, waffles, etc. The basis of their allotment for the quarter beginning July 1 was 70 per cent of the amount used during the corresponding period of the preceding year or 70 per cent of the sugar used in June 1918 for each month of the quarter.

Class E included retailers selling sugar to consumers. They were allowed certificates for July equivalent to one-third of their total sales for the months of April, May, and June, 1918.

The issuance of sugar certificates to any person, firm, or corporation by the Food Administration was not a guaranty that sugar could be obtained to that amount or that the holder of the certificate was entitled to buy from any particular source. The ordinary commercial relations of buyer and seller remained undisturbed, except that sugar could not be purchased without the surrender of certificates for an equal amount.

The apportionment of sugar to all these various classes was based upon sworn statements which each dealer or manufacturer was required to submit to the Food Administrator of his state, showing the past usage of sugar which was to be the basis of his allotment.

Retailers could not sell sugar to consumers in quantities greater

than 2 pounds at a time for residents of towns or cities, or 5 pounds at a time for those residing in the country, except as special modifications might be made by the State Food Administrator for consumers located a great distance from market. In no case could they sell any family at a rate exceeding 3 pounds per person per month, except for home canning as mentioned above. On August 1 the allotment per person was reduced to 2 pounds per month. If the retailer sold sugar for any purpose other than for family consumption and home canning, he was required to obtain sugar certificates from the purchaser for the amount of sugar sold.

On October 30, 1918, owing to the receipt of the new crop of beet sugar and the new crop of Louisiana cane, with improved railway transportation service, it was found possible to increase the allotment of sugar per capita to 3 pounds with a corresponding increase in the allotment to manufacturers. On November 13 a further modification was announced granting an allowance of 4 pounds per person per month and allowing manufacturers substantially their full requirements. On November 27 the restrictions on amounts sold were entirely removed. The period of Food Administration emphasis on conservation of sugar may therefore be said to have ended with the latter date.

It is not possible to state accurately the results accomplished by this conservation. Certain facts as to comparative consumption are, however, illuminating in this connection. The saving of sugar by hotels, restaurants, dining cars, and clubs of the country during the period from October 1, 1917, to October 1, 1918, was estimated, from reports received, at more than 56,000 tons. The consumption of sugar in the United States in the years 1914-1918 inclusive was as follows:

1914	3,761,000 tons
1915	3,802,000 tons
1916	3,659,000 tons
1917	3,684,000 tons
1918	3,496,000 tons

The consumption, therefore, for the year 1918 was approximately 230,000 tons less than for the average of the four preceding years.

Comparison with consumption in the year 1918 gives further evidence of the effectiveness of these conservation measures. In 1919 the consumption was at the rate of 92 pounds per capita, a total of about 4,000,000 tons. Aside from total prohibition, no

forces of appreciable strength were at work in 1919 in addition to those of 1918. That is, the same conditions as the high wage levels and increased buying power of large sections of the population obtained in 1918 as in 1919. It seems fair, therefore, after attributing more than 100,000 tons of the 1919 increase to such new causes of increase as were not present in 1918 to attribute to the measures of the Food Administration a saving of at least 400,000 tons of sugar in the period during which they were operative.

Meat.—Meat was another of the four principal commodities upon which particular stress was placed in the conservation appeals. The first specific measure taken for its conservation was the request for the observance of one meatless day each week—a day on which no meat should be served or eaten—and the suggestion made that poultry or game might be used as substitutes. Tuesday was the day suggested as meatless day, and early in October 1917 the observance of “meatless Tuesdays” was begun by many of the larger hotels and restaurants, as well as by households which observed the pledge to the Food Administration. The observance of “meatless Tuesdays” and “wheatless Wednesdays” soon became a part of the wartime program of practically all citizens.

In the early part of 1918 the lack of sufficient shipping to export meat as rapidly as desired, and the congestion in railroad facilities during the winter of 1917–18 threatened to break the price of livestock to the producer to a discouragingly low figure. It became necessary for this reason to modify the “meatless day” restriction in order to assist in relieving the congested conditions in the livestock market and to allay the fears of producers concerning the effect of the continuance of the restrictions on meat consumption. On February 21, 1918, the Food Administration announced that mutton and lamb might be removed from the “meatless day” restrictions in those states in which the Western production of these meats was available. On March 1, mutton and lamb were removed from the “meatless” restrictions in all states until April 15. The use of mutton and lamb on other days of the week in preference to beef or pork was also suggested.

On March 29, 1918, it was announced that the meatless day would be suspended for the next thirty days. The following quotation from the announcement gives the reasons for this action:

The very much over-normal run to markets of hogs due to supplies dammed back, during the winter months’ car shortage, still continues and

seems likely to go on for another thirty days. After this period the seasonal shortage in marketing will set in.

It is a matter of regret that the extent of our domestic storage capacity, the limited overseas and inland transportation and port facilities do not permit of saving and moving the whole of this temporary and abnormal surplus to the Allies for use when this heavy killing season has passed. On the other hand, the larger and cheaper supplies of potatoes and the larger supplies of milk, together with these further relaxed restrictions on meat so that some portion is available each day should facilitate the enlarged saving of breadstuffs of which we are so much deficient in Allied needs. . . .

Nor should the consumer take this announcement as in any way a departure from the general principles of conservation of all food which the Food Administration preaches. The need of food on the other side is greater than ever—the need of economy in America greater than ever.

The meatless days were not in fact re-installed, and in their stead reliance was placed upon the stressing of everyday conservation in the use of meat in general and certain kinds in particular. On May 2, 1918, it was announced that while it would be necessary to secure economy in the consumption of all kinds of meats it was desired to accomplish this without the re-installation of the meatless day. The following is quoted from this announcement:

If the public will continue in the rigorous elimination of waste and will further economize by reducing the quantity prepared for each meal of all kinds of meats and poultry, more particularly beef, and will restrict their purchases accordingly, the Food Administration hopes that the necessary balance can be maintained.

A general adherence to these recommendations will avoid the inconvenience which arises in many directions from the meatless days and will cause less interference in the daily preparation of food. There is now a seasonal abundance of milk products which can well be substituted in various forms. The shortage of fish during the past several months, due to the necessity of naval requisitioning of trawlers and enlistment of fishermen for the Navy, should soon be considerably relieved by the expansion which has been arranged in other forms of fishing.

On June 12, 1918, the substitution of pork for beef was recommended, and strict economy in the use of beef was urged. The announcement made was as follows:

The demand for beef for our army, the armies of the Allies and their civil population for the summer are beyond our present surplus. On the other hand we have enough increased supply of pork this summer to permit economical expansion in its use. It will therefore be a direct service to our armies and the Allies if our people will in some degree substitute fresh pork, bacon, ham and sausage for beef products.

We request all hotels and restaurants not to place on their menus or

serve boiled beef more than two meals weekly, beef steak more than one meal weekly, and roast beef more than one meal weekly. We ask householders not under any circumstances to buy more than $1\frac{1}{4}$ lbs. of clear beef weekly, or $1\frac{1}{2}$ lbs., including the bone per person in the household.

No further modifications in the conservation measures were made after this date until the withdrawal of conservation requests after the Armistice.

Fats.—The importance of fats and oils in the diet of the people, together with the scarcity of these products in all the belligerent countries except the United States, caused the Food Administration to lay particular stress upon their conservation. No complete survey of the fat situation had ever been made, and under Food Administration control it was necessary to make such a survey with special reference to vegetable oils. With the knowledge of the supply thus obtained, special attention was given to the control of the supply through a control over exports and imports. Through the action of the War Trade Board exports of fats to neutrals were greatly restricted and where allowed were generally limited to the minimum requirements of the importing country.

The increased production of animal fats through the stimulation of hog production is hereinafter referred to. A few compulsory seed crushers and refiners were required by regulation to extract the greatest possible amount of edible oil. The use of shortening in bread was limited by the bakery regulations so that no more than two pounds of vegetable shortening could be used to one barrel of flour. The use of lard in bread was entirely forbidden and the amount of fat used in other bakery products was also limited. These regulations merely insured that no more shortening could be used by bakers than was in fact necessary. As elsewhere noted, careful attention was also given to the conservation of fats through the increased utilization of garbage. The conservation of butter also held an important place in the conservation program.

RESULTS OF CONSERVATION

On July 11, 1918, the Food Administrator, by letter to the President, made the following report of the results of conservation measures during the fiscal year 1917-18:

It is now possible to summarize the shipments of foodstuffs from the United States to the Allied countries during the fiscal Year just closed—practically the last harvest year. These amounts include all shipments to Allied countries for their and our armies, the civilian population, the Belgian Relief

and Red Cross. The figures indicate the measure of effort of the American people in support of Allied food supplies.

The total value of these food shipments which were in the main purchased through, or with the collaboration of, the Food Administration, amount to, roundly \$1,400,000,000 during the fiscal year.

Meats and fats

The shipments of meats and fats (includes meat products, dairy products, vegetable oils, etc.), to Allied destinations were as follows:

Fiscal year 1916-17	2,166,500,000 pounds
Fiscal year 1917-18	3,011,100,000 pounds
Increase	844,600,000 pounds

Our slaughterable animals at the beginning of the last fiscal year were not appreciably larger than the year before and particularly in hogs; they were probably less. The increase in shipments is due to conservation and the extra weight of animals added by our farmers. The full effect of these efforts began to bear their best results in the last half of the fiscal year when the exports to the Allies were 2,133,100,000 pounds, as against 1,266,500,000 pounds in the same period of the year before. This compares with an average of 801,000,000 pounds of total exports for the same half years in the three-year pre-war period.

Cereals

In cereals and cereal products reduced to terms of cereal bushels our shipments to Allied destinations have been.—

Fiscal year 1916-17	259,900,000 bushels
Fiscal year 1917-18	340,800,000 bushels
Increase	80,900,000 bushels

Of these cereals our shipments of the prime breadstuffs in the fiscal year 1917-18 to Allied destinations were, wheat 131,000,000 bushels, and of rye 13,900,000 bushels, a total of 144,900,000 bushels.

The exports to allied destinations during the fiscal year 1916-17 were, wheat 135,100,000 bushels and rye 2,300,000 bushels, a total of 137,400,000 bushels. In addition, some 10,000,000 bushels of 1917 wheat are now in port for Allied destinations or en route thereto. The total shipments to Allied countries from our last harvest will be, therefore, about 141,000,000 bushels, or, a total of 154,900,000 bushels of prime breadstuffs. In addition to this we have shipped some 10,000,000 bushels to neutrals dependent upon us and we have received some imports from other quarters. A large part of the other cereals exported have also gone into war bread.

It is interesting to note that since the urgent request of the Allied Food Controllers early in the year for a further shipment of 75,000,000 bushels from our 1917 wheat than originally planned, we shall have shipped to Europe or have en route, nearly 85,000,000 bushels. At the time of this request our surplus was already more than exhausted. This accomplishment

of our people in this matter stands out even more clearly if we bear in mind that we had available in the fiscal year 1916-17 from net carry-over and as surplus over our normal consumption about 200,000,000 bushels of wheat which we were able to export that year without trenching on our home loaf. This last year, however, owing to the large failure of the 1917 wheat crop, we had available from net carry-over and production and imports, only just about our normal consumption. Therefore our wheat shipments to Allied destinations represent approximately savings from our own wheat bread.

These figures, however, do not fully convey the volume of the effort and sacrifice made during the past year by the whole American people. Despite the magnificent effort of our agricultural population in planting a much increased acreage in 1917, not only was there a very large failure in wheat but also, the corn failed to mature properly and our corn is our dominant crop. We calculate that the total nutritional production of the country for the fiscal year just closed was between 7% and 9% below the average of the three previous years, our nutritional surplus for export in those years being about the same amount as the shrinkage last year. Therefore the consumption and waste in food have been greatly reduced in every direction during the year.

I am sure that all the millions of our people, agricultural as well as urban, who have contributed to these results should feel a very definite satisfaction that in a year of universal food shortages in the northern hemisphere all of those people joined together against Germany have come through into sight of the coming harvest not only with health and strength fully maintained, but with only temporary periods of hardship. The European Allies have been compelled to sacrifice more than our own people but we have not failed to load every steamer since the delays of the storm months last winter. Our contributions to this end could not have been accomplished without effort and sacrifice and it is a matter for further satisfaction that it has been accomplished voluntarily and individually. It is difficult to distinguish between the various sections of our people—the homes, public eating places, food trades, urban or agricultural populations—in assessing credit for these results but no one will deny the dominant part of the American women.

The following tables give the total exports of the cereals, meats, and fats and the percentage of these exports going to Allied destinations in the calendar years 1916, 1917, and 1918:

TABLE II
TOTAL EXPORTS FROM UNITED STATES FOR 1916, 1917, AND 1918

Calendar Year	Meats and Fats, Including Dairy Products and Vegetable Oils	Cereals and Cereal Products
	(Pounds)	(Bushels)
1916.....	2,335,147,981	417,877,233
1917.....	2,390,865,540	372,523,268
1918.....	4,520,567,817	461,098,467

TABLE III
OUR EXPORTS OF PRIME BREADSTUFFS TO ALLIED DESTINATIONS DURING
1916, 1917, AND 1918

(Bushels)			
Grain	1916	1917	1918
Wheat and wheat products.....	169,971,185	137,200,000	213,654,000
Rye and rye products.....	7,918,753	8,583,000	10,975,000
Total	177,889,938	145,783,000	224,629,000

The total export of wheat and rye to all countries was as follows:

1916	234,592,692 bushels
1917	184,325,000 bushels
1918	237,910,000 bushels

The percentages of total exports of these prime breadstuffs going to Allied destinations were:

1916	75.8 per cent
1917	79.1 per cent
1918	94.4 per cent

The remainder of these cereal exports went to neutrals which were dependent upon us.

The success of the campaign against waste in food consumption is also shown by the statistics of garbage collections for the three years, 1916, 1917, and 1918. The amount of garbage collected during 1918 averaged about 10 per cent less than that collected in 1917. Collections during the summer months of 1918 also averaged about 10 per cent less than for 1917; compared with 1916, the reduction was 22½ per cent. The 1918 grease content of garbage, its richness, averaged 18 per cent less than in 1917; compared with 1916 the richness of the 1918 garbage showed a reduction of about 25 per cent. The total volume of garbage grease recovered showed a reduction of 28 per cent from 1917 recoveries.

VI. WHEAT AND FLOUR CONTROL*

Wheat is in many respects the basic food commodity of the world. As we descend in the scale of economic resources in our population, reliance on bread for food increases. Largely because of this actual importance, wheat has also a great psychological importance. A rise in the price of wheat tends of itself and without other causes to bring about a sympathetic rise in all other cereals. And because wheat bread is the principal index of living for the poor, even a small rise in the price of the loaf impresses the average consumer more forcibly than a greater rise in other commodities.

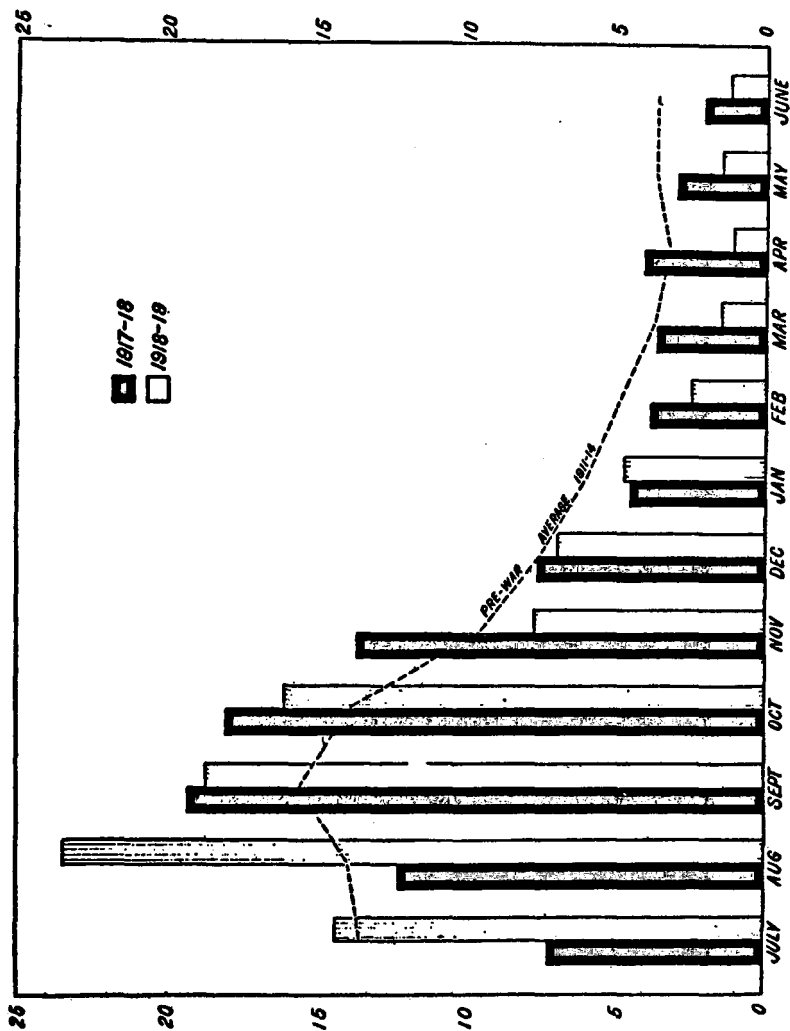
It was to be expected, therefore, that wheat should be one of the first commodities to engage the attention of the Food Administrator. In addition to its importance in the food program of the world, however, there were other conditions which made it imperative that wheat should be the first commodity taken under control. A review of these conditions will give a better understanding of the situation which led to the establishment of the full control over the wheat and flour trade of the United States.

The wheat crops of the United States in 1913, 1914, and 1915 were the largest in our history, the average for the three years being almost 900,000,000 bushels. The average exports of wheat (including flour) for these years were almost a quarter of a billion bushels. Then came the harvest of 1916, which amounted to only 636,318,000 bushels. However, the carryover from the 1915 crop, amounting at the beginning of July 1916 to 179,174,000 bushels, together with the new crop, made possible an export movement in 1916 of 203,575,000 bushels gross, or 178,648,000 net.

During the first two years of the war this country supplied a large part of the demand of western Europe. The neutral nations as well as the Entente Allies drew very heavily upon the United States during those two years for wheat and flour; but it was also possible at that time for them to draw upon Australia, Argentina, India, etc. While they could draw upon these latter countries to

* Much of the following discussion of wheat and flour control as to the 1917-18 crop is taken from the thesis of Mr. Wilfred Eldred, entitled "The Wheat and Flour Trade under Food Administration Control," which was printed in the November 1918 number of the *Quarterly Journal of Economics*.

CHART 1.—WHEAT PRICE LEVELS OF THE YEARS 1917-18 AND 1918-19



some extent in 1916-17, the growing scarcity of ocean tonnage thereafter caused greater and greater concentration of demand upon North America. For the year ending June 30, 1917, our net exports of wheat showed an increase of 55,978,000 bushels, or 45.6 per cent over the average of the three prewar years. On July 1, 1917, the United States came into the new crop year with a carryover of only 55,918,000 bushels—the lowest figure recorded up to that time since 1909.

Coincidentally with this concentration of demand and shortening of supply, there was also over the greater part of the twelve-month period ending in June 1917 an almost continuously mounting price level for wheat and flour. Only between November 1916 and early February 1917 did a net decline occur. From the first of February to the middle of May 1917 there was a rapid and continuous rise which reached a point on the latter date nearly three times as high as the prices current twelve months before. While this was the highest price, the prices current during June and July were well over twice the level of the corresponding months of 1916 (Chart 1).

A serious feature of this situation was the greater difference between the average price paid to the farmer for his wheat and the price paid by the consumer for his flour. The farmer of necessity markets the bulk of his wheat in the early part of the harvest year. Therefore the average price which the farmer receives for his wheat is not the sum of the daily market quotations throughout the year, less handling charges, but is a weighted average of the seasonal time of his marketing. On the other hand, the consumer buys his flour from day to day in fairly equal amounts throughout the year, and the price paid by the consumer is therefore fairly well the average of daily quotations for flour. Arriving at the farmer's average price for wheat on the weighted-average plan, it was estimated by the Department of Agriculture that the average price received by the farmer for his 1916 crop was \$1.44 per bushel. Wheat was selling at Chicago in May 1917 at \$3.45 per bushel, and the consumer was paying for his flour on that basis at that time. This meant that at least \$50,000,000 per month during this high-price period was being taken from the American public above what should have been taken if only the legitimate costs and profits of transportation, grain dealing, and milling had been added to the average price received by the farmer for his wheat.

In addition to the poor crop prospects, the diminishing stocks of

wheat and flour in the United States and Canada, and the elimination of more remote supplies of other countries, the extraordinary price increase was due to the uncontrolled and even reckless buying in American markets by the representatives of Allied and neutral countries. As stated by Mr. Barnes,* "Wheat and the products of wheat became war munitions, and war munitions are bought with a ruthless disregard of all commercial factors."

With the rise of price in wheat and flour a panicky situation developed. Fresh reports of flour scarcity and poor crops caused the rise in price, and this rise in price did not check the increasing demand from the consumers who were "stocking up" against the feared days of impending famine. Speculation by flour jobbers, dealers, and wheat operators was rampant; and, while the public was paying a dear price for its hysteria, the great body of the producers of wheat received little benefit from the prices paid for flour because their wheat had largely passed from their hands before the situation developed.

On May 15, 1917, the directors of the Chicago Board of Trade stopped the trading in the May futures and forced the settlement of outstanding contracts at a maximum price of \$3.18 for the May contract when cash wheat was selling for \$3.45. Similar action was subsequently taken as to July and September futures, upon the outstanding contracts for which the settling prices were fixed at \$2.75 and \$2.45, respectively. Other important exchanges followed the action of the Chicago Board of Trade. With this action taken, again quoting Mr. Barnes, "the whole American marketing system fell like a house of glass."

FORMATION OF PLAN OF CONTROL

In April the Council of Grain Exchanges sent representatives to Washington to confer with the Secretary of Agriculture and to work out some plan of control acceptable to the government and the trade. Out of these consultations was organized the Committee of Grain Exchanges in Aid of National Defense. This Committee, together with a somewhat similar committee representing the Western exchanges, met in conference with Mr. Hoover on May 16, 1917, and at his request submitted a tentative outline of a plan of control. This plan emphasized the absolute necessity of direct government control

* Julius H. Barnes, Chief Cereal Division of the Food Administration during Food Administration control and United States Wheat Director, 1919-1920.

of the transportation of foodstuffs (interchange of railroad cars, etc.) ; the fixing of a wheat price and its maintenance for the entire crop year without change ; the control of the distribution of the available wheat supply by the government, and, as a means to this end, such control over terminal and country elevators as to deprive everyone except the government of their facilities for the storage of wheat (and rye) ; the discontinuance of trading in futures in wheat on the grain exchanges ; and the limitation of the practice, by consumers, of buying flour far in advance and, by mills, of contracting for the sale of flour further ahead than "prompt shipment." These recommendations outlining many of the most important policies later put into effect by the Food Administration.

The wheat-milling industry was of course also threatened by these critical conditions, and, since any plan of control would have to include the millers, representatives of the industry were consulted and asked for suggestions in the formulation of plans. On May 27 a letter from ten prominent representatives of the milling trade to Mr. Hoover urged the necessity of a national Food Administration and recommended that the Food Administrator be given authority over transportation of foodstuffs by lake and rail and also control over foreign buying. It was further recommended that a maximum price be fixed on flour and a relative price on the coarse grains such as corn, oats, barley, etc., that the practice of buying flour for long-deferred shipment be discontinued, and that a milling executive composed of members of the milling industry be designated to act as intermediary between the proposed Food Administration and millers generally.

During the long period that the food legislation was under consideration millers were carrying on their business under conditions of serious uncertainty. Everyone was afraid to risk a purchase of wheat of any great amount for fear that the price would be changed through governmental action and loss would ensue. Consequently no orders for flour except for immediate delivery were accepted and all of this resulted in a great curtailment of flour production at a time when the stocks in the country were already below the danger point.

Adopting the suggestion of the millers and in order to assist them as much as possible, Mr. Hoover on June 27 appointed a committee of nine leading members of the milling industry representing the several sections of the country. Of course no authority could be given this committee by Mr. Hoover, since the Food Control Act had

not been passed and he had no power to delegate authority. The millers, however, desired that the committee should be given some official sanction, as it was proposed to perfect through it a self-controlled organization of the milling industry. The plan of the millers was to effect the necessary stabilization within their industry through their own action, and to this end to consummate agreements among themselves. It was later determined that such an intratrade agreement would be illegal, and this plan for self-control was in part abandoned.

On July 11 the President gave the press a letter from Mr. Hoover calling attention to the dangers of delay in the passage of the Food Control Act. The prevailing high price, which was not benefiting the producer but which was seriously burdening the consumer, he attributed not so much to vicious speculation as to the fact that every link in the distribution chain found it necessary to exact wider profit margins in order to be insured against the risks of widely fluctuating prices when all normal safeguards were lost through the interruption of world trade. He further pointed out that, by the concentration of Allied buying in the hands of a single agency, the Wheat Export Company, the export prices would become subject to the will of a single alien purchaser; that the shortage of shipping further necessitated the spreading of the exportation of the new crop throughout most of the year instead of the usual practice of concentrated moving in the fall months when most of the wheat moves from the farms; and that this change from the normal would probably cause a glut in the interior terminal markets, placing an added strain on the finances of the trade and requiring the assistance of the speculators for carrying the surplus stock. The toll of the speculator in such an event would, as in the past, be levied at the expense of both producer and consumer. To eliminate the speculator entirely and to stabilize the price, Mr. Hoover proposed that the government should buy the surplus wheat at some reasonable price, allowing the normal industrial trade of the country to proceed with proper safeguards against speculation.

A month passed after this letter was written before the Food Control Act became a law, and during this time wheat prices at the principal interior terminal markets approximated \$3. After the creation of the Food Administration the Administrator on August 12, 1917, announced his plans for control of wheat, flour, and bread. In the main these plans were the following:

1. It was proposed that the President should appoint a Fair Price Committee to determine a fair price for the 1917 wheat crop.

2. Such fair price was to be established and maintained throughout the year by a governmental agency.

3. In order to eliminate all speculation in wheat and flour, all elevators and mills of over one hundred barrels daily capacity were to be required to take out a government license and were to be subjected to rules requiring them to make only reasonable and customary charges for warehouse service, to store no wheat for more than thirty days, and to supply certain information as to receipts and shipments regularly.

A further regulation was established over the flour mills of the country prohibiting contracts for sales of flour more than thirty days in advance, thereby preventing the possibility of speculating in flour contracts as well as wheat.

All the grain exchanges of the country were requested to refrain absolutely from trading in futures of every character during the period of the war. In place of the normal marketing machinery, which was suspended by these measures, the Food Administration through the agency to be created proposed to offer to purchase all wheat at the interior terminals, carrying on these transactions with the usual dealers and managers of country elevators. This agency was to be prepared to take the whole of the harvest if necessary in order to maintain the fair price and to resell wheat for export in such quantities as we could part with.

DETERMINATION OF A FAIR PRICE

By the Food Control Act a guaranteed minimum price of \$2 per bushel was established for the 1918 wheat harvest. This did not apply to the 1917 harvest, and in order to determine the reasonable price at which grain should be purchased the President appointed a committee selected from the various distributing centers and consuming interests of the country and charged this committee with the duty of determining a price which would be fair to producer and consumer and one which they could recommend to be maintained by the government throughout the year. This committee reported on August 30, 1917, as follows:

TO THE PRESIDENT OF THE UNITED STATES:

The undersigned committee has been asked by you to recommend the price which the Government should pay for the 1917 crop of wheat.

In its deliberations the committee has kept constantly in mind the three following factors:

First. The fact that the United States is at war.

Second. The need of encouraging the producer.

Third. The necessity of reducing the cost of living to the consumer.

The normal laws of supply and demand have been violently interfered with and Congress has undertaken to offset this disturbance by conferring extraordinary powers upon the President to stabilize prices. Each of the foregoing factors grows out of conditions which have received the careful attention of the committee. Chief among them are: That the wheat yield in a great and important section of the country has this year been below the normal; that over against this situation is the crying need among the whole body of the population, especially the wage earners, that the rising tide of costs shall be stayed and reduced as rapidly as possible consistent with the welfare of the producer; that the Government is at the present time engaged in the great task of reducing and stabilizing costs of other staple commodities; that the wheat of the world is abundant for its needs, even disregarding the stores in Russia, but, because of lack of shipping, and war conditions, the burden of supplying wheat to the allies and to neutral nations rests for the time being upon the United States and Canada.

Your committee has also considered the fact that the Government price for the 1917 wheat crop is in effect a continuing guaranty until the minimum price guaranteed by Congress for the crop of 1918 goes into effect (July 1, 1918). It has considered the relation of the 1918 minimum price guaranty to the price here recommended. It has also considered the effect which an early termination of the war would have upon the wheat markets of the world.

In reaching its conclusion the committee has been guided by the principles you have announced, that a fair price should be based upon the cost of production for the entire country, plus a reasonable profit. We have relied upon the cost estimates for the crop of 1917 furnished by the United States Department of Agriculture, checked by the results of our independent investigations and the evidence submitted to the committee by producers and their representatives.

The committee has considered the regulations recently established by the United States Food Administration Grain Corporation for the different grades of the wheat through which all transactions in wheat are to be standardized and speculation to be entirely eliminated. Also that profits to the grain dealer, miller, and flour dealer have been regulated and reduced by the Grain Corporation, effecting a material reduction in the cost of flour.

In consideration of the foregoing facts and circumstances, this committee respectfully recommends that the price on No. 1 Northern Spring wheat, or its equivalent, at Chicago, be \$2.20 per bushel.

The membership of this committee was as follows:

President H. A. Garfield, Williams College, Chairman.

Charles J. Barrett, President, Farmers' Union, Union City, Ga.

William N. Doak, Vice-President, Brotherhood of Railroad Trainmen, Roanoke, Va.

Eugene E. Funk, President, National Corn Association, Bloomington, Ill.
Edwin F. Ladd, President, North Dakota Agricultural College, Fargo, N.D.
R. Goodwyn Rhett, President, Chamber of Commerce of United States, Charleston, S.C.
J. W. Shorthill, Secretary, National Council of Farmers' Cooperative Associations, York, Neb.
James W. Sullivan, American Federation of Labor, Brooklyn, N.Y.
L. J. Tabor, Master, Ohio State Grange, Barnesville, Ohio
Frank W. Taussig, Chairman, Federal Tariff Commission, Washington, D.C.
Theo. N. Vail, President, American Telephone and Telegraph Co., New York, N.Y.
Henry J. Waters, President, Kansas State Agricultural College, Manhattan, Kansas

On the same date the President handed the following announcement to the press together with the report:

THE WHITE HOUSE, WASHINGTON
August 30, 1917

Section 11 of the food act provides, among other things, for the purchase and sale of wheat and flour by the Government, and appropriates money for the purposes. The purchase of wheat and flour for our allies, and to a considerable degree for neutral countries also, has been placed under the control of the Food Administration. I have appointed a committee to determine a fair price to be paid in Government purchases. The price now recommended by that committee, \$2.20 per bushel at Chicago for the basic grade, will be rigidly adhered to by the Food Administration.

It is the hope and expectation of the Food Administration, and my own also, that this step will at once stabilize and keep within moderate bounds the price of wheat for all transactions throughout the present crop year, and in consequence the prices of flour and bread also. The food act has given large powers for the control of storage and exchange operations, and these powers will be fully exercised. An inevitable consequence will be that financial dealings can not follow their usual course. Whatever the advantages and disadvantages of the ordinary machinery of trade, it can not function well under such disturbed and abnormal conditions as now exist. In its place the Food Administration now fixes for its purchases a fair price, as recommended unanimously by a committee representative of all interests and all sections and believes that thereby it will eliminate speculation, make possible the conduct of every operation in the full light of day, maintain the publicly stated price for all, and through economies made possible by stabilization and control, better the position of consumers also.

Mr. Hoover, at his express wish, has taken no part in the deliberations of the committee on whose recommendation I determine the Government's fair price, nor has he in any way intimated an opinion regarding that price.

WOODROW WILSON

With the "fair price" thus determined by an independent commission, the Food Administrator at once proceeded with plans pre-

viously decided upon for holding the price of wheat to this level and reflecting it effectively to the farmer. The principal steps taken to effect this end were the following: (1) the creation and operation of a government corporation which could deal in wheat and exert its influence in the maintenance of the fair price by acting as a dominant commercial agency for the buying, selling, and distribution of wheat; (2) the licensing of storers and handlers of wheat and the millers of wheat, and their control through both voluntary agreements and license regulations; (3) prohibition of trading in futures.

CREATION AND ORGANIZATION OF FOOD ADMINISTRATION GRAIN CORPORATION

On August 14, 1917, the President, by Executive Order and acting under the authority of Section 2 of the Food Control Act, created the Food Administration Grain Corporation and authorized its incorporation under the laws of Delaware. The Executive Order provided that the capital stock of the corporation should consist of 500,000 shares at a par value of \$100 each, and the United States Food Administrator was authorized and directed to subscribe for and purchase all of this capital stock in the name of and for the use and benefit of the United States.

In pursuance of this Executive Order the United States Food Administration Grain Corporation was organized with a capital stock of \$50,000,000. The main office of the corporation was established at 42 Broadway, New York City, and its business was conducted from that point under the immediate direction of Julius H. Barnes, as president. Mr. Barnes was also head of the Grain Division of the Food Administration.

For the purposes of co-operative organization the United States was divided into fourteen zones centering, geographically and commercially, about terminal markets. The Grain Corporation was represented in each of the fourteen zones by a second vice-president, who resided at the terminal market and acted as government buyer of wheat at that point. This second vice-president or zone agent of the Grain Corporation was entrusted with the responsibility of administering the Grain Corporation in his particular zone and, in co-operation with the Federal Food Administrator, with the enforcement of the law and regulations of the Food Administration so far as these applied to his work. These zone agents gave their services without remuneration and were required to disassociate themselves from busi-

ness interests in the grain trade. In general the scheme followed by the Grain Corporation throughout the United States, was to dislocate the normal machinery of the grain and other trades to the least degree possible, and to this end to make its purchases at the primary interior terminals through the already established marketing machinery of the country and, further, to follow the customs of the trade as closely as possible. In handling the 1917 crop it did not buy at all from farmers or original shippers and did not encourage direct consignments. In the cases in which direct consignments were made a charge of one per cent commission was made for administrative labor.

In the announcement of the Food Administration as to policies and plan of operation made on December 1, 1917, it was said:

In the purchase of wheat the Food Administration acts purely in a merchant capacity, buying wheat at the interior terminals, and reselling on the one hand to the millers for domestic consumption and on the other hand for export purposes. To make sure that its operations will be conducted without loss the Food Administration has secured assurances from the Allies that they will purchase all wheat delivered to our seaboard, and placed at their disposal, at the "fair price." . . . To cover its cost of operation the Food Administration adds one per cent. to the cost of wheat at the interior terminals when it sells and if this one per cent. should be found unequal to the costs of storage, insurance and administration, it will be adjusted to a point which will cover those costs without profit.

The Grain Corporation displaced a large part of the group of middlemen who under normal conditions carried out the function of distributors of wheat. Thus the elevator and warehousemen and grain dealers at the terminals who acted as intermediaries between the country shippers of wheat, both elevators and farmers, and the flour millers and exporters, were no longer necessary under the Grain Corporation scheme. Further, the rules and regulations hereinafter set forth and which applied to dealers as well as millers prohibited the storage of wheat and rye for more than thirty days and thus made it impossible for the middlemen to carry stocks of wheat for any length of time. In those markets where grain is ordinarily consigned by the country shipper to a commission merchant and by the latter sold to millers and other buyers, the principal change made was in requiring dealers who had wheat for sale at the terminal markets to report their receipts to the Grain Corporation Zone Agent, who then apportioned the available supplies to the mills at the government fair price plus an administration fee of one per cent.

In view of these restrictions of the field of individual effort of the great number of grain dealers who thus had their lifetime business taken from them, the loyal support given by these dealers to the Food Administration was one of the fine manifestations of patriotic spirit of business men during the war. At a conference of over one hundred representatives of the grain and elevator trades held in Washington on August 15, 1917, the following resolution expressing the opinion of the grain trade was passed:

Realizing that the operation of Government control in wheat and rye is essential under present war influences in order to adequately protect our home supply and furnish our Allies with the aid we owe, and realizing that the establishment of an efficient Government plan of operation means to all of us curtailment of our business and to some of us actual retirement from active business during such period, we do express our pride in the character of service tendered by the grain trade in the sacrifice by these men of ability who are placing their experience and energy at the service of their Government, and that we approve the general plan of operation as explained to us today as being sound, workable, and necessary, and in its general lines it appears to us as being the most efficient and just plan of operation which we can conceive.

LICENSING

On August 14, 1917, the President issued a proclamation requiring mills having a capacity of more than 100 barrels, elevators storing wheat or rye, to secure licenses from the Food Administration by September 1, 1917.*

The rules and regulations effective September 1, 1917, governing these licensees engaged in the business of storing, manufacturing, and distributing wheat, rye, and their derivative products, were in substance as follows:

Rule 1 required the licensee to make such reports as should be required of him by the United States Food Administration.

Rule 2 prohibited the licensee from handling wheat, rye, or their derivatives on an unjust or unreasonable profit.

Rule 3 provided that the agents of the Food Administration should have authority to inspect the property and books and records of the licensee.

Rule 4 provided that the storage space in all warehouses, eleva-

* By proclamation of October 8, 1917, effective November 1, 1917, the size limit of mills subject to license was reduced to 75 barrels; and by proclamation of January 10, 1918, all mills regardless of capacity were required to obtain licenses by February 15, 1918.

tors, and other plants used for the storage of wheat, rye, or their derivatives should be at the command of the Food Administration and prohibited the licensee from receiving or keeping in storage wheat or rye for a longer period than thirty days, except for the government.

Rule 5 prohibited a miller from keeping on hand or having in possession or under control a greater quantity of wheat, rye, or their derivatives than should be equivalent to the output of his plant during a period of thirty days.

Rule 6 prohibited the licensee operating a mill from having outstanding at any time a contract for the sale of any product of his mill except those requiring shipment within thirty days after the making of the contract.

These rules were amended on November 1, 1917, by the inclusion of certain rules for the conservation of wheat (which are considered herein under "Conservation") and extending the rules to include wheat and rye flour. The rules of November 1 further prescribed a form of uniform contract for use in the sale of wheat or rye flour in quantities of 25 barrels or more, and certain rules hereinafter noted relative to profit restrictions.

AGREEMENTS WITH MILLERS (1917-18)

As stated above the Food Administrator had approved the appointment of nine leading members of the milling industry and the division of the country into as many sections for the purpose of organizing the millers to co-operate with the Food Administration. After the creation of the Food Administration this organization was made a part of the Food Administration as the Milling Division. Through this Milling Division a voluntary agreement was entered into with the Food Administration by several hundred millers providing for the regulation of the industry, and voluntary agreements were also made between the millers and the Grain Corporation. The chief provisions of these agreements were the following:

1. The millers were not to pay a higher price for wheat than the fair price established by the government and to be maintained by the Grain Corporation.

2. The Grain Corporation guaranteed the mills against a loss through a decline in the value of their unsold wheat and flour below the government price basis if this wheat and flour was bought during the period of agreement.

3. The Grain Corporation agreed that it would endeavor to maintain in available positions an adequate supply of suitable wheat to meet the milling demands of the mills and secure an equitable distribution of wheat between the mills on a pro rata basis (the mills' quota to be proportionate to the ratio that its average grind during 1914, 1915, and 1916 bore to the total average grind of all the mills during that period, allowance being made for new capacity).

4. Millers agreed to operate their mills at a profit not to exceed 25 cents per barrel on flour and 50 cents per ton on feed.

5. The Grain Corporation agreed to apportion over the entire milling trade all export sales of flour.

The millers further agreed to observe the following rules: To make a return upon oath of their profits earned each month; to refrain from contracting to sell flour more than 30 days in advance; and not to store wheat for more than 30 days' supply without the permission of the Food Administration.

Over 3,000 millers pledged themselves to operate their business under these agreements with the Food Administration. These agreements were in fact all important because without them the principal safeguard against a variation from the fair price to be maintained by the government would have been swept away. The price of wheat was not fixed by law, and there was therefore nothing except these agreements to prevent the miller from paying whatever price he chose for his wheat. In fact, some of the smaller country mills did refuse to sign the agreement and increased the volume of their business by paying the farmer a higher price for his wheat than that established by the government. However, all of the principal mills, representing ninety per cent of the milling capacity of the country, were represented by the millers under the voluntary agreements. The co-operation of the millers through the Milling Division of the Food Administration, which was largely of their own creation, deserves much commendation. Most of the agreements were signed and returned within ten days after they were sent out, and the whole plan was put into execution promptly by reason of this spirit of co-operation.

VII. OPERATIONS OF THE GRAIN CORPORATION

DISTRIBUTION OF WHEAT TO MILLS

Crop of 1917.—In carrying out its agreement to make an equitable distribution to the mills of available wheat, allotments to the mills within the various zones were made upon a proportional basis determined by averaging the grind of each mill making requisition for wheat for the three years 1914, 1915, and 1916. Wheat was allotted in an amount equal to the percentage which the average grind of the mill for these three years bore to the total grind of all the mills during that period, proper allowance being made for new capacity. The mills under their agreement bought only through the agencies of the Grain Corporation, except where they bought directly from the farmers and local dealers at country points. Grain shippers at country points were required to advise the zone agents of their wheat available for shipment.

More than two-thirds of the 21,600 country elevators entered into an agreement with the Grain Corporation by the terms of which the latter, upon payment of storage and carrying charges at the rate of two cents per bushel per month and guaranty to the elevator operators against a decline in the price of their wheat below the government basis, was given the right to control the disposition of the elevators' stocks of wheat, either by retention at point of origin, or, upon adjustment of returns, by diversion of shipment from the destination originally intended. This agreement with the elevators besides being essential to the wheat-distribution plan, prevented country wheat dealers from lowering their price to the producer because of charges which might accrue on wheat awaiting car service.

By this control of country shipments, by eliminating to a considerable degree the buying of the terminal elevators, and by strict attention to transportation details through its Traffic Division and car-supply departments maintained for grain and flour shippers, the Grain Corporation was able to take the wheat from point of origin and deliver it to the mills with but very little delay and burden of transportation and handling costs. During the first three months of operation by the Grain Corporation, the receipts of wheat at the primary markets ran nearly 55,000,000 bushels behind the figures for the cor-

responding months of 1916 (a decline of nearly 40 per cent), while the rate of flour production during the same period was more than 15½ per cent larger than during the corresponding period for the previous year. This accomplishment is the more remarkable in view of the fact that in 1917 the total available stock of wheat was over 15 per cent less than in 1916.

This achievement of the Grain Corporation averted one of the most dangerous crises in our national food situation during the war. We have already called attention to the fact that the flour production was very much restricted during the months of June, July, and part of August, as a result of the demoralized market and the uncertainty of millers as to the future situation. A serious depletion in the stocks of flour in many localities, particularly the larger cities, had resulted; and at the time the Grain Corporation started operations there were in certain cities only a few days' supply in the hands of distributors. These depleted stocks were built up into the normal reserves under the war conditions only through the assistance of the machinery of the Grain Corporation described above.

In order to secure an equitable distribution of the available wheat stocks among the mills of the several milling divisions it was necessary for the Grain Corporation to rearrange existing supplies by diverting local surpluses so far as possible from regions of excess to regions of deficit and to fill in the gaps by the importation of supplementary supplies from outside sources. A policy agreed upon with the Allies of treating the North American crop largely as a whole enabled the Grain Corporation to draw upon the movement of the Canadian surplus via the Great Lakes to the extent of about 24,000,000 bushels during the year 1917-18. About 4,000,000 additional bushels of wheat were imported from Australia, chiefly in small sailing vessels. Nearly 700,000 barrels of flour were also imported from these two sources.

FARM MARKETINGS (1917 CROP)

During July and August, 1917, while the Food Control Act was under discussion in Congress and the Fair Price Committee was arriving at its determination of the fair price, the uncertainties as to price made it impossible for the country dealer to do his normal business in wheat. The farm marketings up to September 6, when the Grain Corporation began operations, according to an estimate

made from reports to the Grain Corporation, were only about 88,000,000 bushels as against the normal average of 144,000,000 bushels for the same period as estimated by the Department of Agriculture. After the establishment of the stabilized price, farmers in certain sections were slow to market their crops, for various reasons. Discontent of some farmers at the "fair price" because it was under the unusual price prevailing in the uncontrolled market preceding was one factor. Also, the stabilized price which was assured the farmer by a government agency caused him to feel secure against a fall in price, and in many sections precedence over wheat marketing was given to the marketing of other crops and to the fall work on the farm. Notwithstanding these retarding influences, by December 29, 1917, the total farm marketings had reached a total—for the period from September 6, when the Grain Corporation had begun business—of 315,000,000 bushels as against a normal computed average of 270,000,000 bushels for the same period. That is, in seventeen weeks, under the Food Administration's stabilized price plan, farm marketings had been so enlarged as practically to overcome the deficit below the normal for the first two months of the crop year. A great part of this increased marketing in the period designated must be attributed to the response on the part of the farmer to the urging of Food Administration officials and Grain Corporation agents as to the necessity, from the standpoint of national need, of keeping the wheat crop moving.

During January 1918, severe winter weather and lack of cars slowed up the farm marketings of wheat. In addition the agitation was commenced in Congress about this date for an increase in the guaranteed price for the 1918 crop. The result upon the crop movement was at once apparent. Farm marketings for the season (from July 1, 1917), which had been practically even with the average on December 29, had by April 6, 1918, decreased over 30,000,000 bushels below the normal for a crop of this size. In spite of the car shortage and bad weather, the farm marketings of oats and barley, the prices of which were uncontrolled, ran heavily above the seasonal average during most of the winter period.

To overcome this tendency to hold back the wheat on the farm, a campaign was conducted by the various agencies available to the Food Administration to bring home to the farmer his obligation to market his wheat in order to enable us to carry out our promises to the Allies and to meet the serious domestic shortage. With the con-

sumers making rigid sacrifices because of the wheat shortage, it was pointed out that it was the farmer's patriotic duty to make his grain available, even if he was obliged to make a sacrifice of a few cents per bushels in doing so. The farmer's response to these appeals showed him to be no less patriotic than the rest of the community. Of course the Food Administration possessed the power to requisition in cases where this became necessary. But requisitioning proved to be necessary in only a very few cases. By July first the wheat had been taken from the farm to a degree which broke all records. Agriculture Department reports showed that on that date the reserve on the farm was not more than 8,000,000 bushels.

As it turned out, the price remained the same for the 1918's as for the 1917 crop. By proclamation issued on February 21, 1918, the President established the price for the crop of 1918 on the same basis as the government fair price for 1917-1918, namely, \$2.20 per bushel for No. 1 Chicago, with appropriate premiums and discounts for other markets and grades, though this price was subsequently increased by the Grain Corporation to make allowance for the increase in freight rates. Congress passed the Agricultural Appropriation bill on July 6 containing a section guaranteeing a uniform minimum price at all country stations, irrespective of location or distance from the terminal, of \$2.40 for No. 2 wheat of the crop of 1918; but this bill was vetoed by the President on July 12, 1918.

Another disturbing influence in the marketing of the 1917 crop which should be noted was the interposition of the new federal wheat standards and federal supervision of grading and inspection at the primary markets. These uniform standards were promulgated by the Department of Agriculture under the Grain Standards Act of August 11, 1916, and were injected into the situation at the very beginning of the crop movement for 1917, thus adding complication to the innovations of Food Administration control. These new grades prescribed rigid standards for moisture content and uniformity of quality, and had the effect of sharply penalizing grain which was below standard. The rigidity of the new system was emphasized by the fixed-price differentials between the several grades which the Grain Corporation had found necessary to establish in order to maintain the stabilized price with uniformity and definiteness. Many country dealers, unfamiliar with terminal grading under the federal standards, in order to make themselves safe, were unduly rigid in the grading of country deliveries. This led naturally to much discontent

and complaint under the stabilized-price system, and particularly in North Dakota led to some delay in the farm marketing. Gradually these inequalities were smoothed out, and the Food Administration in many cases required the country dealers to make restitution to the farmers where they had been too severe in their interpretation of grades and dockage. In order to secure the farmers the full value of their grain through competition, the Grain Corporation left as wide a field as possible for the purchase of wheat by sample; all grades below No. 3 were bought on differentials based on actual worth and not on the fixed price differentials.

Crop of 1918.—The 1918 crop of 917,000,000 bushels, corrected in December 1919 to 921,438,000 bushels, showed quite the reverse situation as to marketing. Instead of any delay, from the very beginning of the marketing season the movement of wheat was unusually large. Owing to the fact that the agreements which had prevented an increase over the government basis in the previous year had been canceled, the price of wheat, as hereinafter explained, did not prove to be a "fixed" one, and in the spring of 1919 wheat was selling at a considerable advance over the Grain Corporation basis. The farmers, however, considered the price a fixed one because of their experience of the year before of the futility of waiting for a rise in price and they marketed their wheat directly from the thresher to a far greater extent than the year before. Whereas in 1917 the problem had been to overcome the unwillingness of the farmers to let their wheat go, it now became a problem to prevent wheat supplies from moving completely out of certain districts, thus necessitating "back-hauls" later in the season in order to supply the local mills. The comparative figures of farm marketing for the year 1917-18 and 1918-19, based on reports to the Grain Corporation are presented in Table IV (p. 140).

As a result of the Grain Corporation buying from this large movement of wheat in order to accumulate stocks for export, as well as to guard against a scarcity of reserves, it became impossible in some districts to buy wheat for mills except at a premium. This tended to force up flour prices, and the Grain Corporation resold considerable wheat to the mills in order to keep prices down.

ACTIVITIES OF GRAIN CORPORATION TRAFFIC DIVISION

The distribution of wheat to the mills has already been discussed; but the achievement of the Grain Corporation in its supervision over

the transportation of wheat generally should receive further consideration.

TABLE IV

FARM MARKETINGS FOR THE YEARS 1917-1918 AND 1918-1919, BASED ON REPORTS TO THE GRAIN CORPORATION PRORATED TO CALENDAR MONTHS

Period	Monthly		Cumulative	
	1917-1918	1918-1919	1917-1918	1918-1919
July .....	.....	135,905,000	.....	.....
August	87,911,000	144,226,000	.....	.....
2-month total...	.....	.....	87,911,000	280,131,000
September	90,556,000	142,994,000	.....	.....
3-month total...	.....	.....	178,467,000	423,125,000
October	103,180,000	103,886,000	.....	.....
4-month total...	.....	.....	281,647,000	527,011,000
November	78,605,000	61,782,000	.....	.....
5-month total...	.....	.....	360,252,000	588,793,000
December	46,279,000	51,406,000	.....	.....
6-month total...	.....	.....	406,531,000	640,199,000
January	29,147,000	32,549,000	.....	.....
7-month total...	.....	.....	435,678,000	672,748,000
February	18,526,000	17,742,000	.....	.....
8-month total...	.....	.....	454,204,000	690,490,000
March	17,324,000	11,901,000	.....	.....
9-month total...	.....	.....	471,528,000	702,391,000
April	17,460,000	8,490,000	.....	.....
10-month total...	.....	.....	488,988,000	710,881,000
May	12,945,000	10,297,000	.....	.....
11-month total...	.....	.....	501,933,000	721,178,000
June	9,145,000	8,883,000	.....	.....
12-month total...	.....	.....	511,078,000	730,061,000
Total	511,078,000	730,061,000	.....	.....

One of the first problems was that presented by the Pacific Northwest. With the progress of the war and the shrinkage of shipping available to carry wheat from the North Pacific coast to its usual export destination, an extra burden had been thrown upon the transcontinental railroads to move wheat from this section to the Eastern milling and consuming centers and to the Atlantic and Gulf ports for foreign shipment. The Pacific Coast mills had also begun to build up a very large flour business in the Southern States, where the product of the soft starchy wheats of Washington and Oregon was in high favor. The freight rates on these transcontinental shipments on both wheat and flour were very high, and the establishment of a

fixed wheat price based upon Chicago made the returns to the Pacific Coast wheat growers relatively low. The organization of the grain trade in this section differs from that which prevails typically in other parts of the country in several essentials: Grain is harvested and handled largely in sacks instead of in bulk, and is stored in that form in flat warehouses instead of in elevators equipped with machinery. Because of that condition and also because of the peculiar climatic conditions of the principal wheat-growing districts of the Pacific Northwest, the crop is marketed there in a different manner and leaves the farm more cleanly in the early months of the crop year than in other sections of the country.

While the calculation of the Pacific Coast price on the basis of the Chicago price for equivalent grades less freight and other shipping charges merely affirmed the condition which had existed, for practically two years, complaint was nevertheless at once forthcoming from the Pacific Coast wheat growers and handlers against putting them on the Chicago basis, less freight. A solution was offered by the prospect of ocean transportation available from the Pacific ports owing to the construction of new ships at Pacific yards, since ocean transportation from this coast made it possible to establish a base price at North Pacific export points on an overseas basis instead of adhering to the former price based on rail transport to Chicago. Having received assurance from the Shipping Board of fairly reasonable water rates, the Food Administration, on September 22, 1917, established a base price at Portland and Puget Sound ports for No. 1 Northern, or equivalent, at \$2.05 per bushel for bulk wheat, with the usual premium for wheat in sacks. This meant an increase in the price to the grower in eastern Washington and Oregon of approximately fifteen cents per bushel over the price based on Chicago. A very large wheat crop in those states which would otherwise have seriously burdened the rail carriers was largely retained on the Pacific Coast for grinding by the local mills, the product being shipped by water instead of by the usual rail route overland.

Another critical transportation problem was presented by the conditions on the Great Lakes, where the available carriers had been seriously depleted by the action of the Shipping Board in transferring to the Atlantic such vessels as were suitable for use on the ocean. Lake facilities for grain shipment promised to be inadequate for the urgent ore movement plus the also urgent coal movement plus the grain and flour movement. Grain shipments during the fall, at least

from the Canadian Northwest, might be expected to be very large. To protect the large mills at the eastern end of Lake Erie, as well as to keep a stream of wheat flowing to New York, the Grain Corporation made an agreement with the Lake Carriers Association operating American steamers and with the Canadian Association controlling Canadian steamers, by which they guaranteed to furnish, at a maximum rate of $4\frac{1}{2}$ cents per bushel, basis Duluth and Buffalo, all the carriers which the grain trade would require. In return for this, control of the grain trade on the Lakes was to be put entirely in the hands of the Grain Corporation agent at Buffalo as to the placing of boats for discharge at the elevators available there, so that boats should not be required to wait their turn behind particular elevators. The result was that for the first time in twenty years there were no blockades at the eastern end of the Lakes, and a much larger use of the Lake facilities was therefore made possible. In fact the full ore movement was handled and the full amount of coal stocks for the Northwest was transported during the season of open navigation, while in addition the entire grain movement was handled—all by a lake fleet which had promised to be inadequate.

The transportation on the Great Lakes was carried on in 1918 under a Mobilization Committee. The freight rates were stabilized upon a reasonable basis and the tonnage was so handled at the shipping point and at the point of destination as to eliminate all waste of time in the movement of the vessel, making the carrying capacity practically one hundred per cent efficient. The traffic was so handled through this Mobilization Committee as to practically complete the movement of ore and coal fifteen days before the usual time of closing of navigation. This made available a large amount of vessel tonnage to relieve Western terminals of their burdensome stocks of wheat and carry them East to be placed in storage elevators. Large quantities were also held in the vessels, which were thus used as storage, holding the wheat where it would be readily available for export during the winter months.

The Grain Corporation sold all of the grain and other products delivered at seaboard. This necessitated the taking over of all internal transportation of grain which was intended for export and delivering it to the control of the purchaser when it was delivered at seaboard, thus assuming a function which had previously been conducted by the Allied buyers and their agents. The reasons for this were the following:

1. It is clear that the flow of any commodity in one stream rather than its segregation into several different streams exercises a direct economy in the use of cars, of boats, and of dock and storage facilities.

2. The Food Administration was purchasing for several different agencies—the Allies, the various neutrals, and the C.R.B. In addition it often had to give attention to the transportation of flour or wheat from one internal point to another.

3. In purely domestic business, in the creation of national reserves, in the proper distribution of those reserves, in the protection of milling supplies, and in directing the flow to the greatest economy of rail transportation a very complete traffic organization was required.

4. With fourteen markets scattered through the commercial grain centers of the United States and with direct contact, through Cereal Division supervision, with grain merchants and with cereal and wheat flour mills, the Grain Corporation was in a better position to know marketing conditions and the need of market relief and the sources of supplies than any outside organization could.

5. From the licensees' weekly reports of stocks and movement of grains the Grain Corporation obtained knowledge of what grains were pressing most severely for movement, and through the proper movement the necessary encouragement or repression could be accomplished.

Crop of 1918.—In August 1918 the Railroad Administration appealed to the Food Administration to have its Transportation Division maintain a close supervision over operating conditions at interior primary and terminal markets. In the early part of September 1918 it became apparent that on account of the phenomenal movement of wheat caused by the stabilized price and the large crop, above referred to, with the restricted outlet due to the curtailed shipping program of the Allies and the inability of the mills to care for but a limited amount, the available storage capacity at all markets was rapidly decreasing, and within the space of a week or ten days the terminals would be blocked with grain.

While this situation was not a new one in the wheat industry the difficulty under Food Administration control with the stabilized prices was that the farmer took the position that this price removed from him any incentive to store on the farm. In order to guard against the danger of mills having storage facilities for wheat buying below the government price by offering to take wheat from the

farmer immediately at such lower prices, the mills were directed that such a practice would be considered an unfair one and a violation of the license regulation against unfair practices.

With this check upon the mills the Food Administration then recommended the installation of a permit system for the movement of wheat, instead of the former method of the placing of embargoes by the carriers. This permit system contemplated: that no grain should be permitted to move to market without specific permit; that permits should be issued to the shipper only through the carrier's agent at point of origin; and that the railroad would not move any grain except under such permits. The flow of grain would thus be dependent upon the capacity of the market to absorb, and the distribution of equipment followed the distribution of permits.

This plan was adopted by the Railroad Administration with the understanding that the Traffic Division of the Food Administration should supervise its administration. All permits were approved by a representative of the Traffic Division, he assuming responsibility for any excess of permits that might be issued beyond the capacity of the market to absorb. Grain control committees, each consisting of two representatives of the Railroad Administration and one representative of the Food Administration, were appointed and functioned for practically all of the primary markets. Daily reports were made to the Head of the Traffic Division of the amount of grain in store at each market, the available storage, the number of cars on track, the number of cars of grain received and unloaded during the previous twenty-four hours, the number of permits issued daily, the number of cars of each kind of grain permitted daily, and the name of the state in which the grain originated. Upon the information obtained from this complete survey of the situation, the direction of movement of grain was based.

Although it cannot be said that this permit system worked out to the complete satisfaction of the shippers, there can be no question that more serious difficulties were thus avoided and that the transportation of grain was carried out with a high degree of efficiency.

VIII. MILLERS' PROFIT REGULATIONS

SEASON OF 1917-18

We have already called attention to the small production of flour by the millers because of the conditions existing in the summer of 1917. During July and August the milling activity was less than 75 per cent of normal, and some of the mills were forced to shut down for lack of wheat even as late as September. After wheat began to move freely under government control milling activity was resumed and with the distribution effected by the Grain Corporation the mills were kept well supplied. During the last four months of 1917 the milling production broke all records for a similar period.

The demand for flour seemed inexhaustible. This was due in part, of course, to the fact hereinbefore noted that commercial stocks had been depleted, and the building up of the usual reserves required an unusual amount of flour. Yet even allowing for this cause of an increased demand, the absorption of flour by the trade was exceptional and difficult to explain. The request for conservation of flour was being pressed in every possible way, and while the demand from certain sections of the community unquestionably fell off, the demand from other sections increased. The campaign for return of excessive flour stocks which was conducted in the spring and summer of 1918 brought out a great lot of this flour which was stored away in the fall and winter.

The profit limitation imposed upon the millers in this time of great activity was a limitation of 25 cents per barrel on flour and 50 cents per ton on feed. The Food Administration announced that profits in excess of that figure would be considered unreasonable. The effect of these limitations was that the price of flour fairly reflected the price of wheat, and flour was reduced from the high price prevailing in the summer of \$16.00 per barrel to a wholesale price of from \$10.00 to \$11.00 per barrel. When we consider the normal consumption of 9,000,000 barrels monthly, we see that this reduction of from \$5.00 to \$6.00 per barrel meant a saving of tens of millions of dollars to the American consumer in the fall of 1917 alone.

While this satisfactory result as to flour prices was produced by the profit regulations of millers, the limitation of the profits of the

millers was not without its unsatisfactory features. The large amount of milling, with a mill running at full capacity, brought an unusual return to most of the mills even with this limitation. The insatiable demand caused the mills to produce more than half of their entire production in the first four months—September, October, November, and December. With this high rate of milling activity it became very difficult for many of the mills to keep their profit limitations within the prescribed bounds—25 cents per barrel on flour and 50 cents per ton on feed.

There was particular and special difficulty in the application of the profit limitation to the wheat mill feeds. The high prices then current for feeding prices generally had their effect upon the price of the wheat feeds. Corn, oats, and cotton seed cake were unusually high toward the end of 1917. With a short wheat crop it seemed questionable whether or not it was wise to force the price of wheat mill feeds down and thus concentrate the feeding stuffs demand on these feeds, in this way exhausting the supply. Any reduction in feed prices, however, tended to increase the price of flour. Finally on December 18, 1917, Rule 19 governing wheat-flour millers was promulgated, forbidding a licensee engaged in the business of milling flour and feed from wheat to sell, after December 25, 1917, wheat mill feed at any price in excess of the following:

Bulk price per ton of 2,000 pounds at mill in carloads in no case shall exceed 38 per cent of the average cost to such mill of one ton of wheat at the mill, which cost of wheat shall be the average cost as shown by the previous month's records of said mill and shall include the 1 per cent Administration Fee paid by the mill on all wheat ground.

Differentials (Maximum Prices, Bulk, Mill).

Basis, Bran.

Shorts or standard middlings, \$2.00 per ton of 2,000 lbs. over basis.

Mixed feeds, \$4.00 per ton of 2,000 lbs. over basis.

Flour middlings, \$9.00 per ton of 2,000 lbs. over basis.

Red dog, \$15.00 per ton of 2,000 lbs. over basis.

The following explanation of the rule was made in the announcement:

This rule aims to establish a relation between the price of mill feeds and the price of wheat. It is made necessary by the unusually high price of coarse grains, which has caused unprecedented demand for mill feeds.

In view of possible larger movement of the coarse grains, which would naturally result in a decrease in the demand for and price of mill feed, which in turn would tend to advance the price of flour, it is necessary at this time to adjust the price of mill feed rather than trust to a rigid and unjust arrangement at a later date.

Outstanding contracts were exempted from this limitation.

The question also arose whether the profit limitations should be applied to the milling year as a whole or for certain periods, as by months. Effective September 10, 1917, the following explanation was made on this point:

The word "average" in connection with "maximum profits" is used in recognition of the fact that varying rates of milling activity and variation in the returns derived from the sale of mill feeds, low grades and clears, make it impossible to determine the true profits upon any specific sale of flour or feed or upon the output of a mill upon the basis of a short period of operation. The intent and spirit of the regulation is that no milling enterprise shall earn in the period of any crop year an amount in excess of 25 cents per barrel on its production of flour, and 50 cents per ton on its output of offal. It is desired, however, that the flow of flour to the trade, the operation of mills and the cost and profit of milling shall be as uniform as possible during each month of the year and with that end in view the Food Administration will not look with favor on too great accumulations of profit balance within any part of a year in anticipation of a profitless period in the future. Due allowance will be made for all varying conditions, but millers will be expected and required to exert every effort to reduce any variation from a normal monthly basis.

Other complications of the limitation were the questions as to whether or not excess profits and income taxes should be treated as part of the costs of milling and the 25 cents per barrel and 50 cents per ton. These difficulties of administration cannot be given detailed consideration here and are merely mentioned to illustrate the nature of the many difficult questions which arose.

Some millers attempted to evade the limitations by setting up separate jobbing departments and thus getting a profit on both the milling and the jobbing. Cost reports were also in a few instances padded, salaries were increased, excessive depreciation figures were included, and losses on miscellaneous outside investments were included as a part of the expense—all subterfuges to assist in the retention of the excessive profits. These abuses were met by the Enforcement Division, although at first the control was not rigid. The nature of the task became apparent only with experience. The activities of the Enforcement Division were extended to the flour-milling and flour-jobbing regulations in February 1918, a widespread inquiry was made as to the methods followed by millers in the preparation of their monthly cost reports, and many cases of irregularity and some of fraud were detected.

All mills of 75 barrels daily capacity and over were required to submit a consolidated statement covering the operations of the first seven months under Food Administration control—September 1917 to March 1918—and a similar consolidated report was required for the three months of April, May, and June, 1918. With information contained in these reports as a basis, the Food Administration required the mills to disgorge profits in excess of the limit, either by the sale of flour to the government at a nominal price or by setting up an equivalent credit to the government's purchasing agencies on their books. The Enforcement Division also undertook a thorough audit of the accounts of many of the larger mills. The forms of the consolidated reports provided for a sufficiently detailed itemization of costs of production, reserves, etc., to enable a fairly confident judgment as to the honesty of the reports.

Because of the inaccuracies of the consolidated reports required and the unsatisfactory nature of the information obtained, the Enforcement Division of the Food Administration determined that it would be necessary to make a detailed audit for practically every mill of commercial importance in the country; and this was done. This auditing proceeded, under a special section of the Enforcement Division known as the Cereal Enforcement Section, with great success and resulted in the return of large sums of money by the different mills until November 11, 1918, or shortly thereafter, when most of the milling regulations were withdrawn. With the war spirit gone and the regulations canceled, the power of control rested upon the power to revoke licenses. This was a broad power, but the cancellation of rules freed many of the mills from fear and much that might have been required from them was, after the cancellation of the rules, omitted. Nevertheless, in justice to all the mills which had their accounts audited before this time as well as to other elements of the industry, the auditing had to be carried out and restitution in so far as possible enforced in the case of every mill which had taken undue profits in the 1917-18 milling season. The mills remained under license and the Cereal Enforcement Section of the Enforcement Division proceeded with the work of exacting excessive profits throughout the year 1919 and after the other activities of the Food Administration had ceased.

A considerable part of these profits was liquidated by the sales of flour to the Grain Corporation at reduced prices, the invoices being credited with the amount of excess profits determined to be

due, rather than by direct cash remittance; but this procedure was complicated somewhat by the mills having to pay a premium on wheat over the government price.

THE PLAN OF CONTROL FOR THE 1918 CROP

As stated above, the President, acting under the authority of Section 14 of the Food Control Act, by Proclamation of February 21, 1918, announced the guaranteed price for the 1918 crop as follows:

. . . . in order to make effective the guarantee by Congress for the crop of nineteen hundred and eighteen and to assure such producers a reasonable profit, I do hereby determine and fix, and give public notice of reasonable guaranteed prices for No. 1 Northern Spring wheat and its equivalents at the respective principal primary markets as follows, to wit:

Per Bushel	Per Bushel
Chicago, Ill. ....\$2.20	Seattle, Wash. 2.05
Omaha, Neb. 2.15	San Francisco, Calif. 2.10
Kansas City, Mo. 2.15	Los Angeles, Calif. 2.10
St. Louis, Mo. 2.18	Galveston, Tex. 2.20
Minneapolis, Minn. 2.17	New Orleans, La. 2.20
Duluth, Minn. 2.17	Salt Lake City, Utah 2.00
New York, N.Y. 2.28	Great Falls, Mont. 2.00
Philadelphia, Pa. 2.27	Spokane, Wash. 2.00
Baltimore, Md. 2.27	Pocatello, Idaho 2.00
Newport News, Va. 2.27	Fort Worth, Tex. 2.09
Charleston, S.C. 2.27	Oklahoma City, Okla. 2.05
Savannah, Ga. 2.27	Wichita, Kan. 2.08
Portland, Ore. 2.05	

and that the guaranteed price for the other grades established under the United States Grain Standards Act approved August 11, 1916, based on said price for No. 1 Northern Spring wheat at the respective principal primary markets of the United States above mentioned, will assure the producers of wheat produced within the United States a reasonable profit; the guaranteed prices in the principal primary markets above mentioned being fixed by adopting No. 1 Northern Spring wheat or its equivalents at the principal interior markets, as the basis.

For the purpose of such guaranty only, I hereby fix the guaranteed prices at the respective principal primary markets above mentioned for the following grades of wheat, to wit: No. 1 Northern Spring, No. 1 Hard Winter, No. 1 Red Winter, No. 1 Durum, No. 1 Hard White. The guaranteed prices at the respective principal primary markets aforesaid of all other grades of wheat established under the United States Grain Standards Act approved August 11, 1916, shall be based on the above guaranteed prices and bear just relation thereto.

By Executive Order dated June 21, 1918, the President designated the Grain Corporation as the agency of the United States "to

carry out and make effective, subject to the control and direction of the United States Food Administrator, the provisions of the guarantee" authorized by the Food Control Act and fixed by the Proclamation quoted above. This order contained the following further direction and authorization:

I further direct that in order to make said guarantee effective and maintain the price of wheat to the grower at not less than the guaranteed basis the said corporation shall offer and stand ready to purchase, and shall purchase to the full extent of its ability and available funds, all wheat tendered to it by any producer thereof at any primary market named in said proclamation of February 21, 1918, at the guaranteed price named therein for such market, provided that with the approval of the United States Food Administrator the said corporation may pay any higher prices than the guaranteed basis for any grade of wheat in any given market, and may extend its offer to purchase to other holders of wheat on such conditions as it sees fit.

I further direct that for such purpose the capital stock of such corporation be increased to 1,500,000 shares of the par value of \$100.00 each. . . . I further authorize said corporation to borrow such sums of money, upon the security of wheat or flour owned by it, as may be required to carry out the provisions of this order.

Under this authorization the Grain Corporation announced the following fair prices as the fair price bases at the principal primary markets which it would maintain and at which it stood ready to buy the wheat offered:

New York	\$2.39½
Philadelphia	2.39
Baltimore	2.38¾
Newport News	2.38¾
Duluth	2.22½
Minneapolis	2.21½
Chicago	2.26
St. Louis	2.24
Kansas City	2.18
Omaha	2.18
New Orleans	2.28
Galveston	2.28
Tacoma	2.20
Seattle	2.20
Portland	2.20
Astoria	2.20
San Francisco	2.20
Los Angeles	2.20
Intermountain basis f.o.b. load- ing point outgoing car	2.00

Basic Wheats

- No. 1 Northern Spring
- No. 1 Hard Winter
- No. 1 Red Winter
- No. 1 Durum
- No. 1 Hard White

The above are for "basic" wheats. Certain other classes and varieties of wheat will be dealt in at premiums over, and others at discounts under, the above prices.

The "premium" wheats are as follows:

	Premium
No. 1 Dark Hard Winter	2 cents
No. 1 Dark Northern Spring	2 cents
No. 1 Amber Durum	2 cents

The "discount" wheats are as follows:

	Discount
No. 1 Yellow Hard Winter	2 cents
No. 1 Red Spring	5 cents
No. 1 Red Walla	7 cents
No. 1 Red Durum	7 cents
No. 1 Soft White	2 cents
No. 1 White Club	4 cents

Discounts for other grades than No. 1:

- No. 2 Wheat 3 cents under No. 1
- No. 3 Wheat 7 cents under No. 1
- Grades below No. 3 will be dealt in on sample on merit.

These prices were higher than those fixed in the Proclamation because of the necessity of allowing for the general 25 per cent advance in freight rates announced by the Railroad Administration and of establishing a guaranteed minimum of \$2.00 per bushel for wheat loaded upon railroad cars in country stations in the less advantageous points in the country.

The price paid to the farmer for wheat of the 1918 crop thus became a matter of formal government guaranty, instead of depending, as in the case of the 1917 crop, upon the control of the market by the Grain Corporation and the other checks of the Food Administration. This fundamental difference in the situation made it possible for the Food Administration to dispense with some of the price-control machinery utilized in the 1917-18 season. All of the voluntary agreements covering the 1917 crop were canceled, effective June 29, 1918, and the mills were thereby free to buy from whom they pleased and at prices that they found desirable under the partial renewal of competitive conditions. Further, the large crop of 1918 made it possible to relinquish the control which the Food Administration had exercised over the country elevators as to retention and

diversion of shipments, and shippers were now permitted to choose their buyers.

Of course the lower range of competitive buying was limited by the Grain Corporation's readiness to buy all wheat offered at the prices announced by it. In addition to the control over export buying, the new method used to hold the price to a stabilized level was to limit the millers by license regulations to a fair price schedule for flour and wheat mill feeds. The tendency to advance prices above the fair-price basis was held in check by the fixed differential allowed to the mills, which was based upon payment by them of the fair price paid by the Grain Corporation. This new plan of regulating millers' profits is explained below:

MILLERS' PROFIT REGULATIONS FOR 1918-19 SEASON

A committee was appointed by the President in March 1918, at the request of the Food Administrator, to consider the problem of mill regulations and to recast the method of regulation for the new crop year. This investigation and further independent study on the part of the Food Administration resulted in a new plan. The following was the basic rule which became effective July 22, 1918, applying to all millers:

The wheat miller shall sell flour and feed at not more than a reasonable advance over the average purchase price of the wheat from which it is manufactured, plus the cost of packages; provided that if any such miller pays more for wheat than the customary market price in that locality, as evidenced by the fair guaranteed price basis established by the President's proclamation of February 21, 1918, he shall not be permitted to include in his average purchase price, for the purpose of this rule, the excess over such customary market price.

A fixed differential of \$1.10 was established for the combined price of a barrel of flour and the corresponding amount of offal above the government price for 4.4 bushels of wheat—the amount of wheat required to produce these products. Thus, if the government price for No. 1 Northern wheat at Minneapolis were set at \$2.20 per bushel, the price of 4.4 bushels would be \$9.68 and the combined prices of flour and feed at the mill door might not exceed \$10.78. Further, if the government-named price for mill feed (at, say, 41 per cent of the price of wheat) averaged \$30.00 per ton, or 1½ cents

per pound, at that point, the maximum price for flour at the mill door would be \$9.76.

Individual schedules were sent out to each mill prescribing the maximum price at which that mill might sell its flour and wheat by-products in carload quantities, and prescribing the differentials for various sales classified as to quantity, size of package, etc. These price schedules were figured out for the mills, using as the basis the price of wheat established by the President's proclamation and the modification thereof, at the nearest terminal, adding or subtracting from this the freight to the mill and adding the conversion charge set out above, and subtracting the amount realized from the sale of the feed and other products manufactured from such wheat.

These regulations were easy to police, since prices charged could be readily checked by the reports required from flour jobbers and buyers. Furthermore, they were compulsory; there was no element of voluntary agreement in them, as with the arrangements of 1917-18. Hence it became possible to dispense with the elaborate and expensive machinery of the Milling Division, which accordingly went out of existence. In its stead a milling section, with a representative miller at its head, was established in the new Cereal Division, of which the Grain Corporation also became a part. The profit regulations governing millers mentioned above were canceled December 19, 1918.

MEASURES TAKEN TO MAINTAIN GUARANTEED PRICE BASIS

Notwithstanding the rule quoted above which based the permissible margins of profit on the guaranteed prices, premiums above these prices were paid even before the cancellation of that rule on December 19, 1918. After the latter date the premiums increased until they threatened to create a marked inequality between the price paid for the wheat sold in the fall and that which was held back for the later months.

Prices as reported to the Grain Corporation from the different named markets compared with the government base price for the months of December 1918 and January, February, and March, 1919, are shown in Table V (p. 154). Not only was this increased price unfair to the producers who had sold their wheat earlier, thus causing a feeling of resentment on their part, but it also threatened to disturb the price basis and to cause an undue increase in the price of flour.

TABLE V

Market	Government Base	December		January		February		March	
		High	Low	High	Low	High	Low	High	Low
Chicago									
No. 1 Northern.....	\$2.26	\$2.30	\$2.26	\$2.31	\$2.26	\$2.29	\$2.26	\$2.50	\$2.29
No. 2 Red Winter ..	...	2.36	2.23	2.46	2.23	2.33	2.30	...	2.23
No. 2 Hard Winter.	...	2.28	2.24	2.39	2.28	2.25	2.22	...	2.35
Kansas City									
No. 1 Northern.....	2.18	2.31	2.18	2.35	2.29	2.26	2.18	2.50	2.20
No. 2 Red Winter ..	2.15	2.32	2.19	2.53	2.28	2.34	2.27	2.60	2.30
No. 2 Hard Winter.	2.15	2.28	2.20	2.40	2.27	2.32	2.23	2.60	2.25
St. Louis									
No. 1 Northern.....	2.24	2.35	2.27	2.53	2.24	2.29	2.25	2.47	2.30
No. 2 Red Winter ..	2.21	2.32	2.25	2.55	2.36	2.43	2.35	2.63	2.23
No. 2 Hard Winter.	2.21	2.27	2.25	2.54	2.17	2.34	2.16	2.43	2.30
Minneapolis									
No. 1 Northern.....	2.21½	2.24	2.21	2.26	2.12	2.32	2.21	2.51	2.21
No. 2 Red Winter ..	2.18½	...	2.18	...	...	...	...	...	...
No. 2 Hard Winter.	2.18½	2.23	2.12	2.24	2.18½	2.25	2.00	2.42	2.25

To combat this increasing premium, the Grain Corporation took the following steps: (1) Large quantities of wheat were resold in the market from the stocks of the Grain Corporation, with only the addition of handling and carrying charges above the guaranteed-price basis. (2) The Grain Corporation also offered to sell straight flour from its stocks of wheat at the price of \$11.50 per barrel. (3) About 4,000,000 bushels of wheat were imported from Canada for sale on the guaranteed basis.

In the months from February to June, inclusive, a total of 86,850,744 bushels of wheat were resold by the Grain Corporation, in the following amounts by months:

January and February, 1919.....	13,487,518 bushels
March 1919	42,016,981 bushels
April 1919	21,391,107 bushels
May 1919	8,018,192 bushels
June 1919	1,936,946 bushels

The relation of the price received for wheat by the farmer to the wholesale price of wheat products, to and including June 1919, is shown in Table VI (p. 156), and Charts 2 and 3.

CHART 2.—SPREAD BETWEEN PRODUCERS' PRICE OF WHEAT AND THE VALUE OF WHEAT PRODUCTS OF $4\frac{1}{2}$ BUSHELS

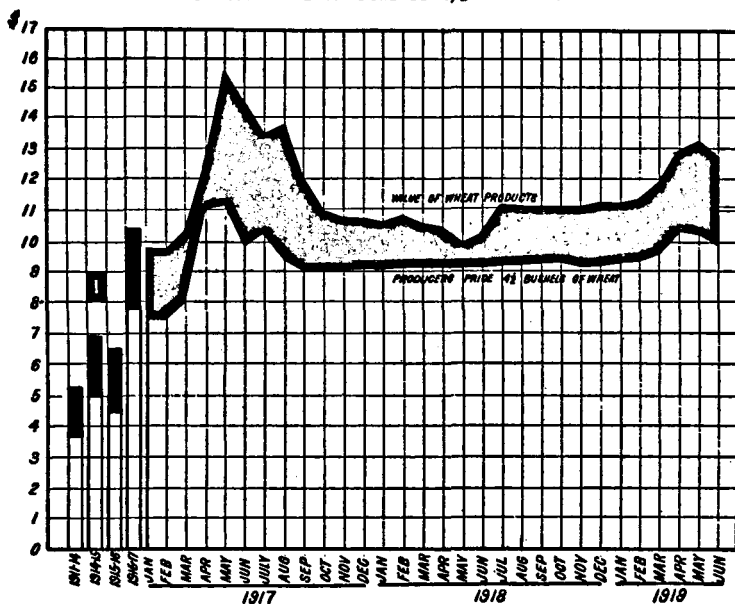


CHART 3.—SPREAD BETWEEN FARMERS' PRICE RECEIVED FOR $4\frac{1}{2}$ BUSHELS OF WHEAT AND MINNEAPOLIS MILL-DOOR PRICE OF FLOUR FROM SAME

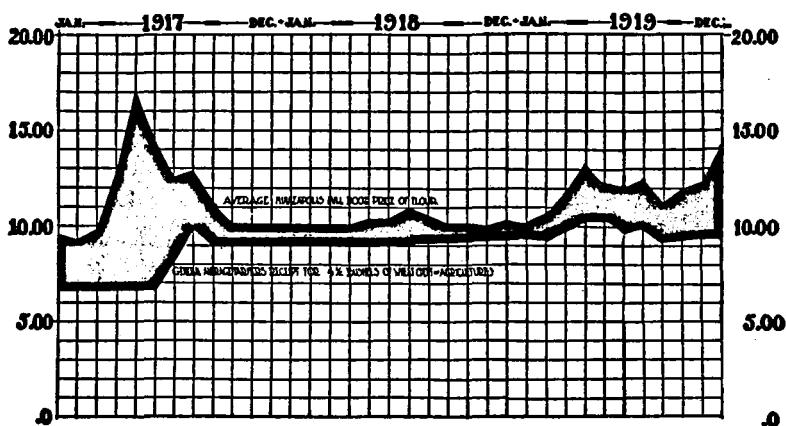


TABLE VI

Period	Price of 4½ Bushels to Farmer	Wholesale Price of the Products of 4½ Bushels				Total Values of Wheat Products	Spread between Prices of Wheat and Wheat Products
		Flour 1 bbl.	Bran 20-35 lbs.	Middlings 12.95 lbs.	Red Dog 8.70 lbs.		
1911-14	\$ 3.718	\$ 4.871	\$.205	\$.139	\$.044	\$ 5.259	\$1.541
1914-15	5.009	6.489	.210	.141	.052	6.892	1.883
1915-16	4.469	6.088	.189	.131	.050	6.453	1.989
1916-17	7.753	9.852	.279	.189	.072	10.392	2.639
1917							
January	7.416	9.215	.293	.186	.076	9.770	2.354
February	7.398	9.069	.332	.211	.079	9.691	2.293
March	8.100	9.631	.354	.225	.077	10.287	2.187
April	11.065	11.619	.393	.253	.083	12.348	1.283
May	11.183	14.880	.334	.229	.083	15.526	4.343
June	9.905	13.894	.267	.211	.088	14.460	4.555
July	10.301	12.750	.331	.273	.101	13.455	3.154
August	9.437	13.069	.311	.259	.107	13.746	4.309
September ...	9.027	11.263	.307	.224	.101	11.895	2.868
October	9.000	10.300	.313	.235	.104	10.952	1.952
November ...	9.041	10.025	.342	.241	.103	10.711	1.670
December	9.085	9.931	.410	.263	.104	10.708	1.623
1918							
January	9.054	9.885	.351	.236	.089	10.561	1.507
February	9.121	10.100	.351	.236	.090	10.777	1.656
March	9.117	9.894	.343	.231	.090	10.558	1.441
April	9.162	9.785	.341	.230	.089	10.445	1.283
May	9.113	9.325	.329	.221	.069	9.944	.831
June	9.144	9.625	.331	.223	.063	10.242	1.099
July	9.203	10.632	.273	.185	.052	11.142	1.939
August	9.203	10.493	.307	.208	.057	11.065	1.736
September ...	9.261	10.490	.303	.205	.058	11.056	1.795
October	9.270	10.502	.299	.203	.057	11.061	1.791
November ...	9.198	10.510	.296	.199	.056	11.061	1.863
December	9.216	10.510	.365	.242	.077	11.194	1.978
1919							
January	9.337	10.300	.492	.315	.112	11.219	1.882
February	9.360	10.550	.403	.260	.098	11.311	1.951
March	9.639	11.212	.391	.252	.091	11.946	2.307
April	10.399	12.215	.390	.268	.096	12.969	2.570
May	10.278	12.419	.378	.291	.103	13.191	2.913
June	9.900	12.012	.347	.278	.103	12.740	2.840

The wheat crop movement for 1917-18 and 1918-19, showing production, total supplies, distribution, and apparent consumption per capita, was as follows:

TABLE VII

Movement and Distribution	1917-18	1918-19
Wheat movement—bushels		
Carryover in all elevators, mills, etc., beginning of year	40,307,000	14,269,000
Carryover on farms beginning of year.....	15,611,000	8,063,000
Crop, government estimate.....	636,655,000	917,100,000
Imports of wheat.....	28,157,000	10,734,000
Total supply	720,730,000	950,166,000
Ground by mills.....	523,085,000	539,058,000
1% loss in mill screenings.....	5,230,000	5,390,000
Exported as wheat.....	34,119,000	181,421,000
Used for seed	89,286,000	98,693,000
*Fed on farms.....	13,000,000	26,593,000
Farm reserves end of year.....	8,063,000	19,644,000
Stocks all elevators and mills end of year.....	14,269,000	37,897,000
Total disappearance	687,052,000	908,696,000
Unaccounted for	33,638,000	41,470,000
Flour movement—barrels		
Stocks all positions beginning of year.....	5,599,000	4,426,000
Flour produced	115,374,000	121,130,000
Flour imported	675,000	38,000
Total supply	121,648,000	125,594,000
Flour exported	23,120,000	29,080,000
Stocks end of year.....	4,426,000	5,707,000
Total	27,546,000	34,787,000
Domestic use	94,102,000	90,807,000
Equals bushel basis bushels used.....	426,564,000	404,091,000
Per capita distribution.....	4.085	†3.895

* Department of Agriculture estimate based on averages.

† After deducting 2,000,000 American Expeditionary Forces.

Flour production, by months, for 1917-18 and 1918-19, with the amount of wheat ground and amount of feed produced, are shown in the following table:

TABLE VIII

Month	1918-19		1917-18	
	Flour Produced	Wheat Ground	Flour Produced	Wheat Ground
July	5,319,000	24,031,000	8,571,363	39,633,243
August	11,248,000	49,676,000		
September	11,363,000	49,876,000	10,528,068	48,029,085
October	10,758,000	47,247,000	13,856,254	65,431,813
November	12,506,000	55,208,000	16,601,204	73,737,012
December	11,044,000	48,674,000	17,063,843	77,611,738
January	12,006,000	53,674,000	10,382,470	46,508,013
February	7,736,000	34,762,000	9,184,772	41,233,192
March	9,370,000	41,493,000	9,049,279	40,778,702
April	10,426,000	47,283,000	6,893,266	31,251,139
May	12,439,000	55,518,000	6,453,925	28,716,496
June	6,915,000	31,616,000	6,784,279	30,155,194
Total, year	121,130,000	539,058,000	115,373,723	523,085,627
Bu. per bbl. of flour	4.450	.....	4.533	.....
Lbs. wheat per bbl.	267.00	.....	271.98	.....
Lbs. feed per bbl.	71.00	.....	75.98	.....
Total feed tons	4,300.130	.....	4,333.047	.....

IX. BAKING INDUSTRY

Because the activities of the Food Administration in stabilizing the price of wheat and in limiting the profits of millers was of little interest to many of the public except as the results were expressed in the price of baker's bread, it was important that everything possible should be done to carry through to the consumer a proper reflection of the stabilized price of wheat established and maintained by the Food Administration. At least 40 per cent of the bread consumed in the United States is obtained from the bakeries. Among the poorer classes in the larger cities of the country the percentage buying their bread from bakeries runs much higher—an estimate based upon reports from New York City shows that 74 per cent of the total number of families buy their bread from bakeries and the greater percentage of these are the poorer foreign elements.

The importance of bread in the diet of the entire population, and especially of these poorer people who buy from the bakeries, rendered imperative the duty of the Food Administration to do everything possible through the regulation of the baking industry to reduce costs and prices. Numerous conferences were held with the War Emergency Council of the Baking Industry, with individual bakers and with others whose business brought them into close contact with the baking industry. As a result of these investigations the Food Administrator in a statement on September 1, 1917, announced:

At the prospective prices for flour it is improbable that a full sixteen-ounce loaf can be delivered to the consumer for less than 10 cents per loaf unless the consumer will join with the bakers and retailers in eliminating needless cost. It may be possible to reduce the cost of bread by about two cents per loaf if cooperation of the bakers, retailers, and consumers can be secured to effect a standardized loaf, and if wasteful practices which have grown up out of competitive conditions can be eliminated, and a reduction in delivery and credit brought about. Some bakers of a large volume and with special delivery conditions, may even be able to increase this saving somewhat.

Perhaps the most important investigation made was that of the Federal Trade Commission at the request of the Food Administrator, beginning August 30, 1917. This was an investigation of the baking industry with particular reference to costs. Two hundred and nine plants were examined in all parts of the United States and were classified regionally and by character of business.

The conclusions and recommendations of the Federal Trade Commission contained in their report made November 3, 1917, may be summarized as follows:

1. Cost could be greatly reduced by standardization. Bakers producing the largest number and kinds of loaves have the highest costs. For a given number of pounds of bread small units require more hand labor, more machine and hand operation, more pans, more oven space, more racks, greater wrapping expense, and greater delivery expense.

2. Regulations requiring only one delivery a day would greatly reduce cost. In many cases the baker delivered twice a day to the same retailer and this as well as other too frequent deliveries might be eliminated.

3. Regulations forbidding the acceptance of unsold bread would prevent one of the greatest and unnecessary wastes of the trade. Retailers who are allowed to return unsold bread order with little care and often purchase too much. This bread when returned is sold for feed.

4. Wrapping of bread, while adding to the cost, has compensations in sanitation and preservation, which makes it inadvisable to forbid the wrapping.

The only method by which the Food Administration could secure an observance of these recommendations and other necessary regulations by the baking industry was to resort to the licensing system. Yet to subject to uniform regulations an industry of such large proportions, consisting of thousands of small units, almost totally without organization, and working under so many diverse conditions as to cost and trade practices, was a task of no small magnitude. A large percentage of the smaller bakers are uneducated, many of them being unable to read and write English. Education and voluntary agreements would be even less effective in these circumstances, however; and if baking costs were to be reduced and the necessary conservation effected, licensing was the only available means. It was suggested that the price of bread to the public might be reduced by a government subsidy, a method which had at this time already been found necessary in France and Great Britain. The Food Administration had been given no authority for such action, and the objection to such a policy was not overcome as in Europe by any disproportionate rise in price. It was furthermore undesirable because it meant that the public would in the final analysis bear the cost of the system and that the wasteful trade practices could not be eliminated and the necessary conservation measures could not be made effective.

On November 7, 1917, the President issued a Proclamation announcing that all persons, firms, corporations, and associations using ten or more barrels of flour and meal per month in the commercial manufacture of bakery products must procure a license from the

Food Administration on or before December 10, 1917. About 26,000 licenses were issued under this Proclamation.

During December and January it developed that there were many bakers using less than ten barrels of flour and meal per month whose disregard of the regulations under which the licensed bakers were operating was unfair and was a cause of constant annoyance to the Food Administrators, to the licensed bakers, and to the public. For these reasons it was decided to extend the licensing requirements; and on January 30, 1918, the President issued a Proclamation requiring bakers using three or more barrels of flour and meal per month to procure a license. This second Proclamation included many of the hotels and other public eating places which did their own baking. In all there were licensed by the Food Administration 38,800 bakers. The first regulations, effective December 10, 1917, governed only the manufacturers of bread and rolls.

The most important of these regulations were the ones forbidding the return or exchange of unsold bread and the standardization of the weight of the loaf. The standardization rule is considered more at length herein under the discussion of prices. The other rule read as follows:

The licensee shall not directly or indirectly accept, under any guise or arrangement whatever, returns of bread or other bakery products, from any person, nor make cash payments, nor allow credit, to any retailer or other person for any unsold bread or other bakery products; nor shall the licensee exchange any bread or other bakery products for other bread or other bakery products previously sold by him.

This rule eliminated a practice which was a source of almost universal complaint among the bakers and which was found to be one of the principal causes of increased baking costs. The custom had grown up in the trade of allowing the retailers to return or exchange their unsold bread at cost, and this returned bread was either sold for feed or wasted by the baker. The result was not only a great waste of bread and a loss to the bakery but the encouragement of the retailer in the practice of ordering more bread than his patronage called for. The enforcement of this Food Administration rule, while causing some inconvenience to the consumer at first, caused the retailer to order his bread with the same care that he ordered perishables which he could not return; and it resulted in a saving of bread and bakery expense which in the aggregate was enormous.

In addition to these rules the most important result accomplished

by the licensing of the bakers was the conservation effected through the various conservation rules to which they were subjected. By the rules of December 10, 1917, the amount of sugar and shortening used was limited to an average per barrel of flour in the total production of the baker.

During December and January, bakers of other products, such as sweet yeast-dough goods, pies, cakes, pastry, etc., were investigated and representatives from these trades were called in conference. On February 1 new and complete regulations governing the entire baking industry were issued. At that time bakery products were divided into five classes as follows:

- Class 1. Bread and rolls
- Class 2. Sweet yeast-dough goods
- Class 3a. Crackers
- Class 3b. Biscuits, cookies, and ice cream cones
- Class 4a. Cakes
- Class 4b. Pies
- Class 4c. Fried cakes
- Class 4d. Pastry
- Class 5. Quick breads, Boston brown bread, batter cakes, and waffles

The sugar limitation in bread was announced and the limitation on the quantity of milk which had been prescribed by the rules of December 10 was removed, and the baker was forbidden to sell bread containing milk at a greater price than bread which did not contain milk.

The substitute and conservation rules which made up the greater number of the baking rules are considered more in detail herein under the general discussion of conservation measures with respect to wheat.

The lack of understanding on the part of the very large percentage of the bakers resulted in many violations of the rules, particularly of the substitute and other conservation rules. The fact mentioned above that many bakers were uneducated and many others cannot read or understand English made it very difficult to obtain a general observance of the rules, notwithstanding the fact that formulas as well as interpretations of the rules and recommendations and further suggestions for conservation were sent to all licensees. Near the end of March a definite plan was adopted for the education of

the baking industry. At that time the National Bakers Service Board was established at Washington. The plan of the National Service Board was to parallel the state and local organizations of the Food Administration. A State Bakers Conservation Board was organized in each state, its chairman and members being approved by the State Food Administrator. This State Board in turn appointed district captains and county or local lieutenants, with the approval of the State Food Administrator. This Board acted as a clearinghouse for formulas, methods, recommendations, and suggestions for the entire industry. It worked through the State Boards, which in turn transmitted the information to the district captains and eventually the county or local lieutenants. There was a lieutenant in every county, city, or ward, depending upon the number of bakers to be served. The lieutenant explained verbally to the bakers the regulations and all methods, and when necessary demonstrated the best methods of manufacturing bread according to the regulations. Through this plan it was possible not only to police the industry but to assure a better observance of the rules through a better understanding of them.

Prices.—One factor in the baking industry which is not generally appreciated and which should be understood in considering the price of bread is that the weight of the loaf is quite as important as the price of the loaf. For a century or more the practice in the baking industry had been to reflect small changes in the price of flour by changing the weight of the loaf. The price for which bread sells being a comparatively small one measured in a few cents, and the cost of flour being only about half the cost of the finished loaf, it requires a considerable increase or reduction in the price of flour to justify the baker in subtracting or adding a cent to the selling price of his loaf; and any fractional change in price is absorbed by the retailer. Furthermore, the public was accustomed to buying the loaf at a certain uniform price—formerly the five-cent loaf—and that price was accepted as the proper price for “a loaf of bread.” The desirability of meeting this customary and generally prevailing price was an additional reason for the baker reflecting the change in price of flour by changing the weight of the loaf. This system had its undesirable as well as its desirable features, both for the public and for the baker. A slight change in weight of a loaf went unnoticed by the customer who merely bought “a loaf bread”; and if this change was an increase, the baker got no credit for a reduction in

price, since the price of the loaf remained the same. On the other hand, a slight decrease in the weight also went unnoticed by the buyer and he received less value for his money without in most instances being aware of it.

The investigation of the Federal Trade Commission showed that bread was being sold, by the 209 bakeries investigated, in thirty-eight different weights and sizes and that there was likewise a great variety of prices applying to different shapes and sizes. The price for the one-pound loaf, however, was found to be practically the same in all localities, i.e., 8 cents wholesale and 10 cents retail.

The Food Administration decided, therefore, that a standardization of the weight of the loaf would result not only in a decreased cost to the baker because of the reduction in hand labor, number of pans, oven space, etc., but would also assure the consumer of a more uniform and reliable value in the loaf customarily bought. It was certain that with a standard loaf, although the price of the pound loaf might not be changed, the actual cost to the consumer of his bread could be measurably reduced. The following was the standardization rule promulgated:

No licensee shall manufacture bread except in the following weights, which shall be net weights 12 hours after baking:

1 pound	4 pounds
1½ pounds	5 pounds
2 pounds	6 pounds
3 pounds	or other pound weights

Variations at the rate of 1 ounce per pound over and 1 ounce per pound under the above specified unit weights are permitted in individual loaves, but the average weight of not less than 25 loaves of any one unit of any one kind shall be not less than the weight prescribed by these rules and regulations for such unit.

The licensee may only bake twin or multiple loaves on the following conditions: If the twin or multiple loaf is wrapped at the bakery and sold to the consumer wrapped and undivided, the loaf must conform to the above weight requirements; if the twin or multiple loaf is unwrapped or divided before being sold to the consumer, each unit of the loaf must conform to the above weight requirements.

The three-quarters of a pound loaf was added on February 21, 1918, as a conservation measure, but this was not found to be a popular size and was not generally adopted.

After December 10, 1917, it was hoped that the decreased cost of manufacture due to the standardization of weight and formula

would permit a reduction in price; and in certain localities a reduction was made without any cost investigation.

During January, February, and March, 1918, wholesale prices remained the same while retail prices fluctuated slightly according to the locality and class of store in which the bread was sold. By March the bakers were required to use 20 per cent of substitutes, which cost 20 per cent to 40 per cent more than wheat flour, in spite of the fact that the cost of wheat flour itself rose slightly. This, of course, was enough to force the baker who had reduced his price in December to increase it again in March. In April the price of substitutes declined, but the wages of labor increased. This brought about a general increase in wholesale prices in all localities where the bread before this time was selling at a low margin or at no profit at all. The result was that the wholesale price of 8 or 8½ cents generally prevailed but the retail price was not increased above 10 cents.

Bakers desiring to raise their prices were required to furnish a detailed statement of their bread costs which should show the reasons for the rise in price. After comparative statements were thoroughly checked, the State Administrators, if they found the raise justified, notified the baker that the raise would not be disapproved. Where statements showed that the prices were not warranted, the bakers were not allowed to raise and statements showing unfair profits resulted in orders requiring the baker to reduce his price. Investigations of a more general and serious nature were turned over to the Federal Trade Commission.

Wholesale prices were practically standardized at 8 and 8½ cents per pound, and a reduction of high retail bread prices was so successful in most states that on September 20, 1918, an announcement was sent to all State Administrators that the maximum fair retail price for bread should be 10 cents for a one-pound loaf and 15 cents for one and one-half pound loaves. In those sections where the wholesale price was 8 and 12 cents the fair retail price was published as 9 and 14 cents, respectively. These prices prevailed until the Food Administration relinquished control of the baking industry.

From the foregoing it will be seen that the results as to prices achieved by the control over the baking industry did not appear in any general reduction in the price of the loaf. However, the standardization of the weight and the assurance to the public through this regulation that they were at all times getting a standard and full-weight loaf meant a very considerable actual reduction in the cost of

bread to the consumer. The excessive prices were reduced and the standard price for bread was maintained throughout the country with only the necessary differentials in regions of higher transportation and other costs. The change in methods and in baking formulas, as well as the increase in the cost of labor and for a time of the substitute flours, militated against the efforts to bring about a further reduction in price.

The great accomplishments for conservation achieved through the regulation of the consumption of wheat, fats, and sugar are considered herein under the discussion of conservation measures.

X. SUGAR

THE PROBLEM OF SUPPLY

The problem in sugar was again largely a problem of ships. Before the war, France and Italy were nearly self-supporting in regard to their sugar supply. The United States, Canada, and England were importing countries and relied for their imports chiefly upon three sources: first, Germany and her neighboring powers; second, the West Indies; and, third, the East Indies.

Upon this peace-time arrangement the effect of the war was sweeping. Before the war Italy had been producing more than 200,000 tons annually; by 1917 that production had fallen to 75,000 tons. France had manufactured 750,000 tons of beet sugar each year—enough to leave a margin for export—but by 1917 production in France had decreased to 210,000 tons. In the matter of sugar supply then, the war turned France and Italy from self-supporting countries into countries having to depend largely upon foreign sources of import.

A simultaneous effect of the war was to shut off completely one of the three chief sources of import. In times of peace Germany and the countries around her had sent great quantities of sugar to foreign purchasers—1,400,000 tons in a single year. Not only was this supply from Germany cut off by the war but Germany also absorbed more of the output of neutrals near by.

The table below shows the effect of the war upon the peace-time arrangement of the United Kingdom for its sugar supply. It will be seen therefore that by the stoppage of the supply of the Central Powers, France, Belgium, and the Netherlands, the United Kingdom was cut off from the source of 70 per cent of its normal sugar supply.

When the Food Administration was created in August 1917 the world's supply of sugar was probably not in a large degree below normal; but owing to the reduced domestic production in France and Italy and to the wall around Germany, the three western Allies were forced to depend upon West and East Indian sources for 1,925,000 tons in order to maintain a normal supply. Shipping conditions made it impossible for that to be maintained at the normal. By August

UNITED STATES FOOD ADMINISTRATION

PREWAR SUGAR SUPPLY OF THE UNITED KINGDOM

Source	Prewar Annual Average Amount Obtained from Each Source (short tons)	Percentage of Total by Source
Germany	783,171	38.55
Austria-Hungary	319,671	15.73
Netherlands	191,673	9.43
Java	123,400	6.07
Cuba	142,329	7.01
Brazil	29,205	1.44
Peru	45,404	2.33
British West Indies	39,253	1.93
British Guiana	24,139	1.19
Mauritius	37,034	1.82
Haiti and Dominican Republic ...	40,464	1.99
Belgium	77,936	3.84
France	43,642	2.15
United States	23,167	1.14
All other countries	111,156	5.47
Total	2,031,624	99.99

of 1917 England had reduced her household ration of sugar to a basis of two pounds a month, and France hers to a little more than half that much.

The question facing the United States was: Would we force the Allies to rely more and more upon the East Indies or permit them to draw more freely from the West? In Java and other East Indian islands there was a large quantity of sugar for export; but to reach that sugar required three times as long a voyage and therefore three times as much tonnage as the movement of sugar to Europe from the West Indies. This meant a great reduction in the number of men and in the amounts of munitions, wheat, and other absolutely essential commodities which could be shipped for use against Germany. Of course in these circumstances our policy could only be to share the West Indian supply to the greatest possible extent with the Allies.

The effect of the competition between the United States, the United Kingdom, and France for this sugar supply of the Western Hemisphere was not different from the effect of their competition for other food supplies in the markets of the United States. Between June 1, 1917, and August 7, 1917, the price of raw 96° centrifugal sugar duty paid at New York increased from \$5.89 per hundred pounds to \$7.52 per hundred pounds. The following table shows the prices prevailing in other years on similar dates:

PRICES OF SUGAR IN CENTS PER POUND, DUTY PAID, AT NEW YORK

		1913	1914	1915	1916	1917
June	1	3.33	3.38	4.95	6.33	5.89
July	1	3.48	3.32	4.95	6.40	6.52
August	1	3.65	3.45	4.64	6.21	7.02
August	7	3.73	4.26	4.39	5.75	7.52

The consumption of sugar per capita had been gradually reduced in the Allied countries with the developing shortage. The per capita of sugar consumed in the United States in 1917 was seven pounds a month—more than twice as much as that consumed in any of the Allied countries. Moreover, despite the advancing prices, just as in the case of flour, the amount of sugar being used or stored away in the United States was actually increasing. In the first six months of 1916 this amount was 2,394,261 tons; for the same period of 1917 it was 2,650,527 tons, an increase of 10.7 per cent. This increase was probably due to a combination of several different factors: to the higher wage level in many industries and the consequently higher standard of living; to a wider interest and consequent increase in home canning; to household hoarding in the months of February, March, and April upon the general alarm created by the declaration of war. But to whatever cause the increase was due it was evident that the use of sugar in this country was beyond the limits of genuine necessity.

The problems in sugar faced by the Food Administrator were therefore: the regulation of price, in order to prevent a runaway market such as was apparently started in the summer of 1917; and the increase of surplus through reduction in consumption and the stimulation of production. These problems involved co-operation with the Allies in purchasing sugar to control price and to conserve tonnage as well as control over domestic refiners, dealers, etc., and the encouragement of the domestic producer.

Embargo on exports.—In order to prevent supplies of sugar from going elsewhere, on the advice of the Food Administration an embargo on exports from the United States was put in force on August 27, 1917, and on October 1, 1917, the Cuban government co-operated by placing an embargo on all its sugar except to ourselves and the Allies. In the meantime the limitation of the consumption of sugar was one of the important parts of the conservation program urged by the Food Administration.

SUGAR CONTROL

The problem of sugar control was probably more complicated than that of any other commodity because of the widely different character of the many sources of supply and the varying seasons in which they reached the market. Raw sugar from Cuba furnishes more than half of the sugar consumed each year in the United States. The Cuban cane crop is harvested, and sugar is manufactured, mainly in the months of January to June; and during these months about 70 per cent of the annual receipts have ordinarily reached the United States. The same seasonal production applies practically to Hawaii, which sent 586,000 tons to the United States in 1916, or about 14 per cent of the American supply, and to Porto Rico, which supplied some 400,000 tons. The Louisiana crop, consisting of some 300,000 tons, is produced at an earlier date than the Cuban, and because of the smallness of the crop is rapidly consumed during the months of December, January, and February. During the war, because of the comparatively higher prices, a considerable part of this crop was sold in a semirefined state. The American beet crop, produced in California, Colorado, Michigan, and a few other states, supplies approximately 800,000 tons. It becomes available about October 1. The price of sugar has always been based on New York or other seaboard price plus freight rates to the interior, so that beet sugar sold in the interior brings a higher price than if transported to seaboard. The result is that the beet crop has always been distributed in the Middle West, for the most part west of Chicago, and its distribution has been spread over the entire year. Throughout a considerable territory cane and beet have always competed, and it is a practical necessity that these two products, based on entirely different costs of production, should reach the consumer at the same price. Furthermore, the control of one without controlling the other, and all supplies of the other, would have produced both administrative difficulties and charges of unfairness.

An actual shortage existed in sugar in the fall of 1917 in many cities. Wholesalers' and retailers' stocks were exhausted, and the price would certainly have gone to 20 cents a pound and set that basis for the new crop unless some price control had been exerted greater than that conferred by regulation. It was also essential that some steps be taken to bring the new beet crop further East, and perhaps even to the Atlantic seaboard, to fill the gap until the new Cuban crop became available. Sugar control during the first year was there-

fore based on two sets of uniform agreements, one with the beet sugar manufacturers and the other with the cane refiners.

In the latter part of August, representatives of 80 per cent of the domestic beet-sugar industry met in conference with the Food Administration. These manufacturers voluntarily agreed to the price proposed by the Food Administration, that is, \$7.25 per one hundred pounds, plus freight charges from seaboard. They further agreed to permit their sugar to be distributed by a committee of the Food Administration, to any point in the country where it might be required, regardless of the loss inflicted. A financial arrangement which would involve the distribution of this loss between the different manufacturers in proportion to their output was agreed to. This effected at once a stabilizing influence on the entire country and effected a reduction of about 1½ cents a pound from the existing retail prices, with a saving of more than \$20,000,000 to the consuming public between October 1 and the end of the year, even assuming that no further rise in price would have taken place. The cane refiners also co-operated in maintaining this price on the little remaining cane sugar available.

Almost at the same time the cane refiners entered into a uniform agreement that they would purchase raw cane sugar, of the new crop, only through the agency of the Food Administration. To carry out this arrangement, the Food Administration organized the International Sugar Committee, consisting of two representatives of the Royal Commission on the Sugar Supply which bought for all the Allies, and three Americans, including the head of the Sugar Division. Controlling the purchase by the American refiners and the Allied governments, this Committee had a monopoly of sugar buying in Cuba and was able in effect to name the price which should be paid for Cuban raw sugar of the 1918 crop. It was, of course, essential that this price should be remunerative and satisfactory to the Cuban producers and to the other sources of raw sugar.

After careful inquiry an agreement was reached between all of the agencies interested in the marketing of the new Cuban crop, the essential terms of which may be summarized as follows: The United States and the Allies agreed to purchase, as they might require, sugar produced in Cuba during the crop season of 1917-1918 up to a quantity of 2,500,000 tons of 2,240 pounds each.

About one-third of this amount was to be shipped to Europe at a price of 4.60 cents a pound f.o.b. Cuban northern ports, or 4.55

cents a pound f.o.b. south side ports, basis 96° centrifugal sugar, subject to the conditions of the usual form of contract. England's Commission on the sugar supply agreed to use its best efforts to have vessels in Cuba lift this sugar as follows: 30/50,000 tons not later than January 15; 50,000 tons not later than January 31; and after that at the rate of about 80/100,000 tons a month from February 1.

The remaining two-thirds was to be shipped to American refiners at the price of 4.98½ cents a pound c.i.f. United States ports, subject to refiners' contract terms. Shipments to this country were to be made as soon as possible, with not less than 2 per cent of the amount to come during December 1917 and the balance in equal monthly shipments from January to November, 1918.

The right was reserved to order larger quantities shipped in any month to the United States and Europe if tonnage and sugar were available.

An option was given for the purchase of part or all of any balance of sugar available at Cuban ports beyond the 2,500,000 tons named. Options were to be declared by the fifteenth of June, July, and August, 1918, respectively—the declaration at any date to be up to 250,000 tons, and each producer to participate in the options in proportion to his allotment of the original 2,500,000 tons.

A further option was provided (to be declared by August 15) for the balance of the crop already produced during the crop year 1918.

It was agreed that sales with the consent of the Cuban government might be made, on terms not inconsistent with the terms of this agreement, to Spain or to Pan-American countries, up to a total of 50,000 tons.

In the same agreement with the cane refiners, a maximum margin between the cost of raw sugar and refined was fixed, based on an examination into the cost and profit of refining before the beginning of the war in Europe. This margin had averaged about 85 cents per hundred pounds but had risen to \$1.84 before the Food Administration came into office. The figure of \$1.30 was finally arrived at, by calculating the increased cost to the refiner plus the average profit margin over cost for five years prior to 1914. The reduction from \$1.84 to \$1.30 would have saved the public more than \$20,000,000 if it had been in effect the first nine months of the year.

In view of the purchase by all refiners through the International

Sugar Committee, and the elimination of competition and buying, it was necessary to fix the proportion which each cane refiner was to receive. To accomplish this purpose, and to insure general co-operation, the Food Administration organized a committee made up of American refiners, and on October 26 this Committee fixed the proportion of distribution of sugar on the following basis:

	Percentage
American Sugar Refining Co.	40.650
Arbuckle Brothers	7.000
California & Hawaiian	4.803
Colonial Sugars Co.	2.330
Federal Sugar Refining Co.	9.605
William Henderson	.960
Imperial Sugar Refining Co.	1.513
W. J. McCahan	2.402
National Sugar Refining Co.	12.007
Pennsylvania Sugar Co.	4.802
Revere Sugar Refining Co.	.960
Savannah Sugar Refining Co.	2.402
Warner Sugar Refining Co.	7.204
Western Sugar Refining Co.	3.362

This basis was to be subject to revision whenever the Committee found it necessary—though the agreement provided that no refiner should be allotted less than two hundred tons a day for every day his refinery was in operation.

The result of the refiners' agreement was to practically insure the price of \$7.25 per one hundred pounds, seaboard basis, although this was subject to some variation with the slight difference in cost of the raw sugar purchased by the International Sugar Committee.

Perhaps the most difficult problem, however, arose with the Louisiana sugar. The cost of production in Louisiana was higher than that of any other sugar consumed in the United States. The manufacture of the sugar was mainly undertaken by the producers themselves, whose profits were not subject to regulation. The high prevailing prices for sugar naturally excited the Louisiana producers to expect these or higher prices for their crop.

Since the beet-sugar producers had all agreed to maintain a price of \$7.25, seaboard basis, however, despite the shortage and possible opportunity of famine profits, and since the price to be paid for Cuban sugars after January would not exceed this figure, it seemed particularly desirable to attempt a stabilization of prices in the case of Louisiana cane sugar. Accordingly, on October 6, 1917, the Food

Administrator sent to the Louisiana producers the following telegram:

We are, as you know, making an earnest effort to protect the American consumer from speculation and extortion in sugar at a time when we are parting with our national supplies to protect the ration of the French people until Cuban sugar is available. The French have reduced their ration to only five hundred grammes per month per person or equal to one pound per month or one half ounce daily. This is to be compared with our American consumption of four ounces daily or seven pounds per month. The beet sugar producers have patriotically agreed that they will not sell their sugar for more than seven dollars twenty-five cents per hundred pounds, less two per cent, New York basis. To effect these ends of protection to our millions of people and to help against parting with our margins to supply the French, we need similar action by the Louisiana producers. We have agreed with the refiners that they will limit refining charges to the pre-war average plus the actual increase in expenses due to the war. I wish to appeal to the Louisiana producers that they should also agree to sell their sugar upon the same basis as the beet sugar producers; in addition that we endeavor to secure to them the base price at New Orleans the same as that at New York for all sugar refined in New Orleans. This patriotic service will be a signal demonstration to the country not only of the desire of the industry to national service but the advantage of home industry in sugar.

As a result of this message a conference was held in Washington several weeks later between the Food Administration and representatives of the Louisiana producers. It was pointed out by these representatives that to arrange sales at too low a price would have the effect of discouraging production. Comparative costs were rising to the American producer, particularly because of the better wage paid to American labor than was being paid in Cuba, Porto Rico, and the Philippines. On the other hand, the dangers of a high price were evident. If, for instance, in the interests of the Louisiana producers, the price level of all sugars was raised 3 cents a pound, the American consumer would have been taxed \$60 a ton, and on our total supply of 4,250,000 tons this would have meant \$255,000,000. The Louisiana producers put only 125,000 tons of refined sugar on the market. Therefore they would gain \$7,500,000 from a 3-cent rise in price at a cost to the country of \$255,000,000. This dilemma, which was met in 1918 by a purchase of sugar through the Sugar Equalization Board, had to be met at this time through a voluntary agreement with producers and refiners.

After a two-day conference the Food Administration agreed to the compromise of \$6.35 for raw sugar. This price would enable the refiners on the Atlantic seaboard where this sugar was mostly to

be consumed, pending the arrival of the Cuban crop, to sell at the steadily reducing price, starting from \$8.35, the actual market price at the time, and diminishing to the \$7.25 basis by February 1 when the Cuban crop was fully available. The Louisiana producers acquiesced in this price, but the shortage of refined sugar was only partially relieved because the producers sold the greater part of their crop in the semirefined state to confectioners and others who were willing to pay a comparatively higher price.

The Hawaiian and Porto Rican sugars followed the Cuban prices, and during the entire year from October 1, 1917, to October 1, 1918, the price of sugar remained practically stable at \$7.25 per one hundred pounds, seaboard basis.

THE 1918-19 CROP (SUGAR EQUALIZATION BOARD)

The price problem.—The demand for sugar and the necessity of conserving import tonnage made it highly desirable that our domestic sugar production should be encouraged as much as possible. The reduced labor supply, the high prices paid for other crops, and the high cost of materials militated against an increased production and it was essential that affirmative measures be taken if the normal production was to be maintained. As early as October 1917 the Food Administrator sent a circular letter to all sugar-beet farmers appealing to them to maintain, and where possible to increase, the production of sugar beets.

It was evident, however, that the beet producers were not willing to contract with the sugar companies because they felt they were not receiving a proper price. To meet this situation, in the spring of 1918 the Food Administrator appointed local commissions in the principal beet-growing states. These commissions summoned witnesses, conducted exhaustive investigations, and from the evidence thus collected formulated reports for the Food Administrator. The beet-sugar companies were urged to accept the decisions of these commissions and the Food Administrator promised that the government would undertake to readjust prices for sugar made from the higher-cost beets so as to cover such increased cost.

The following reports were made by the commissions appointed: The California commission recommended "that the price for sugar beets should be on a basis of \$8.25 per ton for fifteen per cent beets, the price to increase or decrease one-fifteenth for each one per cent the sugar content increased or decreased, and the price also to in-

crease or decrease a dollar a ton for each cent the price of sugar increased or decreased above or below seven and one-half cents per pound."

The Colorado Commission recommended "a minimum of \$9.00 per ton on a sliding scale basis which will offer \$9.00 per ton for sugar beets testing over 12 and under 14 per cent, and which advances the price at the proportionate value of sugar at the minimum price when the analysis shows a percentage of sugar above this fixed minimum at the rate of 64 cents for each one per cent or 32 cents for each one-half per cent above that minimum, and which shall decrease the price at the same rate below that fixed minimum where the analysis runs under 12 per cent. We do not consider a flat rate equitable, although farmers generally favor the flat rate. If your Administration decides, however, that a flat rate would meet the extraordinary circumstances better than an equitable sliding scale, we recommend \$10.00 as the figure to control that flat rate."

The Nebraska commission reported "the cost of producing sugar beets has increased very rapidly, but the price paid for beets has increased less than has the price paid for hay and cereals. To meet this high cost and stimulate beet production, your Commission recommends that the growers be paid \$10.00 per ton at the dump for beets, except in those areas located at some distance from the factory where the cost of production was shown to be lower than the average cost, where we recommend a price not less than \$9.50 per ton."

That the beet-sugar factories did observe the decisions of these commissions in the purchase of beets is indicated by the tabulated report of the Department of Agriculture on the average prices paid farmers for beets in 1918 in the various states as compared with other years (Table IX).

The United States Tariff Commission also gave valuable assistance in the determination of sugar production costs.

From the data submitted by the producers to the Tariff Commission and the Food Administration it appeared that

1. A price of 11½ cents per pound for seaboard-refined sugar would have been essential in order to cover all producers and yield a profit of a cent a pound to the high-cost producers.

2. Nine cents a pound would have been essential to cover approximately 85 per cent of the production and yield a profit of a cent a pound to the high-cost producers of the group.

3. The preceding year's price, 7.45 cents a pound, would have

covered only 30 per cent of the production, yielding a profit of 1 cent per pound to the high-cost producer.

TABLE IX
AVERAGE PRICE PAID FOR BEETS PER TON

State	1918	1917	1916
California	\$ 9.95	\$7.60	\$6.30
Colorado	10.02	7.28	6.06
Idaho	10.00	7.06	6.16
Michigan	10.08	8.04	6.14
Nebraska	9.96	7.22	....
Ohio	10.03	7.18	6.83
Utah	10.01	7.04	5.73
Wisconsin	10.00	8.81	....
Others	9.86	7.28	6.18
United States	10.00	7.39	6.12

It was evident, therefore, that a price of at least 9 cents a pound for refined sugar was necessary in order to maintain the beet-sugar production and this price would only maintain it if the lower cost producers increased their production enough to offset the decrease caused by the elimination of those who could not produce at 9 cents.

The domestic cane-sugar producers of Louisiana were also faced with rapidly increasing costs. It appeared from figures submitted to the Tariff Commission and the Food Administration by the Louisiana producers that the Louisiana industry could not be maintained on a price basis of less than 10 cents per pound for refined sugar.

The Cuban costs of production, while increasing, were very much less than these costs in the United States. The Cuban Mission, appointed to negotiate a price for the 1918-19 crop, represented that a price of 5.60 cents f.o.b. at the north ports of Cuba and 5.55 cents f.o.b. at the south ports would be required to sustain and stimulate the production of sugar for the 1918-19 crop, as compared with 4.60 cents at the north ports of Cuba and 4.55 at the south ports for the previous year.

The price situation as it appeared in June 1918 may therefore be summarized as follows:

1. Cuba, which normally supplied the United States with 49.8 per cent of the total annual supply, requested a basic price for raw sugar of 5.55 cents per one hundred pounds f.o.b. Cuba. This price was considered sufficient to stimulate production in Cuba.

2. The domestic beet-sugar industry, which supplied 15.97 per cent of the total annual consumption of the United States, required a basic price of at least 9 cents per pound for refined sugar in order to maintain production.

3. The domestic cane industry in Louisiana, which supplied 6.27 per cent of the total annual consumption of the United States, required a basic price for refined sugar of about 10 cents per pound to maintain the production.

4. The Hawaiian industry, which supplied 13.66 per cent of the total annual consumption, required about the same price as the domestic beet industry.

On June 15, 1918, Mr. Hoover wrote to the President calling attention to the necessity for making a change in the method of handling the 1918-19 sugar crop and outlining the difficulty of the situation created by the difference of costs in the fields furnishing our domestic supply. This difficulty he summarized as follows: "We therefore arrive at a disparity in these situations for which we must find some solution. If we advance the price of Cuban sugar to a level that will carry out our assurances to the domestic producers this year and stimulate it for next year, we will be paying to the Cubans from one-half to one cent a pound more than is necessary to maintain their production with a fair profit. This will mean a toll to the American people of from \$20,000,000 to \$40,000,000. There is a further complication that the Allies, who buy a considerable part of the Cuban crop, will object to imposing upon themselves an unnecessary tax of \$20,000,000 in favour of Cuba." Mr. Hoover further pointed out: that our supplies had been shortened beyond expectations and it would be necessary gradually to reduce sugar consumption from July 1 onward, that the certificate system of distribution (above described) would have to be put into operation, and that the expense of this system would be considerable, for which the Food Administration had no adequate appropriation. He therefore suggested as a solution of the problem the formation of a corporation modeled after the Grain Corporation and empowered to buy and sell sugar.

The Food Administration had no authority to buy sugar under the Food Control Act, but the President adopted the recommendation of the Food Administrator and from his own emergency funds set aside \$5,000,000 for the purchase of the capital stock of such a corporation. The United States Sugar Equalization Board was in-

incorporated July 11, 1918, in the state of Delaware, and the first meeting of the board of directors took place on July 18, 1918.

On July 11, 1918, the Food Administration made the following announcement:

The President has approved the formation of a Sugar Equalization Board by the Food Administration. The Board is to be composed of Herbert Hoover, chairman; George M. Rolph, president; Directors: Professor F. W. Taussig, of the United States Tariff Commission; Theodore F. Whitmarsh, George A. Zabriskie of the Food Administration; Clarence Woolley of the War Trade Board; William A. Glasgow, Jr., Chief Counsel of the Food Administration. The office of the Board will be in Washington.

The purposes of the Board are to equalize the cost of various sugars and secure the better distribution. The arrangements will facilitate joint dealing with the Allies in foreign sugars and the adjustments of differentials in overseas freight rates. Under certain circumstances, it may be advisable to acquire the production of some beet sugar factories that cannot under the present price of beets be sold to the public at a reasonable price. The Board will take charge of the distribution plan initiated on July 1, and will conduct this plan at the expense of the Board. The Board will be incorporated to the extent of \$5,000,000 of capital which will be supplied by the President from his special funds, in order to enable it to deal with facility in foreign sugars and otherwise and the whole stock will be held by the President for the United States Government. The object is to absorb the high peaks of cost in sugar production and to make a small margin on the low cost of certain foreign sugars which may be purchased and thus secure an equalization of the price to the public on a lower level than will otherwise be possible. The arrangements will further secure an even distribution of the sugar throughout the United States. It is expected that any profits will be equalized to the consumer over the year's operations. . . .

SOLUTION OF THE PRICE PROBLEM

The first problem of the Board was to determine the prices to be paid to the various sugar producers for the raw sugar. The Cuban Mission contended for a price \$5.60 per one hundred pounds as the price necessary to return a fair profit to the Cuban producer. The Board took the position that a price of \$5.25 per hundred would be sufficient. After negotiation covering a period of more than a month, a contract was closed with the Cuban Mission on September 13, 1918, at \$5.50 per hundred pounds f.o.b. Cuban ports.

The question of the refiner's margin had also to be determined anew. Mr. Oscar Straus had been appointed by the Food Administrator earlier in the year to investigate the cost of refining and with the assistance of the United States Tariff Commission he had made a thorough investigation. His report, which was before the Board

as a basis for its decision on this point, was: (1) that the \$1.30 margin in existence from January 1 to July 1, 1918, gave a fair and adequate profit; (2) That "if conditions should remain the same for the remainder of the year no additional margin would be justified, but that the possibilities of lack of raw sugar, increase of wages, and in cost of materials, fuel, and containers would have a bearing on the proper decision"; (3) "that since he could not decide upon the probability of these contingencies he referred the settlement of this matter to the Food Administration."

Using figures submitted as to increasing costs of labor and materials and the probable amount of raw sugar available for melting in the period August 1, 1918, to December 1, 1918, the Board decided that an increase in the refiner's margin was justified; and on August 25 the Food Administration announced that from August 1, 1918, the margin allowed would be \$1.45 per hundred pounds.

The minimum basic price for sugar was now established. The new Cuban price with duty, freight, and insurance added, plus the new refiner's margin, would net a price of refined sugar at seaboard points of 8.49 cents. This price could, however, not be established as the basic price to be maintained by the Board for two reasons: (1) It would have been unsatisfactory to the domestic beet and cane producers, since it was 33 cents per hundred pounds below the minimum price requested by the beet-sugar producers and \$1.05 below the minimum price requested by the cane producer. (2) There would have been no differential accruing to the Board for financing the distribution of sugar. The Board therefore decided to adopt a basis of 9 cents for refined sugar for the whole country (8.82 cents net cash), the differential of 33 cents per hundred pounds on foreign sugars to be turned over to the Treasury of the Equalization Board. The refiner's price for sugar was made up as follows:

	Net Cash
Basic price for refined sugar, cane and beet, 9 cents per pound	8.82 cents
Refiners' margin	1.54
Basic price for all raw sugars, paid to the Board by refiners..	7.28
Margin to the Board	.33*
Cost of raw sugar to the Board	6.95
Freight, insurance and duty	1.45
Basic price of Cuban sugars f.o.b. Cuba	5.50

* As it actually turned out in 1919, the margin was increased to 38 cents owing to the elimination of the war risk insurance of 5 cents per hundred pounds.

A further problem before the Board was the time and method of putting the new basic price into operation. The new-crop beet sugar was ready for the market by September and it was essential that an agreement as to its price and sale should be reached at once so that it might move freely into the market and relieve the condition of scarcity. If the new price was made effective immediately, however, the result would have been that the price of all sugar on the market, including the old foreign crop, would have risen to the new price and the holders of the old-crop sugar would have unjustly profited by the increased price. To avoid this the Board purchased all sugars in the refineries and cane- and beet-sugar mills of the United States, including all sugars in process or in transit, at the price of 6.055 cents per pound for raw sugar and 7.35 cents per pound for refined sugar and immediately resold these sugars at the new price of 7.28 cents per pound for raw sugar and 8.82 cents for refined. Wholesalers and retailers were warned not to average their prices but to sell upon the old basis until their stocks of the lower-priced sugars were exhausted. From September 9 till the end of the year the refiners purchased all of their sugars from the Sugar Equalization Board at a price of 7.28 cents per pound. The Board absorbed the differential of 1.225 cents per pound between this price and the 6.055 cents per pound, the duty-paid price for the raw sugars of the 1917-18 crop.

AGREEMENTS WITH PRODUCERS AND REFINERS

The price problem, once being disposed of, the road was cleared for the execution of agreements with the various producers. The agreement entered into on October 24, 1918, between the Sugar Equalization Board, the Cuban Commission, and the agents of the Cuban producers contained the following provisions:

1. Sugars were to be purchased for shipment to the United States at the price of 5.88 cents per pound, "cost and freight" to New York or Philadelphia.

2. Sugars were to be purchased for shipment to the United Kingdom, France, and Italy at a price of 5.50 cents per pound f.o.b. northern ports or 5.45 cents per pound f.o.b. southern ports.

3. Shipments of sugar were to be made immediately after the beginning of the crop, not less than 2 per cent of the amount to be shipped on December 1918 and the remainder in approximately equal monthly shipments from January to November, 1919.

4. Provisions were made in the agreement for brokerage, marine insurance, lighterage, and so forth.

On September 18, 1918, an agreement with each individual beet-sugar producer was entered into by the Food Administrator, as had been done in the previous year. The main provisions were:

1. A central "Sugar Distributing Committee" was created to "direct the distribution of the beet sugar crop . . . in the most economical and efficient method consistent with an equitable distribution of sugar where needed throughout the United States."

2. Every producer agreed to abide by the rules and directions of the Sugar Distributing Committee and to sell at a price not to exceed the basic maximum price of 9 cents per pound at seaboard refining points.

3. The Sugar Distributing Committee was empowered to make a final settlement to individual producers at the close of the crop, based on the "average net proceeds per pound of sugar resulting from the sale of all sugars" of the 1918-19 crop.

An agreement of the same character as that with the beet producers was entered into by the Food Administrator and the Louisiana cane-sugar producers. A committee called the Louisiana Sugar Committee was created to direct the distribution of Louisiana sugar, under the supervision of the Food Administration. The basic price for raw sugar at customary Louisiana refining points was not to be "greater than the price which may be found to be just and fair by the United States Food Administrator and not less than the price of duty paid 96 degree Cuban raw sugar delivered at such refining points." The minimum basic price for Louisiana raws was thus established at 7.28 cents per pound. The basic price for Louisiana refined sugar was to be the price determined by the Food Administrator "under the provisions of his uniform contracts with the sugar refiners of the United States, dated October 1, 1917." For the Louisiana crop of 1918-19 this arrangement meant a basic net cash price of 8.82 cents per pound. Price differentials were established in the agreement for the many different grades of so-called "direct consumption" sugars manufactured in Louisiana.

An agreement dated October 24, 1918, was entered into between the Equalization Board, the refiners of the United States, and the Food Administrator, the chief provisions of which were as follows:

1. The refiners agreed not to purchase any sugar for delivery during 1919 except from the Equalization Board.

2. The allocation of sugar to the different refineries was to be based on a percentage scale which was incorporated in the agreement.

3. An "American Refiners' Committee" was created to direct the distribution to the refineries of the sugar obtained by the Equalization Board.

4. The refiners agreed to sell all their refined sugar at a price not to exceed 1.54 cents per pound above the price paid for raw sugar to the Equalization Board.

5. The Equalization Board agreed to supply the refiners with their requirements of raw sugar for 1919 at a price of 7.28 cents a pound.

6. In the event of a decrease in the price of sugar in 1919, the Board agreed to pay the refiners the amount of their loss; in the event of an increase in the price of sugar, the refiners agreed to pay the Board the amount of their gain.

After it had purchased the Cuban crop the Board resold one-third of this crop to the British Royal Commission. This contract provided that the British Royal Commission was to be the agency for Great Britain, France, and Italy and that it was to assume all the obligations of the contract without recourse to the Sugar Equalization Board.

Another contract related to the refining of sugar on toll for the Royal Commission. Since the beginning of the war in 1914 the United Kingdom was faced with the deficiency in its sugar supply resulting from the blockade of the Central Powers, from which source the largest part of its sugar had been obtained in prewar years. The sugar obtained from the Central Powers was beet sugar which required no refining. The United Kingdom met the deficiency in a small part by increasing its own refining capacity but in far greater measure by utilizing the excess refining capacity of the United States. Raw sugars were bought in Cuba and sent to the United States to be refined and then reshipped to the United Kingdom. The same thing applied in smaller degree to France and Italy. To provide for refining Cuban raw sugars for the United Kingdom, France, and Italy for 1919, the refineries of the United States, with the approval of the Board, granted an option to the Royal Commission on November 22, 1918, providing for refining on toll by United States refineries of 321,000 tons of raw sugar out of the one-third of the Cuban crop belonging to the Royal Commission.

The fact that this refining of sugar for England, France, and

Italy was carried on in this country has often been overlooked, and led to popular misapprehension as to the amount of sugar exported from the United States. This refined sugar showed in our export figures, but it obviously did not come from the supply of sugar belonging to the United States.

SUGAR SITUATION AT THE TIME OF THE ARMISTICE

The Food Administration plan for sugar control had been predicated upon the continuation of the war, and it is improbable that the Sugar Equalization Board would have been created had the early ending of the war been foreseen in July 1918. After the making of the contracts described above and the centering of the control of the sugar market in the hands of the Sugar Equalization Board, it was, however, incumbent upon the Board to continue the control and carry out its commitments through the year 1919.

The sugar supply of the world for the year 1919, as it appeared at the time of the signing of the Armistice, is shown by the following table:

Item	Short Tons
Estimated exportable surplus of Western Hemisphere in 1919	2,028,000
Estimated necessary imports of United Kingdom, France, Belgium, Italy, 1919	2,546,000
Required for above Allies in 1919 to be obtained from sources outside Western Hemisphere	518,000
Required for the rest of Europe (taking into account the following countries: Russia, Holland, Germany, Austria-Hungary, Sweden, Spain, Denmark, Norway, Switzerland, Roumania, Servia, Bulgaria, Greece, Finland, and Portugal)	925,000
Total required for all Europe to be obtained from sources outside Western Hemisphere	1,443,000
Available from sources outside Western Hemisphere:	
From Java, 1918-19 crop	450,000
From Mauritius	220,000
From Philippines	125,000
From Reunion	35,000
Total	830,000
Deficit	613,000
Excess of world "carryover" stocks of sugar above normal needs resulting from the war shipping situation (mainly in Java)	900,000
Net world surplus for 1919.....	287,000

The position of the United States appeared to be as follows:

AVAILABLE SUPPLIES FOR 1919

Source	Short Tons Raw	Short Tons Refined
From Cuba	2,460,000	2,290,000
From Hawaii	554,000	516,000
From Porto Rico	404,000	376,000
From Philippines	81,720	76,000
From miscellaneous foreign sources....	24,950	23,200
From domestic cane	263,000	245,000
From domestic beet	792,000	737,000
Total all sources	4,579,670	4,263,300
Prewar consumption		3,920,000
Record consumption		4,160,000
Surplus for 1919 above normal usage		343,000

This statistical information indicated that there was a supply of sugar available for the United States sufficient to meet the normal consumption of the country, and experts in the sugar trade generally agreed that it was advisable to remove the restrictions.

In his address to the State Food Administrators on November 12, 1918, the Food Administrator made the following forecast of the situation:

It is very difficult to forecast with any degree of accuracy the position in sugar. At the present moment all Europe and North America are living on much restricted allowance. Our assured supplies under the purchases we have made are the largest per capita in the world. This is not greediness, for we have throughout the war asked our Allies to supply themselves first and we would do with the remainder. They have sacrificed sugar to provide ships for other purposes. If we assume that Europe will continue on present rations then the world supplies, now enlarged by rendering Java sugar available, are sufficient to provide our entire normal consumption. If Europe raises its ration very considerably, there will be a shortage.

The Food Administration has protected the fundamental supply to the American people by purchasing, in conjunction with the Allies, the next Cuban sugar crop. We have made such arrangements with the various refiners and producers in the United States and with other producers as will assure a price of nine cents a pound wholesale, for sugar during the next twelve months. This price compares with from twelve to twenty cents a pound in the other sugar-importing countries.

As the result of these arrangements and the fact that eastern sugars will be available, we will need little or perhaps no restraint on consumption after the new Cuban crop is available, unless, as I have said, the other governments in the world decide to considerably increase their present rations. I do not

think our people would want us to maintain an extravagant and luxurious use of sugar in soft drinks and confectionery when there was an actual hardship for the necessary sugar for household use in other countries. With the present world outlook, we are taking steps to relax the restrictions which it was necessary for us to impose on consumption when we based the outlook for the whole of Allied supplies directly on North American sugar alone.

The necessity of demobilizing the Food Administration made the continuation of sugar rationing along the plan in force at the time of the Armistice a practical impossibility. This scheme of regulation involved the upkeep of an organization in every state to handle the details of the rationing system and, with the pressure for the demobilization of war organizations and in the face of the above statistical situation as to supply, this could not be justified.

In view of these facts, at a meeting of the Board of Directors on November 12, 1918, the Chairman of the Board was empowered to relax the restriction on domestic consumption to the extent that he deemed advisable. The first step was to relieve the housewife; and the household ration was gradually increased, as hereinbefore noted under the discussion of conservation measures. The entire certificate scheme was abandoned on November 27, 1918. In order to provide for the Eastern States until the new-crop cane sugar should arrive, it was necessary to restrict deliveries from North Atlantic refineries to the territory east of the Buffalo-Pittsburgh line and the 80th meridian and north of the Virginia-North Carolina boundary, until January 20, 1919.

On January 26, 1919, all remaining special regulations governing manufacturers and refiners of sugar were repealed, and after this date manufacturers and refiners were subject only to the general regulations for licensees under the provisions of the Food Control Act.

DEVELOPMENTS DURING 1919 AS TO SUPPLY AND DEMAND

The first important change from the sugar-supply situation shown by the statistics quoted above was the rapid disappearance of the Javan surplus. It will be noted that the figures available at the time of the Armistice showed that about 900,000 tons of sugar had accumulated in Java as a result of the war-shipping situation and this large excess "carryover" was relied upon to make up for deficits in production elsewhere.

Two large sugar-export organizations were formed in Java in the latter part of 1918, and during the last two months of 1918 and the first part of 1919 the exports from Java, due to the activity of these

organizations, were unusually heavy. Over 1,000,000 tons were shipped from Java from November 1918 to May 1919. Not only did the old crop thus disappear but it was reported in the early part of 1919 that much of the new crop which was not yet harvested had been contracted for. Thus the surplus "carryover," which in the estimate at the time of the Armistice had been counted on to meet the deficit in production, rapidly disappeared.

The second striking development in the world sugar market was the decline in many of the sugar crops. Cables received early in March reported a decline for the British Indian crop from the early estimate of 2,950,000 long tons to 2,337,000 long tons, a drop of over 600,000 long tons and nearly 1,000,000 tons below the preceding year's crop. There were several other important changes in the crop figures during the year, some favorable and some unfavorable. The following table indicates some of the principal changes:

PRODUCING REGION AND CROP*		
	(Long tons)	
	Forecast of Crops, Jan. 1919	Crop Figures as Corrected, Dec. 1919
United States		
Louisiana	225,000	125,000
Porto Rico	410,000	375,000
Cuba	3,800,000	3,972,000
British India	2,950,000	2,337,000
Formosa and Japan	375,000	416,000
Philippines	230,000	150,000
Total	7,990,000	7,375,000
Net decrease		615,000

* As these figures indicate, the final result of the changes was to decrease the available supply by about 600,000 long tons.

The third important development was the phenomenal increase in sugar consumption in the United States due to various causes, particularly prohibition and the restoration of the so-called nonessential sugar-consuming industries, which had been partially suppressed during the war. The United States is the largest consuming country in the world both in aggregate amount and in the per capita consumption. It became apparent in the middle of the year that our consumption for the year 1919 would reach 4,000,000 long tons refined, or 500,000 tons more than normal, an increase of 12½ per cent. The importance of this great increase is readily appreciated when it is

noted that this equals the normal consumption of Norway, Denmark, Spain, Sweden, and Holland combined.

Another peculiarly unsettling factor was the continuous set of marine strikes which interfered with the movement of raw sugar from the source of supply and which agitated buyers, causing them to anticipate their needs at times beyond reasonable caution.

The net result of these various developments was the emergence of a gap of over a million tons between the world supply and demand for 1919 as compared with an estimated surplus at the time of the Armistice of about 280,000 tons.

This shortage, however, was not felt in the first half of 1919 because this was the period of heaviest production and the supplies available for this period were far in excess of the prewar normal. The full impact of this world shortage came in the last half of the year.

Normally the beet-sugar supply is depended upon in this period of the year, because the beet sugar comes on the market principally in the last half while cane sugar comes in the first half. But it was in its beet-sugar supplies that the world had suffered its principal decrease and the increased production of cane had balanced this decrease only during the period of its flush marketing, viz., the first half of the year. Moreover, the Javan surplus "carryover" had, as above stated, disappeared so rapidly that there was none of it available to alleviate conditions in the latter part of the year.

Roughly, the problems of supply and demand during 1919 can be arranged into two periods: (1) the first five months of the year, which was the period of flush production and in which the great difficulty was to find a market and storage space for the large supplies being offered; (2) the last seven months of the year, in which the deliveries were much less because of the exhaustion of the cane-sugar supply.

In the first five months of the year there was a decidedly slow movement of sugar. At one time the stocks of raw and refined sugars became so great that the refiners warned the Board that they could no longer carry any more, and the problem arose as to whether or not the Board should carry these sugars at its own expense until the demand improved. Several cargoes of sugar which arrived at this time from Porto Rico had to be held on lighters at the expense of the Board until the refiners were able to use them later. At this time the Porto Ricans complained bitterly that their sugars were not moving

rapidly enough to the United States and that the Board was moving Cuban sugars in preference.

The explanation of the slow movement of sugar in this first period is largely found in the fact that the speculative factor in the trade had been eliminated by government control. Normally there is the probability of an increase in price in the latter part of the year resulting from the heavy summer demand. With the price held by government control to the same level throughout the year this chance for an increase was eliminated and the incentive for dealers to stock up was therefore to a great extent removed. The alternatives before the Board were (1) either to reduce the price or (2) to purchase and store sugar on its own account. Reducing the price when our price was already below the world level was obviously unwise. The other alternative of carrying large stocks at its own expense would have resulted in the difficulty that the surplus thus accumulated might not be distributed and there would be a tremendous financial loss which the Board could not absorb. Moreover, this action on the part of the Board would further have deterred other buyers from increasing their stocks because they would have interpreted this action as indicating a weakness in the world market and the probability of a decrease in price later.

The Board did everything possible to warn the trade of the possibility of a shortage later in the year and of the advisability of their stocking up with sugar during the time of its plentiful supply. The following announcement made to the trade on April 14, 1919, is quoted as showing the accurate forecast of the situation made by the Board:

The Food Administration urges upon dealers in refined sugar the desirability of their replenishing their stocks now, to insure against the possibility of local shortages, particularly in the eastern part of the country later on, when the demand comes for canning. This demand may be further accentuated by the expected increase in consumption of sugar and its products in candy and sweet drinks as a result of prohibition.

The Food Administration is particularly eager that a full supply of sugar should become available to home canners for preserving this summer's fruits. Last season, on account of restrictions and difficulties in transportation, there was an unequal distribution of sugar which led to local shortages. This season the Food Administration fears that dealers may bring about the same undesirable situation unless they replenish their stocks now.

The foreign demand for sugar this year is estimated at 650,000 tons as compared with 150,000 last year and a normal of 50,000 tons. Of this year's European requirements, 550,000 tons have already been contracted for. This

sugar will go forward in the first nine or ten months of the year instead of being spread over twelve. Ships have already been allocated for 60 per cent of the amount. The foreign buyers are already taking steps to insure their getting their sugar, and if the American local buyers do not exercise similar precautions and continue to refrain from buying, they will find themselves unable to secure the sugar they will require later on, during the large consuming months from June 1 to October 1, since the refiners' ability to deliver is limited by their daily refining capacity, which will be taken to meet their foreign contracts.

There is not, in the opinion of the Sugar Equalization Board officials any actual shortage of sugar now and no prospect of one, at least before next fall, but, on the other hand, there is no prospect of any material change in price that would justify merchants in delaying their buying orders. The price of sugar today in the United States is lower than that in any European country (except Denmark, where there is a special situation). Against our 10 cents per pound, prices in Europe vary from 12 cents to 45 cents.

In addition to urging dealers in the United States to increase their stocks the Board urged the Royal Commission to take their sugar from the United States as rapidly as possible in order to allow an unrestrained use of the refiners' capacity for the heavy summer demand in this country. About 150,000 tons of Cuban raw sugar was sold to France, Canada, and Italy out of the portion belonging to the United States.

Such were the efforts of the Sugar Equalization Board to cope with the situation as it developed at this point. Suddenly there developed the change in the entire world situation noted above: (1) Reports came from Java, Japan, Formosa, and India indicating that sugar crops there had declined seriously as compared with the expectations at the beginning of the year. (2) The beet supplies were reported as having been completely used up in Europe and the 1920 crop was not to be available until September. (3) The summer demand developed all over the world, simultaneously, owing to the usual needs for preserving fruits, canning, soft drinks, ice cream, etc. In the United States the demand was intensified owing to the heavy canning of vegetables and fruits resultant from the special training in these directions induced by the Food Administration during the war and by the extension of prohibition throughout the United States.

It must not be forgotten that all these factors operated at a time when the dealers in the United States were operating on the barest margin of stocks. At this very time no Louisiana sugar was available in the South, since the entire crop had been disposed of and no

new crop was to be available until November; furthermore, the old-crop beet sugar was practically exhausted and no new crop in any consequential amount could be expected until August. Thus the heavy demand from Europe, particularly from the United Kingdom, France, and Italy, and the heavy demand in the United States came at the worst period of the year, when the entire supply had to be produced through the refineries and the capacity of the refineries was strained to the utmost. Shipments began to be delayed owing to this "peak load," complicated further by railroad congestion and delay through other causes. Gradually sugar buyers realized that the price of sugar would certainly not drop but, on the contrary, were it not for the restraining hand of the government, prices would certainly rise. No one knew how long the government intended to control the sugar industry; but it was clear that, if supplies of sugar were to be obtained with reasonable promptness and at fair prices, it was high time to place orders for as much sugar as possible. Orders began to pour in consequently at the various refineries until they were deluged. The situation, bad as it was, was made worse by first the rumor, then the actuality, of a longshoremen's strike at the port of New York. Buyers became very anxious about their future supplies when confronted with the stoppage of marine traffic between Porto Rico, Cuba, and New York. A panic-stricken market was then the result and no control of demand was possible. In short there resulted a "run" on the nation's sugar bank.

Confronted with this perplexing situation in the sugar market, the Board made several attempts to ameliorate conditions. Obviously the most important thing was to increase the domestic supply. This could be done only by eliminating exports, since there were no supplies available except such sugars as were coming from day to day from sources outside the United States. The simplest thing would have been the imposition of an embargo on all exports from the United States, such as was in effect during the war. The Board found upon investigation that no authority existed for such action. The War Trade Board was practically out of existence, the Food Administration organization was about dissolved, and the legal status of an embargo was extremely doubtful. Instead of an embargo, the Board requested refiners to cease shipping sugar abroad for the time being, including the sugar refined on toll for the Royal Commission, with the exception of such contracts as were outstanding and which had to be liquidated. The Board also in attempting to relieve the

situation purchased 40,000,000 lbs. of sugar from the Army where it had an excess supply and shipped it to points in the United States whenever the supply was short. Also some 200,000 bags of beet sugar was bought from a beet-sugar manufacturer on the West Coast and sold to points in the Middle West, where the shortage was becoming acute. In both cases the Board absorbed the freight differentials so that the price wholesale to the trade remained at 9 cents.

To avoid the evil consequence of the marine strike the Sugar Equalization Board co-operated with the Shipping Board and by means of the radio diverted ships, originally bound elsewhere, to Cuba to obtain cargoes of raw sugar. However, the strike continued for six weeks and the evil results could be neutralized only in small measure. It was natural that the shortage should be felt first in the West and the Middle West, since all beet sugar was there consumed and the new crop was not forthcoming in large enough quantities for several months. However, complaints of acute conditions were not confined to this part of the country. It is questionable whether this situation could be called a shortage, in the ordinary sense of the word, since statistically, at least, there were sufficient sugars to meet all normal requirements of the country. Refiners delivered larger quantities than normal into domestic consumption; yet complaints came continually. The demand situation was apparently out of hand; but there was hope that, with the constant infiltration of new supplies, within a month the situation would improve considerably, particularly since new-crop beet sugars and Louisiana sugars would soon be produced in large quantities.

Just about this time a new factor began to color the entire situation, however, which tended to make matters worse. Buyers were beginning to turn their thoughts to the coming year's (1920) supplies and prices. Some buyers felt that, if the government would continue control in 1920 and purchase the 1920 Cuban crop as in the year previous, there need be less concern about the following year's supplies than if there were to be a free market. On the other hand, others believed that without government control it was to be expected that refiners would anticipate their future requirements as in prewar times and purchase quantities of Cuban raws for early delivery, say, in December 1919 or January 1920. In either case, with supplies for 1920 assured in either direction, the market would probably have become quiet in the winter months as normally after the heavy summer and fall demand had been supplied.

An official announcement was awaited by the sugar trade as to the policy of the United States government for 1920. The determination of the question of whether or not governmental control would be continued was, however, delayed. The Board had no authority to make contracts or to make other commitments looking to the continuation of its existence through the year 1920. The determination of this question was left to the President of the United States and to the Congress.

Representatives of the Cuban producers suggested in a letter to the Board on July 29 that negotiations be entered into for the Cuban crop of 1920. The Board referred the question to the President, but no action having been taken thereon by September 22 the Cubans withdrew their offer on that date.

The delay in the determination of the future policy of the government resulted in the buyers becoming excited and in a further inflation of demand. Complaints as to shortages therefore continued, and from some localities became worse, in the fall months. To meet the situation the Board urged the refiners to appoint a committee to supervise the distribution of the remaining supplies of the old-crop sugar during 1919 in order to bring about an equitable distribution of this sugar. This committee was formed and functioned continuously during the rest of the year allotting sugar to the Eastern part of the country with due relation to available supplies and normal requirements. In order to provide for supplies for this Eastern territory the Board bought about 50,000 tons of Western beet sugar, which was also distributed by the American Refiner's Committee under the supervision of the Board.

RESULTS

The total amount provided by the Sugar Equalization Board for domestic use by the people of the United States during the year 1919 reached a total of 4,000,000 long tons refined sugar, against a prewar record of 3,650,000 tons and a normal of 3,500,000 long tons. There was, therefore, distributed during the year 10 pounds more than normally for every inhabitant of the United States.

The evidence of the year proved that the 9-cent price maintained by the Sugar Equalization Board was far below the world level. During the latter half of the year the low price of sugar in the United States attracted bids from all parts of the world, and it was a most difficult thing to hold the price down to the 9-cent level. When the

new-crop sugars entered the market in the fall of 1919 the extent to which the price in the United States was below the world level was evidenced by the fact that the new-crop price ranged from the minimum of 10 cents for beet sugar to a maximum of 22 cents per pound.

The holding of the price throughout the greater part of 1919 to the 9-cent level therefore effected a saving to the American people of a tremendous sum. Excluding the high-priced sugar consumed in the latter part of the year, the per capita consumption was at least 80 pounds per person and the total saving may readily be appreciated when it is realized that there was a saving on this amount of sugar of from 4 to 7 cents per pound.

XI. LICENSED TRADES AND COMMODITIES

The licensing of wheat and rye millers and elevators in August 1917 and of sugar refiners and manufacturers in September 1917 has already been referred to herein.

On October 8, 1917, the President issued a Proclamation, in part as follows:

I, Woodrow Wilson, President of the United States of America, by virtue of the powers conferred upon me by said act of Congress, hereby find and determine and by this proclamation do announce that it is essential, in order to carry into effect the purposes of said act, to license the importation, manufacture, storage and distribution of necessities, to the extent hereinafter specified.

All persons, firms, corporations and associations engaged in the business either of (1) operating cold storage warehouses (a cold storage warehouse, for the purposes of this proclamation, being defined as any place artificially or mechanically cooled to or below a temperature of 45 degrees above zero Fahrenheit, in which food products are placed and held for thirty days or more), (2) operating elevators, warehouses or other places for the storage of corn, oats, barley, beans, rice, cottonseed, cottonseed cake, cottonseed meal or peanut meal, or (3) importing, manufacturing (including milling, mixing or packing), or distributing (including buying and selling) any of the following commodities:

Wheat, wheat flour, rye or rye flour,
Barley or barley flour,
Oats, oatmeal or rolled oats,
Corn, corn grits, cornmeal, hominy, corn flour, starch from corn, corn oil, corn syrup or glucose,
Rice, rice flour,
Dried beans,
Pea seed or dried peas,
Cottonseed, cottonseed oil, cottonseed cake or cottonseed meal,
Peanut oil or peanut meal,
Soya bean oil, soya bean meal, palm oil or copra oil,
Oleomargarine, lard, lard substitutes, oleo oil or cooking fats,
Milk, butter or cheese,
Condensed, evaporated or powdered milk,
Fresh, canned or cured beef, pork, or mutton,
Poultry or eggs,
Fresh or frozen fish,
Fresh fruits or vegetables,
Canned: Peas, dried beans, tomatoes, corn, salmon or sardines,
Dried: Prunes, apples, peaches or raisins,
Sugar, syrups or molasses,

Excepting, however,

- (1) Operators, of elevators or warehouses handling wheat or rye, and manufacturers of the derivative products of wheat or rye, who have already been licensed,
- (2) Importers, manufacturers and refiners of sugar, and manufacturers of sugar syrup and molasses, who have already been licensed,
- (3) Retailers whose gross sales of food commodities do not exceed \$100,000.00 per annum,
- (4) Common carriers,
- (5) Farmers, gardeners, cooperative associations of farmers or gardeners, including live stock farmers, and other persons with respect to the products of any farm, garden or other land owned, leased or cultivated by them,
- (6) Fishermen whose business does not extend beyond primary consignment,
- (7) Those dealing in any of the above commodities on any exchange, board of trade or similar institution as defined by Section 13 of the act of August 10th, 1917, to the extent of their dealings on such exchange or board of trade,
- (8) Millers of corn, oats, barley, wheat, rye or rice operating only plant of daily capacity of less than seventy-five barrels,
- (9) Cannors of peas, dried beans, corn, tomatoes, salmon, or sardines whose gross production does not exceed 5,000 cases per annum,
- (10) Persons slaughtering, packing and distributing fresh, canned or cured beef, pork or mutton, whose gross sales of such commodities do not exceed \$100,000.00 per annum,
- (11) Operators of poultry or egg packing plants, whose gross sales do not exceed \$50,000.00 per annum,
- (12) Manufacturers of maple syrup, maple sugar and maple compounds,
- (13) Ginners, buyers, agents, dealers or other handlers of cottonseed who handle yearly, between September 1st and August 31st, less than one hundred and fifty tons of cottonseed,

are hereby required to secure on or before November 1, 1917, a license, which license will be issued under such rules and regulations governing the conduct of the business as may be prescribed.

This was the most general licensing proclamation, and by it most of the important manufacturers, distributors, importers and storers of food commodities were brought under license. As experience was gained, however, and the necessity for control increased, it was found necessary to cancel many of the exceptions contained in this proclamation and to require licenses of the smaller manufacturers and others who could be licensed under the terms of the Act. The smaller operator who was excepted by this proclamation was often inclined to indulge in practices from which licensees were prohibited by regulation, and thus to in part nullify efforts of the Food Administration

and cause dissatisfaction on the part of the licensees at the apparent discrimination. It was further found necessary to add certain commodities from time to time and thus to bring other businesses under license. Thus by proclamation of January 10, 1918, feeding stuffs were included in the licensing program and the lower limit for licensed canners was reduced from an annual output of 5,000 cases to an annual output of 500 cases, and various other extensions and additions were made to the licensed list. On January 30, 1918, the smaller bakers (excepting only those whose consumption of any flour and meal was less than three barrels per month) and importers and distributors of green coffee were required to secure licenses.

By proclamation of May 14, 1918, packers of canned tuna, cured, smoked, or otherwise preserved salmon, operators of poultry- and egg-packing plants not already licensed, handlers of cottonseed who handle yearly more than 20 tons of seed (the lower limit under proclamation of October 8, 1917 was 50 tons), importers, manufacturers, distributors, and storers of cottonseed hulls, and manufacturers of fermented beverages containing less than one-half of one per cent of alcohol were all required to secure licenses on or before June 1, 1918.

By proclamation of November 2, 1918, all manufacturers of near beer and other cereal beverages, all millers of corn, oats, barley, and rice who were not already licensed, all storers of foods or feeds for hire who were not already licensed, and all manufacturers, importers, or distributors of animal casings and various designated edible oils were required to secure license by November 15, 1918.

The following enumeration gives all of the licensed businesses under the control of the United States Food Administration at any time during its existence, including all persons, firms, corporations, and associations (under eight headings below) engaged in warehousing, importing, manufacturing, storing, and distributing commodities.

1. Those engaged in the business of operating cold-storage warehouses (a cold-storage warehouse being defined as any place artificially or mechanically cooled to or below a temperature of 45° above zero Fahrenheit in which food commodities are placed and held for 30 days or more).
2. Those engaged in the business of importing, manufacturing (including milling, mixing, or packing), or distributing wheat, rye, barley, rice (including brewer's rice and rice screenings); corn (including snap corn and excluding popcorn); oats; wheat flour

(including graham flour, whole wheat flour, gluten flour), rye flour, corn flour, barley flour, rice flour, oat flour; buckwheat and buckwheat products, mixed flours that consist chiefly of one or more licensed flours, namely, wheat, rye, barley, corn or rice flour; oatmeal or rolled oats; corn grits, corn meal, raw corn flakes; hominy (including canned hominy); starch from corn, corn syrup or glucose, corn oil, corn sugar, grape sugar; dried beans (including dried lima beans, soya beans, pinto beans, velvet beans, and excluding castor beans); pea seed or dried peas; cottonseed; cottonseed oil, cottonseed cake, cottonseed meal; peanut oil, peanuts, peanut meal; oleomargarine, lard, lard substitutes, oleo oil, or cooking fats (including butterine, cocoanut oil butter, nut oil for cooking, edible tallow); milk, butter or cheese (including buttermilk, whey butter and cottage cheese); condensed, evaporated, or powdered milk (excluding malted milk); casings made from the intestines of animals, for sausage and other food commodities; fresh, canned, or cured beef, pork, or mutton (including veal, lamb, ham, canned cornbeef, chipped beef, dried beef, sliced bacon whether in containers or not, and excluding the distribution of beef juice, bologna, canned chili meat, cornbeef hash, deviled ham, luncheon tongue, mincemeat, potted meats, sausage, scrapple, tripe, veal loaf); poultry or eggs (fresh or frozen and including dried egg albumen or dried yolk, and canned eggs); fresh or frozen fish; fresh fruits or vegetables (including Irish or sweet potatoes, lemons, oranges, berries); canned peas; canned dried beans (including canned pork and beans and chili con carne with beans); canned tomatoes (including tomato paste, pulp, or puree); canned corn (including canned hulled corn and canned hominy); canned salmon, sardines, or tuna (domestic or foreign); dried prunes, apples, peaches; dried raisins (excluding dried black grapes and currants); soya bean oil, soya bean meal, palm oil, palm kernels, palm kernel oil, copra, copra oil, Chinese vegetable tallow, coconut stearine, coconut oil, cod oil, cod liver oil, cohune oil, fish and marine animal oils, lard oil, lard stearine, linseed oil, mustard seed oil, mutton tallow, neatsfoot oil, neutral lard, oleo stearine, oleo stock, olive oil, rapeseed oil, sesame oil, shea nut oil, sunflower seed oil, tallow; sugar, syrups, or molasses (including raw, refined, clarified, plantation washed, and open-kettle sugar; sugar of milk; sorghum syrup); (excluding beverage or medicinal syrups and rock candy syrup).

3. Those engaged in the business of storing wheat, rye, corn, oats, barley, beans, rice, cottonseed, cottonseed cake, cottonseed meal, cottonseed hulls, peanut meal, malt, or of operating warehouses or other places in which any food or feed commodities are stored for hire.
4. Those engaged in the business of (a) importing, storing, distributing, or manufacturing (including mixing and processing of all kinds) any commercial mixed feeds (including dairy feeds, horse, and mule feeds, stock feeds, hog feeds, and poultry feeds); (b) manufacturing feeds from any of the following commodities or importing, storing, or distributing any of the following commodities as feeds or feed ingredients: buckwheat, kaffir, feterita, malt sprouts, broom corn, baled straw, cane seed, baled hay, linseed-oil cake, linseed-oil meal, beans, peas, grain and seed screenings, animal or fish products or by-products, emmer, millet, spelt, milo, lentils, tankage, sunflower seed, dried distillers' grains, dried brewers' grains, dried yeast grains, baled alfalfa; (c) importing, manufacturing, storing or distributing as feed any product or by-product of any of the following commodities: shelled corn, ear corn, barley, oats, wheat, rye, sugar cane, buckwheat, sorghum grains, rice, grain and seed screenings straw, soya beans, velvet beans, hay, peas, peanuts, copra, palm nut, palm kernel, sugar beets, alfalfa.
5. Those engaged as salt-water fishermen, whether fishing independently or on shares, at any period of the year in the commercial distribution, including catching and selling, of any and all varieties of salt-water fish, including menhaden, and of shell fish and crustaceans.

NOTE.—A license was required to catch crawfish, crabs, scallops, mussels, oysters, shrimps, and lobsters, but was not required to catch turtles, terrapin, or whales. Salmon fishers were also required to operate under license.

6. Those engaged in the manufacture for sale of cake, crackers, biscuits, pastry, or bread in any form, or other bakery products, whose consumption of flour, meals, and substitutes in the aggregate is 3 barrels or more per month on an average throughout the year.
7. Those engaged in the business of manufacturing (including packing) alimentary paste; tomato soup, tomato catsup, or other tomato products; fermented beverages containing less than one-half of 1 per cent alcohol; mild-cured, hard-cured, salted, dried,

smoked, pickled, or otherwise preserved salmon; near-beers or other similar cereal beverages.

8. Those engaged in the business of importing or distributing green coffee.

NOTE.—The following classes were subjected to license: persons, etc., importing green coffee, whether or not they roast it before disposing of it; wholesalers, jobbers, roasters, and all others who buy or otherwise deal in green coffee, whether or not they roast it before disposing of it; retailers who buy or otherwise deal in green coffee, whether or not they roast it before disposing of it, whose total gross sales of all food or feed commodities exceed \$100,000 a year; in other words, all persons, firms, corporations, and associations who import, and all others (except retailers whose gross sales of food or feed commodities do not exceed \$100,000 a year), who buy or otherwise deal in or handle green coffee, were required to obtain a license.

Special exceptions.—The following persons, firms, corporations, and associations were exempted from license requirements:

Exemptions made by Congress in enacting the Food Control Law:

a) Those doing a strictly retail business whose gross annual sales of all food commodities do not exceed \$100,000 were not subject to license on their retail activities.

b) Common carriers as to the operations necessary to the business of common carriers.

c) Farmers, gardeners, co-operative associations of farmers or gardeners, including live-stock farmers, and other persons, with respect to the products of any farm, garden, or other land owned, leased, or cultivated by them.

Exemptions by the Food Administration:

d) Cannery of peas, dried beans, corn, tomatoes, salmon or sardines whose gross production does not exceed 500 cases per annum, and all home canners and bona fide boys' and girls' canning clubs recognized by the Department of Agriculture and of the several states in the United States.

e) Manufacturers of maple syrup, maple sugar, or maple compounds.

f) Ginners, buyers, agents, dealers, or other handlers of cottonseed who do not handle more than 20 tons of cottonseed between September 1 and August 31 in any given year.

The total number of licenses issued up to January 1, 1919, was 296,756. Of this number 19,260 were issued to wheat and rye elevators and 1,506 to wheat and rye millers under the proclamation of August 14, 1917. These licenses were subsequently called in by

the Food Administration and a general license was issued to these licensees. The general license was a form used for all licensees with the exception of those handling certain special commodities. Including general licenses, the total number of licensees of the Food Administration on January 1, 1919, was 263,737, classified as follows:

General licenses	152,100
Sugar licenses under the proclamation of September 7, 1917	473
Baker's licenses	38,800
Salt-water fisherman licenses	69,218
Steamship baker's licenses	1,103
Near-beer manufacturers	377
Arsenic licenses	511
Coffee licenses	1,155

(There were also 2,374 coffee dealers holding general licenses. There were 1,155 who held no other license.)

ISSUANCE OF RULES AND REGULATIONS

The rules and regulations governing these different licensees were issued from time to time over the period from September 1, 1917 (the effective date of the rules governing wheat and rye millers). Amendments, cancellations, and additions to the rules were made continuously throughout this period in the light of experience and the changing situation. These rules are considered in detail under the discussion of the regulation of the different dealers and commodities.

The rules were divided into two classes: (1) general rules governing and applicable to all licensees (excepting salt-water fishermen whose business did not extend beyond primary consignment), and (2) special rules applicable to each of the different trades licensed and designed to make allowance for the distinct character of the business licensed; for example, one set of special rules was required for wholesalers and licensed retailers, and for jobbers of various foodstuffs, and another set for canners of various products, etc.

All rules applicable to the licensees under the proclamation of October 8, 1917, became effective November 1, 1917. These rules, together with those previously issued relating to wheat and sugar, with certain amendments thereof, were included in a pamphlet designated "Series B" and mailed to the licensees with their licenses. Another pamphlet containing general revision of rules was issued January 26, 1918, containing changes which became effective on the twenty-eighth of the same month.

As the principles of food control began to be applied to the different commodities with increasing thoroughness, it was found that it was no longer possible to publish all the license regulations in a single pamphlet. Instead, a series of pamphlets for distribution were printed under the following scheme: One pamphlet containing the general rules applicable to all licensees, and separate pamphlets containing the special rules applicable to the different groups of licensees; the General License Regulations, printed in pamphlet No. I, issued and containing all regulations in effect on May 3, 1918; the special rules, issued in a series of pamphlets numbered from II to XXV. The following is the list of pamphlets of special rules:

- II. *Wheat and Rye Elevators, Dealers and Millers*
- III. *Corn, Oats, Barley—Elevators, Dealers and Millers*
- IV. *Malsters, Malt Dealers, and Near Beer Manufacturers*
- V. *Rough Rice and Rice Millers*
- VI. *Sugars, Syrups, and Molasses—Manufacturers and Refiners*
- VII. *Canners and Packers—Vegetables, Salmon, Sardines, Tuna, Milk*
- VIII. *Dried Fruits—Packers*
- IX. *Cottonseed, Peanuts, Soya Beans, Copra, Palm Kernels, and Their Products*
- XI. *Wholesalers, Jobbers, Importers, and Retailers of Non-Perishable Food Commodities*
- XII. *Brokers and Auctioneers of Non-Perishable Food Commodities*
- XIII. *Bakers*
- XIV. *Manufacturers of Miscellaneous Food Commodities*
- XV. *Fresh Fruits and Vegetables*
- XVI. *Fresh and Frozen Fish—Distributors*
- XVII. *Salt Water Fishermen*
- XVIII. *Poultry*
- XIX. *Eggs*
- XX. *Butter*
- XXI. *Cheese*
- XXIV. *Cold Storage Warehousemen*
- XXV. *Feedingstuffs*

Under the rapidly changing conditions of food control, amendments, cancellations, and additions to the rules were adopted so

frequently that great difficulty was experienced in keeping all interested parties properly informed of the latest rules and regulations governing them. It was obviously unfair to adopt the rule that everyone is supposed to know the law; and when the evidence in enforcement cases showed that the dealer accused of violating a regulation had not been properly notified, the practice was to give him another chance. To obviate this difficulty as much as possible, the next step in publication of the rules was the adoption of the loose-leaf system, under which, when any change was made in a rule or a new rule was issued, a new edition of the one page was printed. All food officials, national, state, and local, were supplied with loose-leaf sets of the regulations, and as often as any changes were made, the revised page was inserted, so that these various officials always had on hand a complete set of the regulations revised down to date. They were then entrusted with the duty of notifying licensees of any important changes affecting them. In addition to this, all rules were released to the press, and the trade papers and trade organizations were kept in touch with all developments.

GENERAL RULES

In the pamphlet, "Series B," referred to above, issued on November 1, 1917, the following statement was made by the Food Administrator as an introductory explanation of the purposes of the rules:

These general and special rules and regulations are promulgated by the President to accomplish three principal objects, namely:

1. To limit the prices charged by every licensee to a reasonable amount over expenses, and forbid the acquisition of speculative profits from a rising market.
2. To keep all food commodities moving in as direct a line and with as little delay as practicable to the consumer.
3. To limit as far as practicable contracts for future delivery, and dealings in future contracts.

The general rules were, in the main, amplifications of these principles of control, as will appear from the following analysis of them:

The following general rules were designed to limit the prices charged by every licensee to a reasonable amount over expenses and to forbid the acquisition of special profits:

Rule 5.—The licensee shall not import, manufacture, store, distribute, sell or otherwise handle any food commodities on an unjust, exorbitant, unreasonable, discriminatory or unfair commission, profit or storage charge.

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Rule 10.—The licensee shall not buy, contract for, sell, store or otherwise handle or deal in any food commodities for the purpose of unreasonably increasing the price or restricting the supply of such commodities, or of monopolizing, or attempting to monopolize, either locally or generally, any of such commodities.

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Rule 17.—The licensee shall not knowingly sell any food commodities to any person engaged in the business of selling such commodity, who shall, after this regulation goes into effect, violate the provisions of the Act of Congress approved August 10, 1917, by making any unreasonable rate or charge in selling or otherwise handling or dealing in such commodity, or by holding, contracting for, or arranging for a quantity thereof in excess of the reasonable requirements of his business for use or sale by him for a reasonable time.

Rule 18.—No licensee shall make any allowance or payment to the agent or employee of any exchange, association, or other person from whom he buys, or to whom he sells, or for whom he handles commodities on commissions, without the written permission of the principal of such agent.

Rule 19.—The licensee shall not issue, or make public, market quotations, or make any statements to any person regarding the price at which food commodities are being sold, which quotations or statements cannot be verified either from his own records or from the records of other licensees, and shall not make any other misleading statements which tend to enhance the price of any food commodities.

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The following were to keep all commodities moving in as direct a line and with as little delay as practicable to the consumer :

Rule 6.—The licensee, in selling food commodities, shall keep such commodities moving to the consumer in as direct a line as practicable and without unreasonable delay. Resales within the same trade without reasonable justification, especially if tending to result in a higher market price to the retailer or consumer, will be dealt with as an unfair practice.

Rule 7.—No broker or other licensee shall buy or sell any food commodity for his own account unless he is also regularly engaged in, and holds himself out to the trade as conducting the business of distributing such commodity otherwise than on a commission or brokerage basis, or unless he uses such commodities in manufacturing; provided that this rule shall not apply to sales on an exchange, board of trade or similar institution.

Rule 8.—No licensee shall knowingly sell any food commodity to a broker or other licensee who is not buying for personal consumption or engaged in using such commodity in manufacturing, or who is not regularly engaged in, and holding himself out to the trade as conducting, the business of distributing such commodity otherwise than on a commission or brokerage basis; provided that this rule shall not apply to sales on an exchange, board of trade, or similar institution.

[The regulation of exchange transactions is not a function of license

regulations and under Section 13 of the Act will be handled by special regulation from time to time.]

Rules 13, 14, 15, and 16 were subsequently made special rules under the different commodity headings. The rules, in addition to the foregoing general rules, included Rules 1, 2, 3, 4, 12, 22, which related to the reports required of the licensee for the purpose of enabling the Food Administration to enforce its rules and to keep in touch with the conditions prevailing in the trades.

Rules 9 and 11 were conservation rules, Rule 9 having for its object conservation of space in transportation, and Rule 11 the prevention of waste.

Rule 17 prohibited the licensee from selling any food commodities to any person who made an unreasonable rate or charge in selling or otherwise dealing in such commodities. This rule was the foundation of the control over the unlicensed retailer, and will be considered more at length under that heading.

General Rule 23 read as follows:

Rule 23. Combination sales prohibited.—No licensee shall make or offer to make any combination sales of any food commodity, excepting that he may sell sugar in combination with cornmeal at the rate of 1 pound of sugar to 2 or more of cornmeal, or wheat flour in combination with one or more wheat flour substitutes as prescribed by the Wheat Conservation Rules: Provided, That in making any such combination sales the licensee shall name and charge a price for each of the articles so sold, which shall not represent more than a normal prewar margin over cost of any one of such articles.

A combination sale is (1) any sale or delivery of two or more commodities, or of two or more kinds or sizes of the same commodity, at a price effective only if they are bought at the same time; or (2) any sale or delivery of a commodity upon condition that the purchaser shall buy some other commodity, or some other kind or size of the same commodity.

This was made a general rule because the practice was one which would enable any licensee, manufacturer, or distributor to avoid any profit rule by indirection. The practice aimed at, however, was principally indulged in by wholesale and retail grocers. The enforcement of this rule eliminated a trade practice which enabled many dealers to charge exorbitant prices for certain goods by including them in a combination with other goods sold at little over profit.

XII. RULES GOVERNING WHOLESALERS, JOBBERS, IMPORTERS, RETAILERS, AND BROKERS OF LICENSED NONPERISHABLE FOOD COMMODITIES

Through the hands of this group of licensees pass practically all of the staple commodities of a nonperishable nature which enter into our daily food program. With the exception of some of the licensed retailers these are "middlemen" in the sense that it is their function to receive the commodities from the manufacturer, miller, mixer, or packer who has taken it from the producer, and to distribute it, through sale in smaller lots, to the retailer who deals directly with the consumer. As a group, therefore, these licensees occupied perhaps the most important place in the list of licensees of the Food Administration, and the problems connected with their regulation were the most varied and complex of all. The Division of the Food Administration in charge of their regulation was the Distribution Division, which included, among others, sections handling the following special problems: Wholesale; Coffee and Specialties; Retail; Commercial Conservation; and Baking.

Of the rules governing wholesalers, the most important one of those effective November 1, 1917, was the so-called "cost basis rule." The heading of this rule stated that it applied to

wholesalers, retailers and all other dealers in cleaned rice, rice flour, oleomargarine, lard, lard substitutes, oleo oil, cooking fats, condensed, evaporated or powdered milk, fresh, canned or cured beef, pork or mutton, canned peas, canned dried beans, canned tomatoes, canned corn, canned salmon, canned sardines, dried prunes, dried apples, dried peaches, and dried raisins; syrups, molasses, and clarified, plantation-washed and open-kettle sugars.

The rule as originally issued and effective November 1, 1917, read:

The licensee shall sell the above food commodities at not more than a reasonable advance over the actual purchase price of the particular goods sold, without regard to the market or replacement value at the time of such sale.

The theory upon which this rule was founded was that the very large profits returned from war conditions prior to our entry into the war established a fictitious basis of commerce in which prices were not checked by a proper operation of the law of supply and demand;

that sudden rises in prices often took place in the staple commodities handled by food distributors and enabled these distributors to make large unearned profits by the simple expedient of marking up the goods which they had in stock to the new price to which the stock had risen by reason of some new development in a very sensitive and abnormal market situation. As an example which clearly illustrates the condition under discussion, we may take the case of canned vegetables. Unfavorable weather conditions during the summer combined with a very hard early freeze, which totally ruined the crops in many sections, started a rise in the price of canned goods in the early fall. This was further augmented by increased requisitions by the Army and Navy of goods in the hands of packers. A general feeling that demand would greatly exceed supply resulted and the price of canned goods broke away from all reasonable limits and canned corn, peas, and tomatoes advanced to two or three times their normal prices.

It appeared that on account of the government requisitions and the early freeze many canners would be unable to deliver more than 25 to 50 per cent on their contracts, while some were unable to make any deliveries. Jobbers who had sold these goods to their customers for future delivery entered the market for spot stocks in order to cover their sales, and at the time the Food Administration took control of the situation indications were that canned goods would soon be a luxury and beyond the purchasing power of the majority of the people. While this was the condition of the market in the fall of 1917, a large part of the canned goods which would actually be handled by the wholesalers had been purchased under future contracts made in February and March of 1917 at prices in many cases 50 per cent below the prevailing market. Without restraint the ordinary course would have been for the owners of the lower-priced goods to mark them up to the higher price or the replacement value, and thus to exact from the consumers hundreds of thousands of dollars which represented unearned profits. The cost basis rule required the licensed wholesaler, jobber, etc., to forego these extraordinary profits and to sell his goods at a fair and reasonable profit above their cost to him.

Canned corn, which cost the jobber 90 cents per dozen purchased for future delivery, had to be sold on the basis of its cost, possibly at not more than \$1.05 per dozen. On account of short deliveries from packers and insufficient supplies in general, the jobber who

was thus compelled to sell corn at \$1.05 per dozen was at the same time bidding as high as \$1.80 or \$2.00 per dozen for the same grade of goods still in the hands of canners. This naturally resulted in the greatest confusion of prices. The jobber who was fortunate and who had received liberal deliveries on his contracts was thus enabled and required to quote prices to the retail trade far below those that could be quoted by the jobber who had to rely upon current purchases.

In order to avoid the extreme confusion that would have otherwise resulted, jobbers and retailers were permitted by an amendment to the cost basis rule to average the cost of all lots of goods of the same kind and grade purchased before the license rules became effective.

The Food Administrator took the view that no dealer should be permitted to take advantage of conditions that had arisen out of the war and to exact from the people of the country an additional tribute in the way of profits because of those war conditions. The rule above referred to was simply aimed at the prevention of this action which under these peculiar conditions could not be allowed. By limiting the dealers in food commodities to not more than a reasonable advance over the actual purchase price of the particular goods sold without regard to the market or replacement value at the time of the sale it was believed that most of these fictitious elements causing the changes in prices would be eliminated.

The principle thus applied at first met with great opposition on the part of the industries concerned. It meant of course the loss of possible profits of thousands upon thousands of dollars to many of the larger firms and was a radical departure from any principle under which they had worked in their business experience. At first thought it seemed very unfair to them that they should be compelled to sell goods in their stock at a price far below what it would cost them to buy the same goods in the market. Replacement value had so long been the rule that it was a very hard idea to dislodge from the minds of those in the industry. After many conferences, however, and after continued and oft-repeated emphasis upon the proposition that the conditions in the industry were due to the war and that no one should be allowed or should wish to make extra profits from war conditions, there was a general acquiescence in the principle and the rule was accepted without continued opposition.

The Food Administrator recognized that, as applied to fluctuating commodities, the rule was scientifically inexact. Its application,

however, appeared to be the only practical method of controlling the situation; and, in the absence of much fluctuation in prices due to the stabilization effected by Food Administration control during the war, the rule measurably accomplished its aim and well justified itself under the abnormal conditions of the period of its operation. The application of the rule, however, immediately raised another difficulty, and that was the definition of the word "reasonable." The general principles upon which one determines a reasonable profit are simple. It is a sufficient profit to preserve the incentive to capital to remain in, and so far as needed, to flow to that business, and no more. No measure of it can be applied to all businesses. No measure or average can fairly be applied to all concerns in the same line of business and no measure or average can even be applied accurately to any one concern at all times. It was not strange, therefore, that the demands made upon the Food Administration for an interpretation of the term "reasonable" and for a statement as to what should be considered unreasonable, were very insistent.

The first attempt at a definition of the term "reasonable" was made shortly after the promulgation of the rule. On November 27, 1917, the President issued an Executive Order authorizing and directing the United States Food Administrator, in prescribing regulations for licensees under Section 5 of the Food Control Act, "to find that a just, reasonable and fair profit is the normal average profit which persons engaged in the same business and place obtained prior to July 1, 1914, under free competitive conditions; to indicate, if he shall see fit to do so, what margin over cost will return such a just, reasonable and fair profit; and to take such legal steps as are authorized by said act to prohibit the taking of any greater profit." Under this authorization the Food Administration undertook the definition of unreasonable profits. This definition was that "any profit in excess of the average prewar normal profit of the business and place where free competitive conditions existed" is an unjust, unreasonable, and unfair profit.

The difficulty did not end with this definition, since the application of the definition involved many other confusing points. The determination of the standard that was thus set up involved calculations of back accounts and profits which in many cases were not available, and even when they were available it was difficult to determine exactly the profits realized. Some licensees had not been in business during the three years preceding the war; many others had

enlarged their business since that period; and in both of these cases they were compelled to rely upon standards set in the same line of business by others similarly situated, and accuracy in such a case was impossible. Again, since profits were limited to profits made "on an even market," any profits made by the merchant in prewar times from a rapidly rising market had to be eliminated from the calculation in the determination of the reasonable profits allowed. As a matter of fact it was quite impossible to establish in any particular case what had been the prewar nonspeculative profit, for all profits previous to the war had been subject to continually changing market conditions. From the standpoint of administration this rule was also unsatisfactory because it was practically impossible of enforcement. Except in clear cases of profiteering where it was not necessary to make an examination of the books in order to discover excessive profits, the only method of detecting violations was to examine the books of any licensee suspected. What was desirable from an enforcement standpoint was some definite standard by which to measure the prices being charged in order to detect infringement. From this standpoint a fixed price is, of course, the best, because the only fact necessary to determine, in order to find out if the rule is being violated, is the price at which the merchant is selling.

For the foregoing reasons, demands for some more definite designation as to what would be considered a reasonable profit continued to be made upon the Food Administration by the trade and this problem was the one which received more attention during the early months of regulation than any other having to do with wholesalers, jobbers, etc. In the case of flour and sugar upon which basic prices had been established by the measures hereinbefore described, it was possible to indicate a definite margin over cost beyond which it would be considered unreasonable for the licensed distributor to go on fixing his prices on these products. These limitations were not at first made in the form of rules but were merely made in the way of general announcements to the trade, in which the Food Administration stated that it would consider prices above a certain named price as unreasonable ones. This was the forerunner of the policy subsequently adopted of indicating maximum margins on most of the nonperishable products.

The proposal that the Food Administration should indicate margins which it would consider reasonable was of course pressed upon the attention of the Administrator many times. The objection of

this plan and the one which caused its delayed application was that the Food Administrator feared that the result of the announcement of an approved margin would be to cause all dealers who were selling at prices under the announced margins to increase their price to the basis of such margins. The costs of the various licensees differed greatly and depended upon the conditions under which the business was carried on, upon the locality, the efficiency of management, the size of the business, and other variable factors.

The solution finally reached was that both a higher- and a lower-maximum margin would be established on each commodity. The higher margin was to be the maximum for the licensee with the high cost and the lower margin to be the maximum for the licensee with the lower costs. Neither margin was to be regarded as a minimum in any instance, since the Food Administration wished full play to be given to competitive conditions in bringing the margin as low as possible regardless of the maximums established. Further than this the dealers were still subjected to the general rule limiting their profits to a reasonable or prewar basis.

The determination of the margins to be allowed required very careful computation by experts thoroughly acquainted with the wholesale and retail business. After much investigation and many conferences with the trade, the first announcement of margins applying to wholesalers of nonperishables was made on April 6, 1918, as follows:

	Maximum Margins Over Delivered Cost	
Sugar	15	-25 cents per 100 pounds
Wheat and rye flour	50	-75 cents per barrel
Lard, lard substitutes, bulk (packages of 50 pounds or over)	1¼	- 2 cents per pound
Standard hams, bacon	1	- 2 cents per pound
All flours (except wheat and rye)	}	8-10%
Lard and lard substitutes, in packages (less than 50 pounds)		
Condensed, evaporated milk	}	10-12½%
Rice, hominy, grits, oatmeal, rolled oats, cornmeal, beans, in bulk (packages of 25 pounds or over)		
Rice, cornmeal, hominy, grits, oatmeal, self-ris- ing flour, and rolled oats, all in packages	}	12-15%
Corn oil, corn syrup, and cottonseed oil		
Standard and extra standard licensed canned vegetables and pink, chum, and red salmon, and standard sardines		
Standard, choice, and extra choice dried fruits		

These margins were changed on June 6, 1918, as follows:

The maximum margin on sugar has been increased to 35 cents per 100 lbs. for Wholesale Grocers and Food Jobbers who actually perform, as to substantially all the sugar handled by them, the functions of buying, warehousing, selling, and distributing. But this maximum margin is not allowed where such service is not performed. Margins for sugar dealers are not changed.

Rye flour has been transferred to the 8-10% classification.

Prepared flours, sugar-house syrup, and mixed sugar and corn syrup, have been placed in the 12-15% classification.

All domestic sardines and all grades of licensed dried fruits are now included within the 12-15% classification.

ANTI-HOARDING RULES

Next in importance to the profit-limiting rules were those which interpreted for food distributors the limitations on quantities of supplies which they might hold. Section Six of the Food Control Act prohibited hoarding of foodstuffs and gave a general definition of the crime. The Food Administrator found it necessary, however, to define specifically for licensees the amount of certain commodities which they might control.

Rule 2 of the special rules applying to wholesalers, jobbers, etc., prohibited the licensee, without the written consent of the Food Administrator, from keeping on hand or having in possession or under control by contract or other arrangement, unsold food commodities in a quantity in excess of the reasonable requirements of his business for sale by him during a period of sixty days. Rule 3 further prohibited the licensee from selling a supply to any person if the sale should give to such person a supply in excess of his reasonable requirements for use or sale within sixty days. Rule 4 prohibited the licensee from making or having outstanding any contract for the sale of food commodities for shipment or delivery more than sixty days after the making of such contract. Canned peas, tomatoes, corn, salmon, and sardines, dried prunes, apples, peaches, and raisins, molasses in bulk, maple sugar and maple syrup were not included in these rules, but as to them the licensee or those dealing with him were permitted to have sufficient quantities to fill their reasonable requirements throughout the period of scant or no production.

The effect of these rules is obvious. They prevented unnecessary accumulations of commodities in the hands of dealers, artificial "scarcities," and the inflating effect upon prices of the withholding

of food supplies from the current market. While allowing the dealer a sufficient supply to meet the demands of his trade, they assisted in the accomplishment of the purpose of the Food Administration to "keep goods moving" from producer to consumer without undue hindrance.

UNNECESSARY REALES PROHIBITED

Another important regulation preventing the manipulation and withholding of commodities for the purpose of raising prices was General Rule 6, which read as follows:

The licensee, in selling food commodities, shall keep such commodities moving to the consumer in as direct a line as practicable and without unreasonable delay. Resales within the same trade without reasonable justification, especially if tending to result in a higher market price to the retailer or consumer, will be dealt with as an unfair practice.

In interpreting this rule for wholesalers, jobbers, etc., the following statement was made:

Any transactions that savor of trading in which a profit accrues to the dealer without corresponding service, are clear violations of the rule and will subject the offender to revocation of his license and to such other penalty as the law provides. A resale that is in keeping with one of the following principles will be considered under general rule 6:

- A. *Continuous service.*—The seller may customarily and continuously serve in less than carload lots wholesale grocers who are serving retail grocers but who are unable for some sufficient and legitimate reason to purchase direct from the source of supply.
- B. *Carload buying.*—A wholesaler or jobber may enjoy the benefit of carload rates from distant points and sell to smaller wholesale grocers who are unable to buy the commodity in carload lots.
- C. *Warehousing.*—A wholesaler or jobber may continuously and customarily furnish cold storage or other warehousing service and sell to wholesale grocers who have not adequate facilities of that character.
- D. *Surplus stocks.*—A wholesaler may dispose of surplus stocks bought, not for speculation, but in good faith for the reasonably anticipated requirements of his business under the rules and regulations and which he finds himself unable to dispose of to his regular customers. The fact that such goods have not been warehoused by such wholesaler will be regarded as prima facie evidence that they were not bought in good faith.

Only one resale permitted.—The distributor who purchases from a wholesaler or jobber must not, under any circumstances, resell the goods in question to a wholesaler or jobber but must distribute directly to retailers or consumers.

In addition to these special rules applying to the licensed distribu-

tors of the entire group of nonperishables, there were special rules applying to the licensed distributors of the following particular commodities: (1) sugar, (2) wheat flour, (3) corn and oats products, (4) dried beans and dried peas, (5) dried fruits, (6) canned goods, (7) green coffee, (8) oleomargarine and other butter substitutes, (9) sirups and molasses, (10) clean rice.

Sugar and flour.—The special rules relative to sugar and flour in addition to the rules limiting profits and resales were conservation rules which are considered elsewhere in this report.

Corn and oats products.—The special rules relative to corn and oats products provided for uniform contracts, which contracts required prompt delivery and observance of the Food Administration regulations by the parties thereto. Uniform packages for the products and specifications as to quality and manufacture of all of the products were prescribed. Another important rule required that a licensee shipping corn, barley, and rye products should ship them in such condition that they would arrive in good and merchantable condition except for circumstances beyond the control of the shipper.

Dried beans and dried peas.—Future dealing in the new crops of these commodities was regulated by rules forbidding licensees from buying or selling new dried beans before September 1 or dried peas before July 1 of the year covering such new crops. Contracts for delivery of imported beans or peas beyond 60 days after arrival were prohibited. The licensee was also required to deal in these commodities by the pound.

Dried fruits.—Licensees dealing in dried fruits were forbidden to buy, offer for sale, or have outstanding a contract for sale of new-crop fruits prior to July 15 of the year in which they were to be grown and packed, except in cases where the fruits were available for spot delivery. The facing of dried fruits in packages was also forbidden as a wasteful practice.

Canned goods.—The licensee was forbidden to quote for future delivery any canned peas, corn, tomatoes, salmon, or sardines before February 1 of the year when these products were to be canned.

Green coffee.—Dealers in green coffee were limited to reasonable profits, and the rule provided the limits of reasonable profits. Importers were limited to a profit of $2\frac{1}{2}$ per cent gross margin over cost and jobbers to a gross margin of 5 per cent over cost. The jobber's margin was raised on December 5, 1918, to allow a gross margin of $7\frac{1}{2}$ per cent.

Oleomargarine and other butter substitutes.—Dealers in these commodities were forbidden to sell at retail at more than a reasonable advance over cost, and a margin in excess of from 5 to 6 cents was prescribed as unreasonable. The manufacture and sale of these commodities in prints weighing less than one pound was prohibited.

Sirups and molasses.—Specifications as to quality were prescribed for these commodities. Other rules limited the sale, for conservation reasons, to four prescribed classes of buyers, and the licensee was required to ship the commodities in good condition.

Clean rice.—Contracts for delivery of imported clean rice more than 60 days after arrival were prohibited. Licensees were permitted to make quotations on imported clean rice by the pound only. Uniform packages were also prescribed for this product.

XIII. CONTROL OVER THE UNLICENSED RETAILER

Attention has already been called to the fact that Congress exempted from the licensing power of the Food Control Act retailers whose gross sales did not exceed \$100,000 per annum. This class of exempted retailers embraced more than 95 per cent of the retail dealers of the United States. Therefore the principal and most effective instrument of the Food Administration for regulating profits and trade practices could not be applied to the great body of distributors who come directly in contact with the consumer and whose prices are therefore the last word to the consumer.

The difficulty created by this exemption of the retailer from licensing was accentuated by that other outstanding weakness of the Food Control Act—the failure to provide a penalty for violations of Section 4 of the Act. Section 4, it will be remembered, made it “unlawful” for any person to engage in any discriminatory and unfair, or any deceptive or wasteful practice or device, or to make any unjust or unreasonable rate or charge, in handling or dealing in or with any necessities; or to exact excessive prices for any necessities. If there had been a penalty provided for anyone committing these unlawful acts, “profiteering” charges and practices by retailers could have been directly reached; but the mere declaration that these acts were unlawful did not act as an effective restraining force.

It became evident at an early date, however, that some means of exercising restraint over retailers would have to be devised to make effective the protection to the consumers and to carry through to them the benefits of the regulatory measures applying to distributors other than these retailers. Not only was it unfair to the licensed distributors that the restrictions placed upon them should operate to benefit the unlicensed retailer, but it was contrary to reason to allow the efforts of the Food Administration and the intent of the law to be thwarted, even if only in small measure, by an uncontrolled group of distributors with no peculiar or distinguishing rights. The task was made more difficult because some retailers assumed that since they were exempted from the licensing system they were to be unmolested and the Food Administration had no right to interfere with their activities.

There were two weapons available to the Food Administration as substitutes for the lack of power to control retailers. These weapons were: First, publicity, which included enlisting the retailer's active and patriotic co-operation as well as informing the public on fair prices and practices, thus putting under the ban of disapproval the unresponsive dealer. Second, the Food Administration had control over the retailer's principal source of supplies, viz., the wholesaler, jobber, and manufacturer of foodstuffs, with power to prevent their supplying the "unlawful" dealer.

These weapons were powerful enough to be satisfactory; but the difficulties with them were that they were unwieldy and slow to operate. Before either could be used, an immense amount of preliminary work of establishing control over the licensees and of educating the public and the retailer had to be accomplished. For these reasons, during the first few months of Food Administration control, retailers were very loosely controlled; but as time passed and wholesalers and other licensees were made more and more responsive, and the retailers were reached, educated, and organized through the various channels of organizations and publicity, the control grew rapidly in efficiency. By the summer of 1918 retailers were generally observing the purposes of the Food Administration, and by the fall of 1918 the system of improvised control was reasonably satisfactory.

The first step taken for the establishment of this indirect control over retailers was the promulgation of General Rule 17, which has already been referred to. This rule forbade the wholesaler or jobber from selling food products to a retailer who was guilty of violating any of the provisions of the Food Control Act. The retailers generally were not in a position to purchase more than a very small percentage of their supplies directly from the unlicensed grower. His supplies had to be obtained from licensees who were subject to this general rule. This meant that to the violation of Section 4, which provided that it should be unlawful to "make any unjust or unreasonable rate or charge, in handling or dealing in or with any necessities, . . . or to exact excessive prices for any necessities," there was attached a very serious penalty; namely, the cutting off of supplies received from wholesalers and jobbers, which meant the closing of the retailers' business.

The difficulties in the way of enforcement of this rule were very great. There was no exact standard which could be used by the

retailer to determine whether his sales were at a fair price. Nor could the wholesalers undertake a surveillance of the retailers' prices and profits to determine when they were exacting unreasonable ones. It was therefore incumbent upon the Food Administration to detect retailers who were committing practices within the prohibitions of General Rule 17 and to notify all licensed wholesalers of any retailer found guilty of those practices. During the first few months of Food Administration control this rule served principally as a deterrent to clearly unreasonable prices on the part of retailers and in only a comparatively few cases was its penalty invoked. When prices for retailers were later in 1918 worked out with more definiteness and announced for the guidance of wholesalers and jobbers as well as the retailers, the retailers were held to a more strict accountability.

During 1918, when the conservation program of sugar and flour was being strongly stressed, the retailer was subjected to closer supervision as to these commodities. General Rule 17 was amended on January 28, 1918, to cover wrongful dealing in any licensed food commodities; and under the extreme need for conservation of wheat flour and later of sugar it was ruled that any dealer failing to observe the rules of the Food Administration with reference to the distribution of these commodities was dealing in them wrongfully and therefore came within General Rule 17. Retailers found guilty of violating the substitute rules were warned and, where clearly guilty of intentional violation, were penalized.

Partly because of the lack of power to establish a satisfactory system of control over the retailer and partly because of a preference for a policy of securing the voluntary co-operation of the trades, special efforts were made by the Food Administration from the beginning to secure this co-operation from retailers. Representatives of the retailers were present at the conferences held preceding the promulgation of the rules and regulations of November 1, 1917, and under the inspiration of the patriotic spirit prevailing at these conferences representatives of the trade drew up resolutions expressing their intention of co-operating with the Food Administration whether they were licensed or not and pledging their efforts to secure the complete co-operation of the retail trade. Since these resolutions contain the standards of conduct and trade practices approved by the Food Administration for retailers, they are presented in full:

1. We will, whether licensed or not, co-operate with the U.S. Food Administration in every way possible to insure the enforcement of its rules and

regulations and the success of its conservation plans, and deliver to the consumers of the United States the necessities of life as cheaply as it lies within our power to do. We will earnestly and vigorously recommend all other retail grocers to pursue this course steadfastly.

2. We recommend that retail grocers discontinue the soliciting of orders during the period of the war.

3. We recommend the limitation of all deliveries to one a day to any one family or on any one route.

4. We recommend that under conditions and in localities where it is feasible, the cooperative system of delivery be employed.

5. We urge all retailers and their clerks to concentrate their efforts on selling wholesome and nutritious substitutes for white flour and meat.

6. We recommend that the retailers use their efforts to sell articles of food that are cheap yet of good quality in the place of high-price staples, and that in doing so they be guided by the recommendations of the Conservation Department of the Food Administration.

7. We urge the most strict economy in the conduct of all retail grocery stores, and constant effort to eliminate all waste and extravagant methods, to the end that time, energy, fuel, equipment, and men may be conserved, and that wholesome food may be placed in the hands of consumers at the lowest possible prices.

8. We recommend that retailers throughout the country and their associations, local, State, and National, cooperate to the fullest extent with the U.S. Food Administration and that they immediately express their purpose so to do by communicating direct with the Administration in Washington.

9. We express our appreciation of the support that has been given the Food Conservation work by the trade papers of the country and earnestly solicit their continued cooperation with the Food Administration.

10. We recommend that all retail grocers assist in the potato campaign of the Food Administration by urging the sale of that commodity this season.

11. We urge that all food products, where possible, be sold by weight in reasonably large quantities and for cash.

12. We recommend that all retailers urge the sale of such items as small prunes, cornmeal, oatmeal, rice, hominy and similar articles in bulk.

13. We ask all retailers to urge the sale of such articles as soup stock and materials, peas, rice, barley, fresh vegetables and fresh and canned cove oysters.

14. To the end that the country's industries and their workers may be maintained at the greatest efficiency, and that any unreasonable profits or speculation in food staples may be eliminated, we pledge ourselves to the United States Government not to sell any of the fundamental necessities (as announced by the President of the United States in his Licensing Proclamation of October 8, 1917) at a margin of profit over the delivered cost to the merchant that will yield to him more than a reasonable living profit, irrespective of the market conditions at time of re-sale; and we pledge ourselves to urge other grocers, whether under the licensing plan or not, to the end that margins of profit by retail grocers throughout the country over the cost to them shall not be greater than prevails under normal conditions. We urge

that each retail grocer act individually, and that he sell the staple foods at no greater profit than is reasonable in accordance with their cost, and his individual cost of doing business, as sanctioned by the U.S. Food Administration.

15. We earnestly urge the members and officers of every association of retail grocers as well as individual grocers in their respective communities to advocate these principles persistently in their local associations and to other retail grocers of the country in this grave national crisis when our country needs us most, we may not fail vigorously to uphold the needs of the Government and to do our utmost toward a speedy and triumphant conclusion of our war against Germany.

Copies of these resolutions were sent to all jobbers with the request that they distribute them to the retail dealers of the country. A practically unanimous response to this request was made on the part of the jobbers, and the number distributed indicated that all the retailers in the United States received one or more copies of these resolutions.

The Retail Section of the Distribution Division took up the matter of co-operation directly with the larger chain stores and the mail-order houses, and kept in close touch with the secretaries of all state and local retail grocers' associations. The co-operation of these various local associations was of special importance, as it enabled the dealers of the country to work out their problems of food control collectively among themselves under the leadership of men who were not afraid to cut profits in order to carry out the spirit of the Food Administration program. Perhaps the best policeman for the retailer was his fellow retailer, who was not only desirous of complying with the law in letter and spirit but was equally interested in seeing that his competitor should do the same.

THE RETAILERS' PLEDGE CAMPAIGN

One of the great advantages of the licensing system was that the receipt and possession of the license by the licensee brought to his attention in a concrete way his direct responsibility to the Food Administration for the conduct of his business in accordance with the prescribed regulations. As a substitute for this in the case of the unlicensed retailer a plan was evolved of securing from each retailer a pledge of co-operation with the Food Administration.

A large pledge poster entitled "War Conservation" was sent to all licensed jobbers with a personal appeal from the Food Administrator requesting that this pledge poster should not only be signed

and displayed but that each licensee receiving the same should also pledge the active co-operation of its entire sales force in obtaining similar pledges from all retail dealers as well as in personally distributing Food Administration literature and assisting in the education of retail dealers in the matter of active co-operation. In response to this pledge, cards were received from practically all wholesale dealers in the country. The number of salesmen reported by each house was used as a basis for the apportionment of the work of distributing the literature and obtaining pledges from the retailer. Each salesman was given a Food Administration button in recognition of his services. From this time on throughout the entire course of operation of the Food Administration, whenever the services of these 25,000 traveling salesmen were desired the material was mailed directly to the various jobbing houses in quantities proportionate to the number of salesmen employed and was thus distributed with little loss of material or time.

The following is quoted from a pamphlet issued by the Publicity Section of the Distribution Division explaining the reasons for this campaign:

The significance of this broad campaign is far deeper than may appear at first thought. It is indeed typical of the whole program of the Food Administration, in its insistence upon cooperation rather than coercion, upon the compelling force of patriotic sentiment as a means to be tried before resort to threats and prosecutions.

It has often been asserted that "democracy can not make war efficiently"; that before we can win, we must adopt autocratic methods. America today is fighting for democracy in a double sense.

It is striving to "make the world safe for democracy," and in doing this to prove beyond doubt that democracy can be efficient, that it can be so organized as to be infinitely more powerful than autocracy.

The great majority of American citizens engaged in supplying food to the people are both honest and patriotic—like the great majority of men engaged in any other legitimate business. They have been quick to come forward and pledge their full support. By the thousands they are joining the forces of the Food Administration, because they are glad to find a tangible way of guaranteeing this support.

All of this vast force of public opinion is being thrown into the balance on the side of fair merchandising and moderate prices, lifting into the strong light of exposure those few who are disloyal and dishonest. This is the democratic way of getting results.

It works somewhat more slowly. It is far more sure. And it leaves behind it, when the emergency has passed, not a trodden, broken-spirited people, but a people strengthened, purged, and inspired by the knowledge that they have won by their own endeavor.

In all, approximately 430,000 pledge posters for retail dealers were distributed through the services of the traveling salesmen of the wholesale grocery houses. The organizations of the State Food Administrators were, of course, utilized in this general campaign and a great many of these posters were distributed through the organizations at their disposal.

The pledge campaign was immediately supplemented by the distribution through the jobbers' mail of practically 1,000,000 copies of a brief war message issued to the retail trade and by a large postal card mailed directly to the retailers. Both of these communications re-emphasized the principles of co-operation with retailers and their duties under the law.

Through the organizations described above there were issued from time to time leaflets and pamphlets dealing with the general conservation problems as they applied particularly to retailers.

REGULATION OF RETAILERS

During 1918, when the conservation of sugar and flour was being strongly stressed, the retailer was subjected to closer supervision as to these commodities. General Rule 17 was amended on January 28, 1918, to cover wrongful dealing in any licensed food commodities, and under the extreme need for conservation of wheat flour and later of sugar it was ruled that any dealer failing to observe the rules of the Food Administration with reference to the distribution of these commodities was dealing in them wrongfully and therefore came within General Rule 17. Retailers found guilty of violating the substitute rules were warned and where clearly guilty of intentional violation were penalized.

Fair-price publication.—Perhaps the most widely known price-control work of the Food Administration was the novel system of semivoluntary control over retail prices which was gradually effected and extended throughout the country. This involved the determination of what a fair price should be and the communication of this price to the public through the press and otherwise.

As pointed out above, the enforcement of the prohibition of General Rule 17 as to prices and profits of retailers was a difficult and uncertain matter with no definite standard by which to measure the fairness of the retailers' charges.

The problem of making this control more definite and complete was given much study before a satisfactory system was worked out.

Early in October 1917, the Food Administrator for Illinois brought forth the plan of publication of prices on staple food commodities. After a meeting of wholesalers and retailers representing the different kinds of food distributors in Illinois, the following plan was evolved: From information given by the wholesale dealers the fair average cost to the retailer of a few of the principal staples was computed. With this information the volunteer co-operation and aid of a committee of the retail trade was obtained and an agreement was reached as to a fair retail selling price based on the ascertained cost. Publicity was then given to the price which the retailer paid and to the price at which he should sell.

On November 24, 1917, after several conferences in Washington, a similar plan was recommended to all Federal Food Administrators whereby both the retailers' cost and the price to the consumer should be published. This publicity was not a fixing of prices. It amounted only to an understanding with the retail distributors whereby they voluntarily agreed to a fair and reasonable margin for the sale of certain licensed foods. Price lists were published in a great many papers of the different states, and as published usually consisted of two prices. One price indicated a maximum for the retailer with the higher cost, and the other a maximum for the retailer performing less service or with lower costs.

On May 17, 1918, this idea was changed somewhat. In every county or other community for which prices were to be published a Price Interpreting Board was appointed, consisting of representatives of the wholesale grocers, retailers, and consumers, on which Board the County Administrator, or his representative, acted as chairman. Where feasible each class of the retail business was given a representative on this Board; that is, the small "cash and carry" stores, the credit and delivery stores, etc., and, further, the merchants of each class were permitted to choose their own representative. The retailer was thus charged with a proper responsibility for observance of the "fair" selling prices, because his representative was a party to the making of those prices.

These price-interpreting boards were assisted in their work by a list of suggested margins. Previous to the appointment of these boards the margins of profit were left to the interpretation by a committee of its view of a normal prewar profit with no guidance from the Food Administration except the presence and advice of its representatives and the specific margins announced on flour and sugar.

Under the new plan the Price-Interpreting Board had a list of maximum margins which the Food Administration suggested as fair, these margins being added to the cost as found by the Board and the resulting prices published. The prices were published for the guidance of the consumer as to the fair price at which any particular food commodity should be sold and in the event a retailer exceeded this price he was asked to give his reason therefor.

Finally, on November 7, 1918, after consultation with different retail organizations throughout the country a still further step was taken by the announcement to licensed wholesalers and to retailers of maximum margins, sales beyond which would be regarded by the Food Administration as prima facie evidence of excessive prices on the part of the retailer. These margins were of necessity higher than those actually received by retailers in some localities, since they were intended as guides for maximum prices which should be charged in any locality and were in no sense intended as indicating the proper price for all localities. To have made them smaller would have worked a great injustice on retailers carrying on business in localities where their costs were very high.

On account of the multiplicity of Federal Food Administrators and the work involved in price interpreting, special men were appointed in practically every state to have charge of this work. They appointed local committees to the number of over 1,200, such committees meeting at least once a week to interpret the prices applicable to their locality, using the revised list of margins published by the Food Administration as the maximum allowed, and making allowance for the variance therefrom because of local conditions. These prices were then published in local newspapers under the heading "Fair prices for _____ County."

Each committee was asked to send in the prices current in its locality to the United States Food Administration Statistical Division, where compilations of prevailing prices were made. In addition to this source of information the Statistical Division also received reports from volunteer price reporters appointed through women's organizations early in the establishment of the Food Administration. The compilations made from the figures received from price reporters when compared with the prices determined by the fair-price committees showed that the consumer was paying practically the price published in the fair-price list.

The success of this plan of control over retailers' profits as

finally worked out and in operation in November 1918 was very satisfactory and indicated that price interpretation was serving its purpose as a means for the protection of the consumer. Compilation of statistics and reports indicated that the prices which the price-interpreting committees prescribed as the maximum had been stabilized to such a degree that the difference in price in freight constituted practically the only difference paid by consumers in different parts of the United States. The success is also indicated by taking prices paid for the list of commodities shown by the consumers' reports from those states where price interpretation was not carried out to any great extent and comparing them with the average prices in neighboring states where the plan was in full force. It was found that practically without exception the prices were lower in the states where the plan was in operation.

It seems fair to conclude therefore that, through these various means and after the many experiments conducted by the Food Administration for the control of the unlicensed retailer, the system in operation in the fall of 1918 was one which accomplished the desired results and which would have functioned with increasing efficiency had the war continued for a longer period. It must again be emphasized that here is a particularly good demonstration of the fact that the Food Administration relied upon co-operation and education of the trades rather than upon coercion. The fact that the retailer could not be licensed was, of course, responsible for some of the voluntary measures in respect to him; but the success of the plan proves the soundness of the contention of the Food Administrator that the patriotic spirit of the people could be relied upon to carry out important measures of regulation.

XIV. PERISHABLE COMMODITIES

The commodities classified as "perishables" by the Food Administration were diverse in character, but their common characteristic is a tendency to deteriorate rapidly as compared with those commodities placed in the "nonperishable" group, such as cereals, sugar, and canned goods. The perishable commodities include: fish and other sea foods in fresh or frozen condition, but not canned, smoked, or dried; poultry, when purchased alive for slaughter, or when freshly killed or frozen; eggs, fresh, cold-stored, or frozen; fresh milk (but not condensed milk), butter, cheese, and other food products prepared from milk; fresh fruits, potatoes, and vegetables.

Intimately connected with perishable foods and treated as a section of the Perishable Foods Division of the Food Administration, was the cold storage industry, which is concerned with the preservation and seasonal equalization of many of these commodities; also the dehydration industry, which is closely connected with the preservation of fruits, potatoes, and vegetables.

The importance of the perishable group lay in their value as substitute foods for the more highly concentrated and less perishable foods upon which the emphasis was laid in the conservation program of the Food Administration. Wheat, meats, fats, and sugar formed the first line of defense; but the perishables were the indispensable reserves.

PROBLEMS IN PERISHABLES

The difficult problem in connection with perishables is presented by the extreme and rapid fluctuations to which the group is subject as to price, supply, quality, etc. From the first stage of production to the time the product reaches the consumer there are few factors in the perishable food industry which can be counted upon as definite and regular. On the farms a heavy frost out of season, a few days of cold rain, a high wind, or a week's drought and heat may turn a prospectively profitable crop into a failure.

After the commodity has reached the second stage on the road to the consumer, its troubles have just begun. Rapid movement is essential; risk of spoilage often forces sales regardless of price, and actual spoilage is frequent. Milk, most important of the group in

food value and invested capital, cannot be kept in a fresh state for more than two or three days without special precautions and extreme care. Fish spoils easily in unfavorable transportation conditions. Fresh vegetables of the more tender sort must move to consumer in a direct line and rapidly in warm weather and be protected from the cold in winter. In the case of the more staple vegetables such as potatoes and other root crops, or of winter apples, pears, or citrus fruits, the danger of spoilage is not so great; and yet improper packing, unusual delay, or weather conditions may ruin a carload of wholesome food between shipping point and consignee.

After the arrival of perishable commodities in the terminal markets, further difficulties frequently arise. It was not an uncommon practice for consignees to refuse to accept cars when the price had dropped or the market was congested. And it became necessary for the Food Administration to penalize breaches of contract of this nature which might result in deterioration or artificial prices. Many unreliable commission houses made dilatory returns or sold the goods to themselves without the consent of their principal. All of these practices tended to increase the cost to the consumer and were more or less successfully eliminated. Commission merchants were also prone to raise their customary percentage.

Perishable dealers met in conference with the Food Administration where these trade abuses were thoroughly considered and plans for correction devised.

It was, however, entirely impracticable to prescribe any margins or sales on the basis of cost. The demand for perishables is so uncertain and seasonable, the condition on arrival in the market so variable, that perishable dealers have many certain losses in their business which must be recouped by wider margins on other lots. Furthermore there is an entire lack of standardization which makes definite margins impossible.

The only method of profit control, therefore, was to require that, taking the season as a whole, the perishable dealer should not make any unreasonable profit on his business.

The problem of dealing with eggs, butter, poultry, and cheese was different in degree from other perishable commodities; and they might be said to be an intermediate class of semiperishables. Since these commodities went into cold storage the cost could be definitely determined and was in fact usually known in the trade. It then became possible to prescribe margins at which these stored goods

could be sold in the seasons of slight or no production. Thus through voluntary agreement with representatives of the butter-and-egg trade, certain margins were established for storage butter and eggs at the end of the 1917 storage season; and by conference with distributors a basis was reached for fixing maximum profits on storage poultry, eggs, butter, and cheese placed in storage after the Act came into effect. The effort of the Administration was practically devoted, first, to maintaining these maximum margins; second, to eliminating the inter-trading; and, third, to the closing of exchanges, which in these industries were more or less fictitious and subject to manipulation and did not fairly indicate the market price.

Through the efforts of the Food Administration there was built up a machinery which functioned and which prevented certainly the more serious abuses, supplying to some extent the lack of organization in the industry and among producers, and which assisted to maintain the public confidence in this most vulnerable of food industries.

FRUITS AND VEGETABLES

The principal problems in connection with the distribution of fruits and vegetables were those of marketing and transportation. In transportation great waste results from the fact that cars are lacking at necessary periods and that perishable commodities are not properly prepared for shipment. War conditions bringing a breakdown in transportation in the fall of 1917 intensified these difficulties, and the same conditions also created new marketing troubles. Speculation and hoarding received a natural impetus whenever there was a shortage; misleading market quotations were frequent; excessive commissions were charged on a rising market in many instances; prices rose unevenly and unnaturally; and the rejection of cars, on the ground of poor quality by the receiver, was a common practice when the markets were declining.

With the co-operation of the trade, various rules were drawn governing the marketing of fruits and vegetables. The willful substitution of under-grade goods in the filling of contracts was prohibited. Commissions and storage charges were controlled by the requirement that rates be filed with the Administration and be kept within fair and reasonable limits. Another rule prohibited false and misleading market quotations, which were frequently used to create fictitious prices.

Special attention was paid to the matter of the unnecessary disputes between shippers and dealers in the matter of the acceptance of shipments after they had reached the consignee. By rules effective January 28, 1918, licensees selling fresh fruits and vegetables to be shipped by common carrier were required to include in every contract of sale certain prescribed terms which defined the liability of the respective parties and definitely assigned responsibility as between consignor and consignee with reference to the quality of the goods and to the burden of locating the shipment on arrival, and prohibiting the rejection of shipments because of failure of the railroad to properly notify the consignee. Licensed dealers were not allowed to cancel contracts after goods had been loaded at the point of origin, nor was delay in transit a reasonable justification for rejection of shipments.

These rules were prepared, as were the other rules of the Food Administration, in co-operation with the trade after conference with representatives of those engaged in the business of shipping and receiving commodities, and were based on recommendations from them. They proved to be of great assistance to the trade and to the producer in the matter of settling disputes, which had always been one of the great sources of waste as well as a considerable hazard in the perishable industry. The favor with which these regulations were received by the trade was indicated by the numerous expressions of a desire on the part of dealers and shippers to have some regulations of this kind continue after the withdrawal of the Food Administration from the regulation of the industry after the Armistice.

POTATOES

Potatoes are more of a staple than any other vegetable, and they were given special consideration by a separate section of the Perishables Division of the Food Administration.

The crop of 1916 was one of the smallest on record and this small crop combined with the other high-price factors of the spring of 1917 caused an unprecedented high price at that time. The high price prevailing during the planting season in 1917, together with the belief that the war demand would be an unusually heavy one, caused a greatly increased acreage to be planted. Probably the total area planted with potatoes was more than 700,000 acres, an increase over the normal. The Department of Agriculture estimated a supply of ninety million bushels in excess of that for 1916.

The crop was injured by early frosts, long-continued rains, and heavy freezes coming before the end of the season. Much of this poor stock was placed on the market rapidly in the fall of 1917, with the natural result of a rapid decrease in demand. The size of the crop apparently justified the hope of lower prices. Many growers, and some dealers, refused to sell freely at a price which would stimulate an active market movement, both because of the increased cost of production and because of their confidence in a greatly increased consumption during the ensuing season. Abnormal transportation difficulties further complicated market conditions. Up to the first of February, 28,000 carloads of potatoes had been moved, while an adequate movement for the period would have been at least 50,000 carloads. Potatoes were piled up in the producers' hands and many consuming centers were supplied only by virtue of "war" gardens and stores carried over from the previous year. The industry suffered from many conflicting, fluctuating, and unexpected factors.

To bring as much order as possible into the distribution of potatoes the Food Administration encouraged the formation of growers' and shippers' associations, and assisted private enterprise in organizing them. From these new associations, as from the older ones, the efforts of the Administration received every encouragement. Various organizations employed traveling inspectors to assist in the elimination of wasteful practices.

One of the lines along which this co-operation manifested itself was the effort to improve transportation conditions. The usual "maximum loading" rules of the Food Administration had to be qualified with reference to potatoes by the phrase "consistent with safety," since to fill cars to their full cubical capacity would cause serious injury and heavy loss in a shipment of potatoes. Rules were also promulgated for dealers in potatoes prohibiting them from shipping potatoes which were not "practically free" from frost injury and decay. In order to secure accurate information promptly regarding the quantity of potatoes in transit and to be able to compare prices, as well as to have a more accurate measure of value for all sales, licensees were required to buy and sell potatoes by the pound rather than on the bushel basis.

Working with the growers' and shippers' associations, the Administration succeeded in making arrangements, in many sections, for the farmers to store their potatoes at points of shipment, so as to provide a more uninterrupted flow during the period when country

roads were broken up and hauling was difficult. With this object in view the Administration encouraged the building of municipal storage houses, to insure farmers against the necessity of dumping their crop at prices offered by the buyers who controlled storage, and to make it easier for growers to sell potatoes at prices just to the consumers. Aid was also secured from the Reclamation Service to enable project settlers to construct potato-storage houses. In all cases the Department of Agriculture pointed out to the growers various precautions that could be taken in the matter of storage to protect potatoes against decay, sweating, and other causes of waste.

To aid further in the solution of the storage and distributing problem, a plan was arranged after conferences with the Federal Reserve Board for classifying potatoes among the nonperishable staples under regulations for rediscounts provided for in Section 13 of the Federal Reserve Act. By this classification loans upon warehouse receipts for potatoes could be rediscounted at the Federal Reserve Banks and thus became negotiable paper throughout the country. Growers and local dealers were thus enabled to finance their own potatoes and the arrangement made possible the storage of a large amount of the fall crop which would otherwise have been forced upon the market because of the growers' and dealers' dependence upon the shippers.

The Federal Reserve Board required that potatoes upon which the rediscount privilege was allowed should be properly graded and packed. In addition to this requirement there were other factors which made the uniform grading of potatoes very desirable. The existence of ungraded potatoes from the growers had long been a cause of great waste. Potatoes below the salable size and quality and fit only for stock feed on the farm had spoiled whole shipments at the distributing points after freight charges had been paid on those shipments. The experience in sections which had practiced the grading of potatoes, as well as the experience of fruit growers in grading their product, argued for the adoption of such a system. With these facts before it the Food Administration ruled that all licensed dealers in potato-growing districts must adopt the standards adopted by the Department of Agriculture. This ruling received the endorsement of a large conference of shippers and met with the approval of the trade.

In the spring of 1918 there remained in storage and on the farm a large part of the 1917 crop of potatoes and it seemed likely that

if only the normal demand existed for these potatoes several hundred thousand bushels of them would not be consumed before the new crop became available. Obviously such a result would not only have caused a great loss to the growers and dealers but would also have greatly discouraged the production of a large crop in 1918. To meet this situation during the months of April and May the Food Administration carried on an intensive campaign to encourage the consumption of potatoes through the Federal Food Administration and their state organizations, through wholesalers, retailers, and the avenues of publicity of the Educational Division of the Food Administration. The consumption of potatoes was urged as a substitute for other foods, and wide publicity was given to the desirable points of potatoes as a food. As a result of this campaign not only were the surplus potatoes consumed but a great amount of other much needed and less perishable food was saved and the discouragement to the potato producer which had been feared was avoided.

POULTRY AND EGGS

As stated above, the supply of poultry and eggs comes mainly from millions of small units scattered over wide areas. The ranch or farm that specializes in poultry and eggs is of commercial importance in only a few restricted areas—in part of New England, the Middle Eastern states, and California—and the production in these states is only a small proportion of the total national supply. The thousands of different agencies required to carry these products from producer to consumer are largely unorganized and difficult to standardize.

For information concerning the conditions and problems in the poultry-and-egg industry the Food Administration largely relied upon the co-operation of producers and distributors. The National Poultry, Butter and Egg Association and various other associations and exchanges sent representatives to a conference in Washington shortly after the Food Administration was created. This was the first of a series of such conferences by means of which the trade advised with the Food Administration as to the conditions in the industry and the framing of regulations assuring proper distribution and curtailing handling expenses.

It is necessary to preface a consideration of the measures of the Food Administration with reference to poultry and eggs with a brief statement of the unusual features of the season before the Food Ad-

ministration was created. The high cost of feeds during the autumn of 1916 caused a heavy sale of pullets and hens. Buyers believed that the egg supply during 1917 would be small, that war demands would be heavy, and that increased consumption in this country would result from substitution of eggs for meat. Accordingly, large stocks of eggs were purchased for storage at high prices. The high prices checked consumption, and the result was that storage houses accumulated such stocks of eggs as had never before been held.

Experience has shown that spring eggs held in cold storage beyond the first of February deteriorate rapidly. The Food Administration was therefore concerned to see that these stocks of eggs moved from storage before this deterioration set in. Since high prices had been paid the producers, distribution could not be effected rapidly without loss to the trade generally. Conferences with the trade, urging that stocks be moved promptly at cost, if necessary, rather than to permit food of such high nutrient value to decay, as well as the publication of the facts of the case to the consumer, helped to move much of the 1917 storage stock of shell eggs. This was completed by the severe winter of 1917-18, when, for weeks at a time, receipts of eggs from country points were eliminated by the condition of country roads as well as the hazards of transportation by rail.

There were corresponding circumstances in 1917 in the supply of poultry. The cold wet spring had interfered with hatching, and the 1917 production remained below normal. This decrease in numbers was partially balanced by the fact that birds were allowed to grow heavier than usual before killing—a course profitable in sections where grain was plentiful. But the consumption of fresh poultry by producers and others was greater than the average, a result in part of the Food Administration's campaign for a saving of meats. Accordingly, a smaller volume of poultry reached the city markets in 1917 than in 1916.

On the other hand, the storage stock of poultry stored in the season of 1916-17 remained unusually large in the fall and early winter of 1917. Reports made to the Food Administration show that there was from one-fourth to one-third of the storage holdings of 1916 still in storage. This poultry like the cold-storage eggs, was stored when the prevailing price was high, and as a consequence the selling prices asked by the owners were so high that the public did not consume the usual quantity. The indications were that the owners would attempt to carry this stock over to another season, that is, into

the fall of 1918, rather than take the loss which would follow from the establishment of a price which would create a sufficient demand to consume the supply. The Food Administration did not look with favor upon the carrying over of this stock for several reasons.

First, it was obvious that the quality of the product would deteriorate if carried over another season; second, it was needed for consumption during the winter of 1917-18. And, third, the holding from one season to another of the large stocks was a violation of the hoarding provision of the Food Control Act. Reports were received from the cold-storage warehousemen of the amount of poultry in cold storage and the names of the owners thereof. After receipt of these reports, on November 15, 1917, the Food Administration mailed orders to the owners of this poultry requiring them to dispose of it as follows: At least half the turkeys were to be sold before Thanksgiving, and the remaining half before January 1, 1918. The other poultry had to be disposed of by March 1, 1918, at least 30 per cent being sold during November and December, 30 per cent during January, and the rest during February.

With regard to profit restrictions, the reasons above discussed for not prescribing maximum margins governing dealers in perishables generally applied also to dealers in fresh eggs and poultry. No maximum margins of profit on these commodities were prescribed; but the licensed distributors of them were subjected to the general rules prohibiting unreasonable profits. One of the causes of unduly high prices, namely, that of unnecessary resales, was particularly aimed at by a definition of General Rule 6. This rule required licensees to keep commodities moving to the consumer in as direct a line as practicable and without unreasonable delay. Unnecessary resales within the trade were declared to be an unfair practice. In interpreting this rule as it applied to the poultry-and-egg distributors, the Food Administration announced that it recognized the following classes of dealers: (1) original packers and shippers; (2) commission merchants and wholesalers; (3) jobbers and suppliers of hotels and institutions; (4) retailers.

Sales between dealers in any of these classes were prohibited except in certain defined instances. In no case was a dealer allowed to sell to a dealer in a class further removed from the consumer than the class in which the seller was included. For example, a jobber could not sell to a wholesaler, nor a retailer to a wholesaler.

Cold-storage poultry and eggs.—Dealers in cold-storage com-

modities were subjected to a more definite profit limitation than the dealers in the fresh poultry and eggs. The prices of eggs remaining in cold storage for the season ending March 1, 1918, were stabilized in the Chicago and New York markets by a voluntary agreement, made in January 1918, with a majority of the holders of these eggs to the effect that the rest of the storage eggs should not be sold above a certain price determined by the Food Administration as representing cost and a reasonable profit.

On March 2, 1918, rules were promulgated limiting the advance over cost on stocks of poultry and eggs coming out of cold storage. No restriction was placed on the prices to be paid for poultry and eggs intended for storage, as the Food Administration had no authority to limit prices paid to producers, even had it desired to do so. These profit limitations applied only to transactions after the first purchase until the poultry and eggs reached the retailer's hands. In brief, they provided: that the original storer of poultry and eggs in a cold-storage warehouse should be allowed as a maximum an advance over cost not to exceed 6 per cent; that a commission merchant selling frozen poultry for an original storer might receive a commission not exceeding 5 per cent of the cost of the poultry; and that a wholesaler, jobber, or supplier of hotels and institutions might receive an advance, over the cost to each dealer in such frozen poultry, of 5 per cent, 10 per cent, or 15 per cent, respectively. Similar restrictions were made for cold-storage eggs. With both poultry and eggs, trading between dealers in the same class was strictly limited, and commissions and brokerage, except as specifically allowed, was required to be paid from advances in cost and not added to them.

On October 22, 1918, an additional special rule was promulgated applying especially to licensed retailers of eggs and more specifically defining their profit limitations. This forbade the sale of fresh or cold-storage eggs at retail at more than a reasonable advance over cost without regard to the market or replacement value at the time of sale. The elements of cost were defined and directions were given for their determination. It was further announced that an advance over cost in excess of 7 cents per dozen for retail stores doing business on the cash and carry system, and of 8 cents per dozen for the credit and delivery stores, would be considered unreasonable. This limitation applied directly, of course, only to licensed retailers; but it was used as a guide by the Fair Price Committees and by wholesalers in determining the fairness of prices charged by the retailers.

Other special regulations applying to retailers in cold-storage poultry and eggs required the marking of these products when held in storage more than thirty days and forbade their sale except when clearly marked with the words "Cold Storage." They also required that a certificate of value should be furnished to the cold-storage warehousemen in order that proper determination of the amount which might be loaned thereon might be made.

All of the special regulations applying to distributors of poultry and eggs were canceled on February 14, 1919, and these licensees were released from license control by Proclamation of the President effective February 22, 1919.

DAIRY PRODUCTS

In addition to fluid milk, other important dairy products are butter, cheese, condensed milk, powdered milk, and casein. Before the war, the United States received dairy products from twenty-four foreign countries. The war not only reduced to a minimum our imports but also greatly increased our exports. "During the year ended July 30, 1916, exports of dairy products were valued at about 24 million dollars, with imports for the same period amounting to about 11 million dollars. At the end of the succeeding year, June 30, 1917, our exports had increased in value to about 49 million dollars and imports had shrunk to about 9 million dollars. Thus in one year the trade balance increased from 13 million dollars to 40 million dollars."* The difficulty of getting feed for their herds, as well as the demand for beef, resulted in great slaughtering of dairy cattle in both belligerent and neutral European countries. Added to this there was great destruction and confiscation of cattle in the occupied and devastated areas of Belgium, Poland, Northern France, and Serbia. (In Belgium alone the herd decreased from 1,800,000 to 700,000 in three months of German occupation.) This briefly was the world situation behind our dairy problem during the war.

Milk.—The importance of milk as an item in our national food program is enhanced by the sentimental value attached to it because of its absolute necessity as a food for babies and its use as a food for the sick. The reliance of these favored classes upon milk as a food causes the bitterest opposition and resentment on the part of the consuming public at any rise in price. This opposition expresses

* U.S. Department of Agriculture, *Circular No. 85*, January 31, 1918.

itself by a pronounced reduction in the consumption of milk when an increase of price occurs. It is upon the poor in the larger cities that this reduction of consumption falls with the greatest severity. Under the best conditions many children of these poor receive an insufficient amount of this food upon which they are dependent for their proper nourishment, and the reduction in consumption among them cannot but mean the undernourishment and the consequent actual suffering of vast numbers of these children.

With the increase in price of feeds and the increased profitability of beef cattle at the time of the creation of the Food Administration there was a more or less general demand and movement among milk producers for an increase in the price of their product. Approximately 50 per cent of the cost of fresh milk to the consumer is the charge for distribution; and the distributors, too, were proclaiming their rising costs and the necessity for an increased price. While both distributors and producers advocated the necessity for an increased price, each questioned the necessity for the increase as to the other party, and each sought to prevent a too marked increase by protesting the increased charge which the other demanded.

The consumer of course became a party to the argument and accused both the producer and the distributor of profiteering. In some of the larger centers the controversies became very bitter and often unreasoning. An increase in the price of milk when made was followed by a marked decrease in consumption, which not only resulted in suffering children but also dammed the supply back on to the farm with a loss to the producer, which encouraged the killing off of herds. It was feared the result would be the depletion of dairy herds, a result which the consumer could of all concerned the least afford to cause.

These were some of the elements of this problem which made it one of the most troublesome and intricate of all that the Food Administrator was called upon to consider. In the first place, the Food Administrator had no power to fix the price of milk to the producer even if a fair price could have been determined upon. The determination of a basic fair price to all producers was especially difficult because of the complexity of the dairy industry. "These complexities arise from the fact that in a considerable part of the industry the raw material in feeds, the labor, land and equipment employed are by-products of other major agricultural operations, and the commodities produced [from milk] are all in different circumstances

by-products to each other.”* But it was absolutely essential, in view both of the importance of the problem and the increasing danger of the situation arising from the uncontrolled controversies, that some solution of the difficulties should be reached. Numerous requests were made to the Food Administrator by producers and distributors of milk, condensers, ice-cream manufacturers, producers of butter and cheese, as well as the representatives of various state and municipal governments and consumers’ leagues, that the Food Administration undertake an administrative solution especially in those territories tributary to the large consuming centers. As the principal dispute seemed to center around the cost of production of milk and the cost of distribution, it was believed by the Food Administrator that definite results could not be obtained unless some tribunal was provided before which the parties might be heard and which should in behalf of the public reach conclusions as to the cost of production and distribution and base thereon price recommendations.

In November 1917 commissions were appointed under this plan for the New England district around Boston, the New York City district, the Chicago district, the San Francisco district, and, later, the consuming centers in Ohio. The agreement with the Food Administrator under which the commissions were appointed was that the price-increase schedule for December should not be put into effect until the commissions had reported and that the price prevailing in each district on the first of November should in the meantime remain without change; further, that they would abide by the decisions of the commission in their respective territories so long as they remained parties to the agreement for its appointment, but they were given the right to withdraw from the arrangement upon thirty days’ notice. The reports from these commissions came in singly. Each district had its distinct problems, and no uniform price could be established nor could uniform success in the handling of the situation be expected. The prices established by the commission were accepted in all districts for a few months and in some districts the commissions continued to function from the time of their appointment until the Food Administration withdrew from the situation in December 1918.

In New York the milk commission made its first report on January 1, 1918 and continued its activities until July 1, determining the price of milk from month to month upon the evidence brought before

* From address of Mr. Hoover at the National Milk and Dairy Farm Exposition, New York City, May 23, 1918.

it by the interested parties. During the month of May practically all the purchasers of milk gave notice of their withdrawal from the agreement; the commission discontinued its hearings after June 1, and the agreement came to an end on July 1. After this time the Food Administration suggested the advisability of determining the cost of producing fluid milk on the basis of the Pearson formula, a formula for determining the price of milk by averaging the cost of feed and labor required to produce one hundred pounds of milk. The producers expressed their willingness to adopt a formula of the same kind devised by Professor Warren of Cornell University, but the representatives of the various classes of purchasers of milk were unwilling to adopt a formula, and as a result no arrangement for its use was made. The parties then asked the Food Administration to act as mediator in arriving at a price. The prices offered by the producers were not accepted by the purchasers and vice versa; and this July conference ended without reaching any conclusion. After this conference the Food Administration suggested a price of \$2.70 per hundred pounds for milk in August and \$2.90 in September. These figures, which were arrived at through the use of the Pearson formula, were eventually accepted by the organizations and when approved by the Food Administration were announced through the office of the Federal Food Board in New York. The price charged to the consumers by the distributors was also arrived at by the Food Administration. For the succeeding months up to and including December 1918 the Food Administration continued to act as a mediator in the determination of prices with varying results.

In Chicago the parties to the arrangement for the appointment of a commission withdrew in March, and it was not until July 1 that another agreement was reached. Under this latter arrangement it was provided that the milk commission should use the Pearson formula in the determination of a proper price for milk to the various parties. This formula was applied during the succeeding months.

The commission in the New England district continued to function until December, when the Food Administration withdrew. In other sections of the country also the Food Administration was called upon to act as a mediator and to determine a fair price for milk. In most of these instances some such formula as the Pearson formula was applied in the determination of the price and this price was then announced as one which the Food Administration would consider fair.

Butter.—While distributors of butter who were subject to license

were licensed under the Proclamation of October 8, 1917, no special rules or regulations were promulgated with reference to butter before June 1918. The one exception to this was a rule relating to cold-storage butter and requiring licensees holding butter in cold storage more than 30 days to mark it accordingly.

During January 1918, after a careful investigation of the cost of storage butter, an agreement was entered into with the owners of this butter as to a maximum price at which it might be sold. Voluntary stabilization of the price of butter remaining in storage was thus effected through the wholesale merchants in the New York and Chicago markets. An assurance was given by the butter exchanges in the different parts of the country that corresponding prices would govern their transactions, allowing for traffic differentials. This stabilization plan was necessary in view of the short stocks of butter then existing in cold storage and of the liability of a rapid advance near the end of the 1917-18 cold-storage season.

In June 1918 this principle of fixing the price on cold-storage butter was applied to all cold-storage butter by special rules and regulations. These rules governed manufacturers, dealers, brokers, and commission merchants in this product. Under these rules butter was stored at cost or at its market value on the date of storage. The cost thus determined was the basis of allowable charges and margins which remained unchanged regardless of the advancing market conditions. The dealer was allowed, in addition to the return of his cost price, transportation charges, if any, interest on his investment in the butter at the current rate, his actual storage charges, and the actual cost of printing if the butter was put up in print form. Allowance of one cent per pound to cover shrinkage in weight and deterioration in quality was permitted provided the butter had been in cold storage two full calendar months; and for butter held in storage six full calendar months or over, a total storage margin of two cents per pound was allowed to accrue. To the cost price and the specific actual charges incurred the dealer was permitted to add certain designated margins aimed to provide for legitimate expenses of conducting his business plus a fair normal profit. These selling margins were maximum and could not be exceeded. They ranged from one cent per pound on carload sales (24,000 pounds) to three and three-fourths cents per pound for quantities of less than one hundred pounds. The advance in the butter market in the latter part of August 1918, which was brought about by the large amount of

butter requisitioned for the Army and Navy, illustrated the value of these price regulations. Under normal conditions the advanced price would have been added to all butter in cold storage regardless of its cost. Basing the estimate on the amount of butter in cold storage at that time, it is estimated that more than \$15,000,000 was saved to the ultimate consumer of cold-storage butter by the regulations of the Food Administration with no reduction in the price received by the producer for his butter fat.

In the month of July 1918 the butter rules and regulations were amended to include fresh butter produced in creameries. This, of course, did not include butter produced by farmers' co-operative creameries, which were not subject to license. On fresh butter, the charges of commission merchants were limited to from $\frac{3}{4}$ cent per pound on car-lot sales to $1\frac{1}{2}$ cents per pound on sales of less than 7,000 pounds. The manufacturer was forbidden to pay any dealer in butter fat a greater price than he paid to a producer who was a direct shipper performing similar services, and in no case could the price paid by a manufacturer to a dealer exceed 2 cents per pound above the price paid by the dealer to the producer of the butter fat. Thus the rules applied to the butter fat at the time and point of shipment by the farmer to the creamery and they continued to apply until the butter reached the hands of the retailer. Maximum margins were also prescribed for the retailer under the rule requiring butter to be sold at a reasonable advance over cost. This maximum margin for retailers was 6 cents per pound for stores conducted on the cash-and-carry system and 7 cents per pound for the retailer extending the extra service of credit and delivery.

Cheese.—Manufacturers, importers, and distributors of cheese were licensed November 1, 1917, but no special regulations applying to this commodity were put in force until June 12, 1918. On that date special regulations applying to manufacturers, distributors, brokers, and commission merchants in American and Cheddar type cheese were put in force.

The cost-basis rule was prescribed for sales of cheese, and a fair normal profit was provided, which profit, plus the cost of conducting business, could not exceed $\frac{3}{4}$ cent per pound on car-lot sales (30,000 pounds). From this car-lot maximum the margins gradually increased to cover the extra expense of conducting small quantity sales—the maximum margin being $3\frac{1}{2}$ cents per pound on sales of less than one hundred pounds.

Dealers, for the purposes of the rules, were divided into three classes: (1) manufacturers, (2) assemblers, wholesalers and jobbers, and (3) retailers, hotels, restaurants and institutions. Each step in the distributive function of the dealer was taken within the prescribed radius of margin set by the rules. Special consideration was given to the dealer who performed the services of both manufacturer and wholesaler, or of both wholesaler and retailer.

In the case of cold-storage cheese, marginal allowances were made to cover shrinkage in weight and business risk which amounted to $\frac{1}{4}$ cent per pound per month after the first storage month, but regardless of the term of storage not over 2 cents per pound could accumulate to offset storage risk and shrinkage.

Intertrading between dealers in the same class for the purpose of price advancement was prohibited; and no dealer was permitted to have on hand, either directly or indirectly, a larger quantity of cheese than was necessary to meet the reasonable requirements of his business.

Owing to the conflict between the trade practice of aging American or Cheddar-type cheese, to improve quality, with the hoarding provision of the Food Control Act, special permission was granted to retain certain 1917 cheese in storage for periods ranging from thirty days to six months depending upon each individual case.

Foreign-type cheese manufactured and distributed in this country, including Round and Tub Swiss, Block Swiss, Brick, Limburger and Münster, were placed under control and dealers in any of these types operated within a prescribed spread commensurate with services rendered.

The future of the American Swiss cheese industry was greatly benefited by a regulation which prohibited the dealer from purchasing ungraded cheese, doing his own grading, and selling according to grades determined in this manner. The demand for American Swiss, occasioned by the lack of imports of the native cheese, threatened serious consequences to the industry by reason of competitive buying before the cheese was sufficiently aged to determine quality. The rules required the retention of American Swiss by the manufacturer until quality was established.

STIMULATION OF PRODUCTION OF SEA FOOD AND FRESH-WATER FISH

Comparatively speaking, the United States is not a fish-eating nation. Its average national consumption, per capita, is 18 pounds a

year; whereas the United Kingdom eats 65 pounds of fish per capita, Canada eats 57 pounds; Sweden, 52; Norway, 44; Denmark, 39; and Portugal, 37. Most of our fish is caught on the seaboard and in the past most of it has been marketed there. The catch on interior lakes and rivers is only a little more than a tenth of the total. Of the total catch only a relatively small amount is placed in cold storage.

Because of this small demand, prewar production was limited, distribution to the interior took place only on a small scale, and there was no great incentive to develop the fisheries. With the great increase in prices of meat during the war, the situation was changed. Consumers sought fish in greater quantities than ever before. With the institution of the Food Administration's program of conservation through meatless meals, the substitution of fish for meat became a matter of patriotism as well as economy, and an added impetus was given to the demand for fish.

But with this increased opportunity for the fishermen in the way of a market other circumstances occurred which caused a decrease in their ability to meet even the normal demand. War needs drew many fishing vessels into the Navy. The industry, like many others, lost large numbers of workmen in the draft for the Army. Many additional sailors and captains, above draft age, because of their experience volunteered in the Naval Reserve. There was a shortage too in equipment—in gear and in linen nets. In certain sizes of nets the entire manufactured output was taken over by the War Department. There were added difficulties in transportation. Not only was the general railway situation perplexing through all of 1917, but the express companies made rulings in respect to the handling of sea-food shipments that caused a great deal of confusion and threatened an entire demoralization of the industry. The cumulative effect of these different forces was to leave production lagging behind the average when national interest called for the greatest production in our history.

On August 11, 1917, the day following the creation of the Food Administration, the Food Administrator appointed a staff member to take charge of the fish problem, and a Fish Section of the Food Administration was created. Conferences were held with the heads of the Bureau of Chemistry and the Bureau of Fisheries of the Department of Agriculture, and foundations were laid for co-ordinating the work and efforts of the Food Administration with the Department of Agriculture with respect to fish. Representatives of the in-

dustry were invited to meet in Washington for a conference with the Food Administration, and delegates to this conference took the first steps toward organization of their industry.

Plans were laid for a systematic interchange of information about markets and producing conditions between local fishing interests and the Federal Food Administrators in the states as well as the government agencies in Washington. Difficulties of transportation were considered and plans made for broadening distribution and marketing conditions. Appointment was recommended of committees on transportation in each of the states to keep in touch with railroads and express companies to report weekly. This conference was only the first of many to be held covering the principal producing and distributing districts of the country.

The most immediate problem in the industry was to meet the shortages in ships, men, and equipment. As a result of conferences with the War and Navy Departments, the Council of National Defense, and other government agencies, a number of necessary precautions were observed. The commandeering of fishing vessels was checked. New supplies of linen thread for nets were secured; by action of the British War Department, at the Food Administration's request, additional supplies were manufactured in Scotland, and the orders from American netting companies were placed on the same basis as British War Office orders. Assistance was extended to fishermen in all districts in the way of expedited deliveries of fishing gear, vessel renewals, and trap equipment. Supplies of coal, fuel oil, gasoline, and duck for sails were given a more rapid movement to the centers of production.

Conferences were also held with representatives of the Canadian Food Control, and an agreement was reached forestalling an embargo that would have prevented the annual exportation of a hundred million pounds of fresh-water fish from Canada into the United States.

Transportation problems were handled as rapidly as possible. By the Proclamation of October 8, 1917, distributors of fresh or frozen fish were licensed, and a rule governing licensees required cars to be loaded as heavily as would permit carriage without damage to the fish. Seventy-five per cent of the products of the industry were, however, moved in less than carload lots, and the most important transportation questions were those of movements of shipments by express. Restrictions by express companies on the shipment of fish, crabs, and oysters were removed or favorably modified. Differences between

shippers and carriers were satisfactorily reconciled at a conference arranged by the Transportation Division of the Food Administration.

Licensing of salt-water fishermen and stimulation of production.—All the foregoing measures were aimed at the elimination of handicaps of fishermen and the restoration of supply to a normal condition. Under the existing situation, however, production had to be greater than normal.

Perhaps the most important influence curtailing the fish production of the country was the restrictive state legislation prevailing throughout most of the salt-water fishing districts. For many years restrictive laws in the various states, particularly along the Atlantic Coast, had accumulated and shut out the use of many of the most productive kinds of fishing gear. In some of the states closed seasons on certain varieties of salt-water fish were being enforced at a time when supplies of these varieties were available in the shore waters in the greatest abundance. In many of the states restrictive laws against nonresident and alien fishermen made it impossible for vessels and equipment from one state to be operated in the shore waters of adjacent states.

By Proclamation of January 10, 1918, "all salt water fishermen not already licensed by the United States Food Administration, whether fishing independently or on shares, engaged at any period of the year, in the commercial distribution, including catching and selling, of any or all varieties of salt water fish including menhaden and of shell fish and crustaceans" were required to secure licenses on or before February 15, 1918. For the licensees under this Proclamation both general and special rules and regulations were promulgated on April 23, 1918.

The general rules which applied to all licensees in the salt-water fishing districts and sea-food-producing areas of the United States, including Alaska, and in Porto Rico and Hawaii, forbade wasteful practices in connection with the catching or marketing of fish, required the licensee to ship only wholesome sea food and to market all sea food taken, forbade the willful violation of contracts for sale of fish, and the willful damaging or destruction of any equipment.

The special rules and regulations issued April 23, 1918, were aimed at the stimulation of production of fish through the suspension of many of the state and local laws referred to above, which restricted fishermen both as to gear and equipment used and as to territory within which to operate.

It was the view of the Food Administration that the removal, for the duration of the war, of all state restrictions not absolutely necessary for the conservation of the fish supply, was an essential war measure. Great Britain had, through its Food Controller, taken a similar step earlier in the war. After consultation with the state authorities, and in co-operation with them, special license regulations were drawn which during their life superseded the state laws in conflict therewith, by reason of their promulgation by the federal government under the war powers.

For the purpose of these special-license regulations the waters of the Atlantic Coast were divided into three distinct districts, designated as "Atlantic Coast outside waters," "Atlantic Coast inside waters," and "Gulf of Mexico waters." For the "Atlantic Coast outside waters" and the "Gulf of Mexico waters" separate special license regulations applicable to each district were promulgated. These regulations permitted the licensee to fish in these waters more freely than under state laws, permitted the catching of all salt-water fish at all seasons with but few exceptions, and permitted the use of much equipment such as haul seines, gill nets, and otter trawls, which could not be used under normal conditions. With the exception of a few recommendations affecting the oyster production of the Gulf of Mexico district and the shrimp production of several of the Southern States, the regulations did not affect or modify the state laws governing the production of oysters, clams, lobsters, shrimp, or any other varieties of shellfish or crustaceans.

The same broad necessity for new regulations did not exist on the Pacific Coast and in Alaska. No modifications were made of restrictions on the halibut and salmon fisheries, as the existing laws were regarded as necessary to conserve the supplies of these varieties.

With regard to the inland fisheries, early in the fall of 1917 the Food Administration recommended to the various states that the substantial supplies of edible non-game fish available in those inland bodies of fresh water not already given over to commercial fishing should be brought into production and local consumption, through well-grounded action by the local fish and game commissions. In some of the states, as a result of the action recommended, production was greatly increased and additional supplies of fresh-water fish went into consumption in these districts.

Control over distribution of fresh and frozen fish.—In the matter of the control over the distribution of fresh and frozen fish, the

efforts of the Food Administration were principally directed to the elimination of waste in marketing, the securing of a more rapid and wider distribution, and the betterment of marketing conditions. There was nothing to indicate the taking of excessive profits by distributors in the fish industry during the five years preceding Food Administration control. There was, however, some danger of extreme prices with the unusual demand and short supply of frozen fish during the winter season of 1917-18. Distributors of fresh and frozen fish were consequently required to take out licenses by November 1, 1917, under the Proclamation of October 8, 1917.

Trade reports were received as to market conditions from all the principal distributing points, and a careful check was kept on the trend of prices by the Fish Section of the Food Administration during November and December, 1917.

Not more than 7 per cent of the total annual fish catch of the country is frozen and stored. The remaining 93 per cent of the catch is sold each day on arrival at the distributing centers and goes into immediate consumption. Wholesale prices on these fresh fish vary and fluctuate very widely in different parts of the country. The daily catch of all varieties is extremely variable, and is dependent almost entirely on natural factors such as food conditions governing the movements of fish, storm conditions, temperature of the water, etc. Under these circumstances the fluctuations from day to day even on one variety of fish, are considerable. Price restrictions, such as maximum margins of profit, could not therefore be applied to distributors of fresh fish with fairness or accuracy. The distributors were from November 1, 1917, of course subject to General Rule 5 of the license regulations forbidding a licensee to sell or otherwise handle any food commodity on an unjust, exorbitant, unreasonable, discriminatory, or unfair commission, profit, or storage charge.

A careful check was kept on the prices of distributors of frozen fish through reports required from licensees. Maximum prices were not prescribed, but cases of apparently excessive prices were investigated and a restraining influence over the distributors was exercised by calling their attention to General Rule 5 quoted above.

Licensees were required to sell fresh or frozen fish only by weight. Fish could be sold only under their true names. Only wholesome fish could be shipped, and packing plants were required to be kept sanitary; the cancellation of contract of purchase by the consignee after the goods were packed for shipment was forbidden.

Invoices of frozen fish distributors were required to clearly specify that the commodity sold was "frozen fish."

Upon the general policy of price and profit regulations of the frozen fish distributors, the following announcements were made by the Food Administration:

**RECOGNIZED FUNDAMENTALS APPLYING TO THE STORING AND
DISTRIBUTION OF FROZEN FISH**

Storers of frozen fish, whether storing at the producing districts or in the distributing markets, perform an important function in preserving the over-production of the various seasonal varieties for consumption during periods of scant production, i.e., the winter months.

They are a direct and potent aid in encouraging and fostering the production of the fisheries by enabling the various producing units to operate steadily and at full efficiency.

Broad differences in the first costs of frozen fish must prevail generally, affected as they are by the uncertainties surrounding production, influence of water temperatures, storms, feed conditions and many other natural factors incident to the industry.

The period of marketability is limited to the cold weather months. The pack of any one variety must be sold in competition with the total pack of all kinds of frozen fish throughout the country aggregating over a score of important varieties and many miscellaneous varieties. Marketing must also be carried on in competition with the daily supplies of fresh caught fish which fluctuate widely during the winter months.

No satisfactory determination of total storage stocks and average costs on most of the varieties of frozen fish can be reached until after the completion of the fall runs.

Storers of frozen fish and distributors must necessarily contend with these complex and uncertain factors. The business is so speculative in its nature and so variable in its results from season to season that ordinary methods of estimating margins of profit, whether upon particular varieties or the business as a whole are difficult of application.

The practice of the original storers in selling portions of their pack of particular varieties in advance of the termination of the season of flush production is a natural outgrowth of the uncertainty. It is a safeguard both for producers and storers and tends to remove some of the speculative features naturally inherent to the industry.

PRESENT POLICY OF REGULATIONS

The particular attention of the frozen fish industry is called to General License Regulations No. 1 (printed in a separate pamphlet) governing all industries licensed by the U.S. Food Administration.

1. The reports required from all licensees will furnish a basis from which to survey the operations of all licensees during the season of 1918-1919.

As the season progresses special reports will be requested whenever

deemed advisable. These will supplement our followup of daily quotations in the principal distributing centers.

2. With the approach of winter certain staple varieties of frozen fish stored in heavy volume will be given special consideration, and the U.S. Food Administration hopes, if such action is deemed to be desirable and practicable, to announce *maximum prices beyond which these particular varieties cannot be sold to the retailer or supplier of hotels and institutions*. Such maximum prices, when announced will be based on merchandise costs with due allowance for reasonable margins of profit.

Such maximums when announced must be accepted as guides only. They do not modify the rules and must not be regarded by storers or owners of relatively low cost packs as an invitation to take unreasonable profits.

Rule 5 of the General License Regulations provides as follows:

"The licensee shall not import, manufacture, store, distribute, sell or otherwise handle any food commodities on an unjust, exorbitant, unreasonable, discriminatory, or unfair commission, profit, or storage charge."

We call attention to the fact that storers of frozen fish in districts favored by a heavy average production will have acquired their stocks at a much lower cost than storers where the runs of fish have been short and unfavorable. The U.S. Food Administration will expect the rapid pushing of all low cost packs through the usual distributing channels early in the season, and under such conditions as will naturally bring about prices to the retailer and the supplier of hotels and institutions materially below any maximum prices which may hereafter be established.

3. Attention is also called to General Rule 6 regarding resales within the trade. The aim of the U.S. Food Administration is to keep the supplies or the various varieties of frozen fish moving naturally, freely and as rapidly as possible into consuming channels at the prevailing prices determined solely by an open, unrestricted market in each distributing district and without local or general manipulation and without advantage being taken by the trade of temporary emergencies creating artificial price conditions.

August 24, 1918.

XV. COLD STORAGE

Cold storage plays a very important part in the distribution system of practically all perishable products in the modern organization of the food industry. Great numbers of people live in limited areas, while food for these people is produced in great quantities in other sections often remote from the city market. At certain seasons of the year production is in excess of the demand and the temporary surplus must be handled so as to spread over the seasons of short production or of no production at all. Cold-storage plants are reservoirs necessary for the storage of food as well as for the stabilization of prices. Without an economical agency for preservation, much of the perishable food either would not be produced or, because of the low price resulting from marketing, the whole supply in the period of heavy production would be wasted because the demand at the time and the place of production could not possibly match the supply.

Opportunities for the manipulation of cold-storage facilities in a manner inimical to the public interest are not wanting. Placing commodities in storage warehouses is in itself very naturally a speculative action. The storer hopes and expects that at some date after the goods have been put away he will be able to market them at a price that will pay the expense of preservation and a profit. Should market conditions be unfavorable there comes a temptation to keep the goods in storage too long, to their detriment and to the dissatisfaction of the public when they are finally marketed (as in the case of poultry in the fall of 1917).

One of the principal defects in the warehouse system has been the practice of warehousemen lending to their customers the capital necessary to carry the goods stored. Many of the owners of the commodities stored operate on a limited capital, and it was not uncommon for the warehouseman to lend to the owners from 85 to 100 per cent of the value of the stored goods. This loan with added charges gave the warehouseman an interest in the goods in storage greater than their cost, and the opportunity to secure such loans led to many storage operations by irresponsible buyers and speculators. To make a profit on these purchases it was necessary to have a continual increase in price; and if the market did not rise to such a

level there was a great temptation on the part of the storer and warehouseman to hold on to the foodstuffs after the time at which they should have been marketed.

The war conditions emphasized the importance of the cold-storage business. Normal export business was disarranged, and the extraordinary demands for foodstuffs made it necessary to use the cold-storage facilities to the limit of their capacity. The Food Administration therefore called the warehousemen into conference, and as a result of this conference rules were worked out for cold-storage licensees under the Proclamation of October 8, 1917, which rules were designed principally to limit the chances for speculation and to identify cold-storage products.

Warehouses were divided into two classes, public and private. The former included houses that operated cold-storage plants in which food products were stored for compensation, and the latter those houses that operated plants exclusively for the storage of food owned or dealt in by themselves. Where a warehouseman acted in a dual capacity, not only receiving goods for others but also storing goods on his own account, he was required to be licensed also as a dealer in order that his transactions might be regulated by the Food Administration.

All cold-storage warehousemen were required to file schedules of their rates with the Administration and to give thirty days' notice before changes in rates became effective. The licensee was forbidden to charge, directly or indirectly, any different sum for storage or other services performed than that shown on the schedule filed with the Food Administration. Effective September 1, 1918, maximum storage rates were prescribed for cold-storage warehouses, except public and combined public and private warehouses having a capacity of less than 150,000 cubic feet. These maximum rates were prescribed for the different commodities stored by both the month and the season. Rates in force at the time this maximum schedule became effective which were higher than those in the schedule had to be reduced at once and new schedules filed with the Food Administration.

To do away with the practice above referred to of excessive loans made by many houses to the storer, it was ruled that loans made should not exceed 70 per cent of the market value of the commodities stored.

For the protection of the consumer additional rules were drawn

in respect to the marking and sale of certain cold-storage products. Upon all products of poultry, eggs, butter, and fish intended for storage, warehousemen were required to mark the date of receipt and to stamp the words "Cold Storage" thereon. Dealers were required to sell these products under the mark "Cold Storage" or "Cold-Storage Goods" and to transfer such markings on food commodities when they were divided into smaller lots for sale to consumers. No cold-storage warehouseman was permitted to receive for storage any food products apparently diseased or otherwise unfit for consumption. These rules made uniform throughout the country provisions that had previously been required by the laws of only a limited number of the states.

XVI. MEAT PACKERS

The action taken by the Food Administration to stabilize the price of hogs and to assure a minimum price to the producer is considered elsewhere in this report. As stated, that action was taken not for the primary purpose of profit and price regulation but to stimulate production. The cost of finished meat bears such a small relation to the price of the live animal that it was impracticable to base the profit regulation on the stabilized price paid to the producer, as was done, for instance, in the cases of wheat and sugar. The great variety of the packers' products also made it impracticable to determine the exact proportion of the total cost of the finished products which should be charged to each class of such products, and to prescribe a margin of profit above cost as was done in the case of other manufacturers.

The only available alternative plan of regulation appeared to be to prescribe a maximum annual percentage of return on the capital used in the business, together with a limitation of percentage of profit on total annual sales. Here again there were several perplexing obstacles to be dealt with. In the first place, the powers of the Food Administration were limited to a control of foods, feeds, and their derivative products; and the business of the packers, particularly of the "Big Five," was not limited to food products but extended to such commodities as hides, soap, leather, and like products. This necessitated a division of the packers' business into at least two classes—that subject to control by the Food Administration and that not subject to control.

Still another complication arose from the fact that packers are divided into two general classes as to volume and extent of their business—the large packers and the small packers. Obviously the same profit regulations could not be applied to both classes. The following statement with reference to this problem was made in the announcement of the Meat Division of the Food Administration on November 24, 1917:

There are in the country hundreds of packing concerns, many of them small, which slaughter live stock and sell meat, but are not large enough or strong enough to carry great stocks, nor do they carry their manufacturing processes in connection with live stock products to great refinements.

There are, however, five concerns relatively much larger, which have many establishments, storage plants, branch houses, cars and facilities for nation-wide distribution. These large packers do carry out to great refinements manufacturing processes in live stock products and allied products. Not only is their business more diversified and more stable than the smaller packers, but they carry at all times large stocks.

It is essential that the smaller packer shall continue his operations to the fullest extent, and his earnings, in view of his risk, must be liberal. The system of regulation which restricts his earnings must be simple and easy to apply. After investigation and consideration it has been determined to permit the packers (except the five large packers whom we shall speak of in a moment) to earn an annual profit equal to 2.5% of their total annual sales. This profit is to be net after expenses are paid; interest on money borrowed will be treated as an expense but not Federal taxes which the packer must pay himself out of his profits.

Packers were placed under license requirements by the President's Proclamation of October 8, 1917, with the exception of those whose gross sales did not exceed \$100,000 per annum. The rules regulating their profits became effective November 1, 1917.

For the five large packers, in addition to the restriction of profits to 2.5 per cent on sales, mentioned above, the further restriction was prescribed of 9 per cent on the average capital necessarily used in that part of the business subject to Food Administration control.

In order to define the portion of the business subject to Food Administration control, under the first rules issued on November 1, 1917, the business of these packers was divided into the following three classes:

Class 1 shall include:

- a) The slaughtering of livestock.
- b) Business in meats derived from slaughtered livestock.
- c) Business in any other food product in which the value of materials derived from slaughtered livestock constitutes one-fourth or more of the total value of materials.
- d) Business in inedible by-products of slaughtered livestock which have not been elaborated beyond the stage or condition in which it is common for concerns in the slaughtering and meat packing industry to sell such by-products in large quantities to persons or concerns not engaged in that industry, including specifically among others, business in hides, wool and goat hair, whether derived from slaughtered livestock or otherwise.
- e) Business in ice and refrigeration.
- f) The operation of refrigerator cars and other railroad cars used primarily for transporting products of Class 1.
- g) Any other business incidental to business of Class 1.

Class 2 shall include:

- a) Business in any product which contains no material derived from slaughtered livestock or only insignificant quantities of such material.
- b) Business in any food product in which less than one-fourth of the value of materials consists of the value of materials derived from slaughtered livestock.
- c) Business in inedible by-products of slaughtered livestock elaborated beyond the stage or condition specified in paragraph 1, clause (d), including specifically among others, business in soaps and other cleansing materials, glue, gelatin, glycerine, ammonia, sand paper, curled hair, gut string, pharmaceutical preparations, leather, commercial fertilizer, products made by the cutting, shaping or polishing of horn or bone, and products in which the products listed in in this clause constitute the principal materials.
- d) Business in packages, labels and advertising material for use in connection with business falling under Class 1 or Class 2.
- e) The operation of cars used primarily for transporting products of Class 2.
- f) Any business not specifically falling in Class 1 or Class 3.

Class 3 shall include:

- a) The raising, feeding and fattening of livestock.
- b) The slaughtering of livestock and the manufacture of any product in any foreign country, but the sale in any foreign country of products manufactured in the United States shall not be deemed to fall under Class 3.
- c) The operation of stock yards or of banks or of loan agencies or institutions.
- d) Dealing in options or future contracts on any board of trade or exchange.
- e) Any business which has nothing to do directly with food or with products of slaughtered livestock, or with any of the products or business falling under Classes 1 and 2, or which does not make use of the distribution and transportation facilities of Class 1.
- f) Investments in and income from any corporation or concern specified in Section 6, unless otherwise directed by the chief of the meat division.
- g) Any business which may hereafter be withdrawn from Class 2 by authority of the chief of the meat division.

The chief of the meat division will, from time to time, determine any question which may arise as to the proper classification of any given business not explicitly described in this section.

The licensee was limited to an annual profit of 9 per cent on that part of his business falling within Class 1 and to 15 per cent upon Class 2—the specialty business. The 9 per cent limitation fell upon

75 per cent of the business under regulation. In addition to these two classes there was Class 3, which was excluded altogether because the Food Administration had no power of control over it. Detailed rules were then prescribed as to the method of determining the transfer values and costs of business of the different specified classes.

The rules permitted the percentages of profit to be computed on the total capital used by the packer in the specified classes of business, including borrowed money. No deduction for interest charges could be made from profits, except "that any excess payment of interest on bonds, notes, bills, or accounts payable above a rate of five per cent per annum might be charged to operating expenses, this excess to be computed on the basis of the aggregate of such indebtedness of all kinds and the aggregate interest thereon." This rule was in recognition of the fact that the packers must borrow money largely on short-time paper to carry the large reserve stocks necessarily created for the Army and the Allies, and that business principle requires the earning on borrowed capital of a sum higher than the interest cost thereof. The food strategy necessary to the handling of war issues involved the increase of our exports to the Allies and our Army and Navy by over 250 per cent. In order that we should be prepared for any emergency it was necessary to call upon the packers to increase their stocks in storage. Furthermore, the program of stimulation of production, particularly of pork so critically needed for war purposes, and the maintenance of a stable minimum price on hogs involved the packers in much larger stocks than would normally have been acquired. All of this necessitated an increased borrowing on the part of the packers that would not have been called for had they conducted their business in the normal manner. For these reasons it seemed only fair and just that the compensation of the packers should bear some relation to their borrowed capital.

Provisions for payments or accruals of federal income, corporation, or excess profits taxes could not be deducted from profits or charged to operating expenses.

These profit regulations were formulated on the same basis as the regulations of other businesses under the control of the Food Administration, namely, that the maximum percentage of profit should be no greater than the prewar average earnings—that this industry like others would not be permitted to profit by reason of

the war. This limitation of 9 per cent on meat products meant that the packers would be limited to a profit of less than one cent per pound on these products, according to the best available estimates before the Food Administration, which were as follows: The combined five packers, it was estimated would, in 1918, kill 12,000,000,000 pounds, live weight, of animals, resulting in 7,000,000,000 pounds of meat products. A profit of one cent per pound would be \$70,000,000. The total investment of the five great packers was found to be \$853,219,000. Of this amount \$468,334,000 was borrowed capital. The total estimate of Food Administration maximum profit was \$87,443,000, from which an interest charge of \$21,407,000 would have to be deducted. This left a net earning possible under the regulations of the Food Administration of less than one cent per pound for the total of meat products. As it turned out, as hereinafter stated, owing to the regulation of selling prices, the net profit realized was not over two-thirds of the maximum allowed.

Attention must again be called to the fact that, in the determination of the profit limitations upon the packers, the food strategy of the war had to be given due consideration. These packers were handling the bulk of one of the prime food necessities of the war. It was necessary that they should carry large reserve stocks in order to meet possible emergency demands from either ourselves or the Allies. There was therefore an added risk and an extra burden placed upon them. Regulations of profits in advance had to take these facts into consideration, and could not be so severe as to discourage the rendition of this service or other co-operation.

In the determination of the 15 per cent limitation on the specialty business the Food Administration recognized that this great centralized industry is the cheap producer and that an administrative limitation of maximum profits in certain of their specialty businesses that would reduce them to certain popular ideas of earnings would throw into the hands of these centralized institutions all the business in these specialties by crowding out high-cost producers and thus would eventually reduce production or aggrandize monopoly. The Food Administrator took the view that one of the great dangers to the food trades of the United States was the continued expansion of these large packing industries and the elimination of smaller business and individual enterprise. Although it might have seemed sound war-time efficiency to encourage the cheaper production, the ill effects following the killing off of these smaller competitors

would, in the opinion of the Food Administrator, have more than counterbalanced the advantage of such efficiency.

AMENDED RULES

The classification given above in the first issue of the regulations was not, however, the classification allowed to stand. The difficulties of accounting under this classification proved to be so great and so confusing that a change was made by a set of rules issued November 1, 1918, which were made retroactive and effective November 1, 1917. These amended rules divided the packers' business into only two classes, namely, (1) edible and (2) inedible products. The edible classification, which was the only one subject to the profit limitation of 9 per cent, was as follows:

- a) Business in the United States in food derived from slaughtered live stock, including the sale in any foreign country of such products manufactured or produced in the United States.
- b) Business in the United States in ice and refrigeration.
- c) The operation in the United States of refrigerator cars and other railroad cars used primarily for transporting food products.

Supervision over the accounting of the packers was exercised by the Federal Trade Commission to see that the proper distribution of costs and transfer values was made between the two classes.

XVII. STIMULATION OF HOG PRODUCTION

As stated hereinbefore, matters concerned with stimulation of production were handled normally by the Department of Agriculture, while the Food Administration confined its attention to the handling of the product after it had reached the channels of distribution. In the exercise of its control over prices, however, the Food Administration was concerned with the most potent artificial regulator of production. Although, as explained in the preceding discussion on the measures of regulation, the control over prices was, in most cases, exercised only after the commodity left the hands of the producer, in the case of sugar, rice, dried fruits, and cottonseed, hogs, wheat, etc., stabilized prices to the producers were established with the concurrence and approval of representatives of the producers. Great care was taken to provide a stimulative price to the producers in all these cases. In addition this action allowed the stabilization of the price of the raw product and the establishment of a basis for the regulation of profits in its manufacture and distribution. In the case of wheat the fair price determined for the 1917 crop was maintained primarily for the purpose of stabilizing the price of wheat and limiting the price of bread, although just as in the case of the other products, the fair price agreed on with the producers was designed to and did stimulate production. For the 1918-19 crop of wheat the minimum price guaranteed by Congress was avowedly for the purpose of stimulating the production of wheat, and stabilization of the 1918 crop of wheat and its products was the concern of the Food Administration as the regulator of distribution.

We come now to the consideration of the stimulation of the production of hogs—the principal example of the use of the control over buying for our government and the Allied governments for the purpose of assuring a minimum price to the producer which would stimulate production. In this case the chief aim of the Food Administration was the stimulation of the production of hogs, and the stabilization of the price was effected with this end in view.

The exports of pork products for the three prewar years averaged 994,078,000 pounds, and for the year 1918-19 were 2,669,021,773 pounds. This export drain was enormous. Advices received by the Food Administration from various sources in 1917 indicated a real

and significant shortage of hogs in the country. For many months the receipt of hogs for slaughter by the principal slaughtering centers of the country ran from 7 to 10 per cent lower than during the corresponding weeks of 1916. The price of corn during the same months was the highest ever known in the country and the price of hogs was also the highest in our history. Both of these facts induced the farmer to ship for slaughter all available hogs ready for the market. The fundamental reason, therefore, why the receipts of hogs at the principal markets in 1917 were steadily below what they had been the year before was simply that the hogs were not available.

The principal food shortage in all European countries was in the fats. It was therefore evident that the world's demands upon the United States would steadily increase during the war, owing to the degenerating animal situation among the Allies and in neutral countries and the necessity of reducing shipments of feeding stuffs to the Allies in order to save shipping. A stimulation of the production of hogs offered the only practical means of obtaining the necessary increased production of meat and fats within the time limit. Considerable results could be obtained from the increased production of hogs within the space of a few months, while a much longer period was required for obtaining an increased production of dairy products and the sources of vegetable fats.

Hogs are in fact a corn product. The cost of production of hogs depends somewhat more upon the price of corn than upon any other factor. The relation between these prices appears from Table X on opposite page. Investigation disclosed that, owing to the violent fluctuations in demand for corn and hogs after the outbreak of the European war, there were five periods between the outbreak of the war and September 1917 in which it had been more profitable to sell corn than to feed it to hogs at the price of hogs then prevailing, while there were only three periods in which the reverse was true. In the preceding eight years there had been only two periods in which the sale of corn was more profitable than feeding it to hogs.

The results of these unprofitable periods was to retard hog production, as the grower was discouraged from breeding during those periods. The Food Administrator therefore determined that the maintenance of a proper relation between the price of corn and the price of hogs was the best method of assuring an increased production of pork.

TABLE X

ACTUAL AVERAGE MONTHLY PRICES OF CORN AND HOGS AT CHICAGO, 1913-1918*

CORN. MIXED. CASE NO. 3

(Per bushel)

Month	1913	1914	1915	1916	1917	1918
January	\$.4788	\$.6175	\$.7135	\$.7500	\$.9850	\$1.5975
February	.4891	.6169	.7325	.7375	.9950	1.6750
March	.4945	.6403	.7160	.7158	1.1243	1.6375
April	.5481	.6678	.7510	.7417	1.4722	1.5333
May	.5688	.6930	.7585	.7500	1.6466	1.4500
June	.6072	.7244	.7431	.7157	1.6921	1.4300
July	.6150	.7060	.7878	.7757	2.0478	1.5250
August	.7385	.8130	.8013	.8625	1.7917	1.6250
September	.7472	.7891	.7431	.8569	2.0881	1.5358
October	.6950	.7338	.6246	.9572	1.9944	1.2533
November	.7183	.6863	.6291	.9728	2.2500	1.2725
December	.6647	.6425	.6575	.9092	1.5935	1.4050

LIVE HOGS (BULK OF SALES)

(Per 100 pounds)

Month	1913	1914	1915	1916	1917	1918
January	\$7.4500	\$8.1750	\$6.8000	\$ 7.2500	\$10.8000	\$15.9750
February	8.1750	8.5500	6.6750	8.2500	12.4500	16.5500
March	9.1250	8.6000	6.7250	9.4500	14.3250	16.8750
April	8.8250	8.4750	7.2000	9.6250	15.6750	16.8500
May	8.5000	8.2375	7.4000	9.9500	15.9750	16.7750
June	8.6000	8.1000	7.4000	9.5750	15.1500	16.4250
July	9.0750	9.0000	7.1000	9.7250	15.2500	17.6250
August	8.3750	8.9000	6.9250	10.2250	17.2500	18.7500
September	8.3750	8.5750	7.3500	10.6000	18.2000	19.3750
October	8.2000	7.7750	7.7250	10.0500	17.1250	16.7500
November	7.8000	7.6250	6.6250	9.5750	16.9500	16.6250
December	7.7500	7.2000	6.3500	9.4250	17.0500	17.0000

* Quotations for corn, mixed, cash No. 3, are from the *Daily Trade Bulletin*, and those for live hogs (bulk of sales) from the *Bureau of Crop Estimates, Department of Agriculture*.

Furthermore, the violent fluctuations in the price of hogs tended to lift the price of hog products to the consumer unduly, for at every rise the stocks of hog products in warehouses in the whole country were marked up and the margin between consumer and producer was thereby increased. The stabilization of the price of hogs was therefore as necessary for the protection of the consumer of pork

through the reduction of this margin between producer and consumer as it was in the case of other products.

In order that the swine producers should have co-operative participation in the devising of plans, the Food Administration appointed a committee of leading producers and asked them to make an investigation and report as to measures which would constructively stimulate the production of swine. This committee reported on October 27, 1917, and the following is quoted from their report:

There is a marked feeling of uncertainty evident on the part of the producer. This is manifest in the large number of unfinished hogs now going to market. There is a big tendency to market potential breeding stock—breeding stock that is essential to further increase. The feeling of unrest and uncertainty on the part of the producer is greatly accentuated by the recent marked drop in price of live stock. First and above all, confidence should be instilled so that producers will feel that when their hogs are finished for market, they will sell at a fair price—at least sufficient to cover the actual cost of production and a fair profit. . . .

We believe that under normal conditions the ordinary laws of supply and demand should rule, but in this emergency situation the results desired come too slowly, and may be out of proportion to the urgent demands of the moment. Therefore, definite, artificial stimulus and regulation are necessary in order to secure the products needed; and to insure a fair and just relationship among producers, packers and consumers.

The Commission finds that the approximate, equivalent value of twelve bushels of No. 2 corn is necessary to produce 100 pounds of average live hog under average farm conditions.

While hog production for the ten years ending 1916 has been maintained on a ratio of 11.67 bushels of corn to 100 pounds of hog, we believe, when all the losses are taken into account, that it is doubtful whether there has been a profit on the business with this ratio on the average.

The normal number of hogs in the United States is approximately 65,000,000 as contrasted with the present supply of not more than 60,000,000. To bring swine production back to normal, the Commission believes that it will require a stimulative market which will pay at least the equivalent value of 13.3 bushels of corn for 100 pounds of average hog.

We further believe that the equivalent value of at least 14.3 bushels of corn must be paid for 100 pounds of average hog in order that production may be stimulated 15 per cent above the normal.

The best emergency method of stabilizing the market and preventing the premature marketing of light, unfinished pigs and breeding stock, we firmly believe, is to establish a minimum emergency price for good to select butcher hogs of \$16 per hundred pounds on the Chicago market.

The only instrument available to the Food Administration for making effective to the producer an assured price was an agreement with the purchasers of the Allies that they would take the pork

products purchased by them on a basis which would enable the packers to pay the necessary price to the producer. There was no power to fix prices by law nor to guarantee a price to the producer backed by money in the United States Treasury as in the case of the wheat guarantee. There has been considerable confusion on this point on the part of producers because of their tendency to assume that any statement from the government as to a price to be made effective was on the same basis as the wheat guaranty passed by Congress.

The Food Administrator did, however, with the approval of the President, effect the following control of the situation: The Allies agreed with the United States that their purchases of food supplies would be made through the Food Administration, as explained elsewhere in this report. They then agreed with the Food Administrator that their orders for pork and pork products might be placed with the packers at prices which would enable the packers to buy the hogs offered at not less than the minimum price upon which the Food Administrator agreed with the producer. The orders for our Army and Navy, and for other large buyers such as the Belgian Relief and the Red Cross, were also placed through the Food Administration, upon the same price basis, through an arrangement with these organizations. The packers then agreed with the Food Administrator that if these orders were placed with them at the stated prices, they would pay to the producer the minimum price announced by the Food Administrator. The order of these buyers called for from 30 to 40 per cent of the pork and pork products produced in the United States. Obviously the price paid for this large percentage of the production would largely determine the price for the entire amount.

With this power to control the situation, the Food Administration announced on November 3, 1917:

The prices so far as we can effect them will not go below a minimum of about \$15.50 per hundred weight for the average of the packers' droves on the Chicago market until further notice.

This price, it will be noted, was substantially the price recommended by the Committee of hog producers as the one necessary to meet the emergency situation and to stop the premature marketing of live, unfinished pigs and breeding stock.

This announcement of November 3, 1917, also contained the following as to the price of hogs farrowed in the spring of 1918:

We have had, and shall have, the advice of a board composed of practical hog growers and experts. That board advises that the best yardstick to measure the cost of production of the hog is the cost of corn. That board further advises that the ratio of corn price to hog price on the average over a series of years has been about twelve to one (or a little less). In the past, when the ratio has gone lower than twelve to one, the stock of hogs in the country has decreased. When it was higher than twelve, the hogs have increased. That board has given its judgment that to bring the stock of hogs back to normal under present conditions the ratio should be about thirteen. Therefore, as to the hogs farrowed next spring, we will try to stabilize the price so that the farmer can count on getting for each one hundred pounds of hog ready for market, thirteen times the average cost per bushel of the corn fed into the hogs.

This announcement further called attention to the fact that the Food Administration was not making a guarantee backed by money:

Fair prices to the farmer for his hogs, we believe, will be brought about by the full control which the Food Administration has over the buying of the Allies, our Army and Navy, the Red Cross, the Belgian Relief and the neutrals, which together constitutes considerable factor in the market. . . . Let there be no misunderstanding of this statement. It is not a guarantee backed by money. It is not a promise by the packers. It is a statement of the intention and policy of the Food Administration which means to do justice to the farmer.

The action of the Food Administration was immediately effective in checking the break in the price of hogs and in bringing this price up to the minimum and above.

During the months of November, December, 1917, and January 1918, the movement of hogs to market was unusually sluggish because of the congested transportation facilities and, further, because they were being held back on the farm to consume the large amount of soft corn resulting from the early frosts.

The increased number of hogs sold for inspected slaughter over the normal during the months of February, March, April, and May, 1918, amounting to 2,293,405, may therefore be attributed to the accumulated deficiency in inspected slaughter during the three months preceding.

The effect of the action of the Food Administration and the Department of Agriculture in stimulating the production of hogs began to appear in July 1918, and from that date on was very marked, reaching an increase over normal of 30 per cent. The increased marketing of hogs from July to December, 1918, inclusive, over that of the same months of 1917 as shown by the figures of

inspected slaughter prepared by the Bureau of Animal Industry, Department of Agriculture, was as follows:

	1917	1918
July	2,411,435	2,940,491
August	1,704,852	2,283,083
September	1,321,647	1,980,008
October	2,195,291	3,018,084
November	3,042,827	4,279,452
December	3,722,599	5,661,890
Total	14,398,678	20,163,008

By fiscal years the figures of inspected slaughter show the following:

1911-12.....	34,966,378	1915-16.....	40,482,769
1912-13.....	32,277,711	1916-17.....	40,201,018
1913-14.....	33,254,385	1917-18.....	35,543,037
1914-15.....	36,247,927		

Therefore it appears that though the total marketing of hogs for the fiscal year 1917-18 was almost 5,000,000 less than that for the fiscal year 1916-17, the marketing for the last six months of 1918 was 5,764,330 more than for the corresponding months of 1917. This increased marketing must be attributed in large part to the increased production resulting from the action of the government. The 1918 crop of hogs restored 7,000,000 of the 9,000,000 lost in 1917, and gave us an excess of hogs over the average supply, and only under the record of 1916, which was the high year.

The price assured to the farmers by the Food Administration was maintained uniformly from November 1917 to August 1918; that is, the price was not allowed to drop below the minimum which the Food Administration promised. There was a period in the early part of 1918 when it was very difficult to hold the market to or above this minimum; but through the strenuous efforts of the Food Administration in securing orders and with the co-operation of the packers, who carried an unusually heavy stock at that time, the price was prevented from dropping below the minimum.

In January 1918 the price fell to \$15.97, and it appeared to be doubtful if the Food Administration could maintain the announced minimum. By the exertion of special efforts, however, it was maintained, and the price for February averaged \$16.55.

Although it may appear that the price of hogs was raised to an unduly high level, a glance at the price of corn during the same period will show the justification for the price of hogs. Corn prices

from July 1, 1913, to June 30, 1914, averaged \$0.679 per bushel. In January 1918 the price of corn reached \$1.597 per bushel. This was an increase of 133 per cent. Within the same period the price of hogs rose from \$8.309 per hundred weight in the prewar year to \$15.975 in January 1918, an increase of 91 per cent. Assuming the soundness of the principle that the price of hogs should rise with the price of corn, it would therefore appear that the price received by the farmer for his hogs was not unreasonable nor a case of profiteering.

In August 1918 another crisis intervened. The full effect of the increased production was not felt until October, and it looked for a time as if hogs might reach the price of twenty-five cents per pound. When they did reach a price of almost twenty-one cents, the Food Administration did everything possible to limit orders and took such other action as it could through conservation measures in order to limit the upward trend in the interest of the consumers, upon the same principle as it had taken action to stem the downward trend.

About the time the Food Administration took this action of choking back the demand of European orders, the increase in the number of hogs began to show upon the market both because of the existing high price and the near approach of the marketing season. The crisis was past and the market began to decline. Again fearing the market would go too low, the Administration began to take counter measures to restore the stabilized price.

The complication which arose in the situation here was that the price of corn dropped rapidly owing to the current peace talk. The fact that the accumulations of low-priced corn in Argentina and South Africa would become available to the European market upon the advent of peace and liberated shipping caused a decline of from 25 to 40 cents per bushel in the price of corn. This decline spread fear among swine growers that a similar reduction would take place in the price of hogs through the incorporation of the 13 to 1 ratio. The increased marketing of hogs during October over that which had been expected made it very difficult for the packers to maintain the price agreed upon, and in the face of the excessive marketing some of the packers did not maintain the price.

The arrival of hogs at the seven great markets during the first three weeks of October was 27 per cent larger than in the corresponding month of the previous year, and the result of this glut was a failure for a few days to maintain the price basis agreed upon for

October. This breach could not be allowed to continue. It was a breach of faith with the producer only in the event that it was preventable, but the Food Administration was bound to take every possible step to see that the price was maintained.

It was decided that the attempt to maintain the price of hogs at an agreed ratio to the price of corn was impractical in the existing market condition and that it should be placed upon a new basis through consultation with the different interests concerned. A conference was called between the Live Stock Sub-Committee of the Agricultural Advisory Board, including special representatives of the swine industry, and the Food Administration, after which the following announcement of plans was made:

It is the opinion of the conference that in substitution of the previous plans of stabilization, the live-stock sub-committee of the Agricultural Advisory Board, together with specially invited swine representatives, should accept the invitation of the Food Administration to join with the Administration and the packers in determining the prices at which controlled export orders are to be placed. This will be regularly done. The influence of these orders will be directed to the maintenance of the common object, namely, the stabilization of the price of live hogs so as to secure as far as it is possible fair returns to the producer and the insurance of an adequate future supply.

After long negotiations between the packers and these representatives of the Agricultural Advisory Board and the Food Administration, the following undertaking was given by the packers relative to the price which they would endeavor to maintain for the month of November:

In view of the undertakings on the part of the Food Administration with regard to the co-ordinated purchases of pork products, covered in the attached, it is agreed that the packers participating in these orders will undertake not to purchase hogs for less than the following agreed minimums for the month of November; that is, a daily minimum of \$17.50 per hundred pounds on average packer's droves, excluding throw-outs. "Throw-outs" to be defined as pigs under 130 pounds, stags, boars, thin sows and skips. Further that no hogs of any kind shall be bought, except throw-outs, at less than \$16.50 per hundred pounds. The average packers' droves to be construed as the average of the total sales in the market of all hogs for a given day. All the above to be based on Chicago.

We agree that a committee shall be appointed by the Food Administration to check the daily operations in the various markets with a view to supervision and demonstration of the carrying out of the above.

With the signing of the Armistice on November 11, 1918, a very considerable change in the situation as to demand occurred. Prior to this time the Allied governments had been anxious to take all the

pork products which available shipping space would carry in order to build up a reserve against the future which would insure them a supply in the event of further curtailment of shipping through the fortunes of war. The cessation of fighting under the terms of the Armistice removed this fear of the future and the consequent necessity of building up a large reserve of the more important food commodities. There was in consequence a tendency on the part of the Allies to reduce their purchases. This presented a very serious problem for the Food Administration during the months of December, January, and February. The agreement with the producers would not be fulfilled until the hogs raised in reliance upon the assurances of the Food Administration were marketed. This fact was vigorously presented to the Allies, together with the fact that the promise of the Food Administration had been made for the purpose of increasing production to meet their demands. Some of the Allied governments failed to meet their obligations, but vigorous efforts by the Administration in Europe disposed of the surplus and maintained the assurances.

At the same time pressure was brought to bear upon the Food Administration, by well-meaning persons within the United States, to drop its stabilization plan and allow the price of hogs and pork products (as well as cottonseed and rice) to return immediately to their normal control by supply and demand. While this would apparently have been in the interest of the consumer at the time—since the congested conditions of the market and the filled warehouses of the packers would have no doubt forced a lower price, particularly if the Food Administration ceased all efforts to place orders—the loss to the producers would have been enormous and in many cases ruinous. The agreement with the producers was made to increase production for the benefit of the Allied consumer as a war necessity and it was only just that he should help to pay the price for that benefit.

For these reasons the Food Administration maintained its control and made every effort possible to sell the surplus pork in order that the price to the producer could be held. The War Trade Board was somewhat reluctant to maintain its export restrictions during the months of January and February, but without these restrictions the entire plan of the Food Administration would have fallen. This restriction, which was that no pork could be exported except at the prices approved by the Food Administration, created the control

over all export prices; and if it had once been removed and free exportation allowed, the price of all export orders would have been broken and with that break the domestic situation would have been uncontrollable.

The American Relief Administration which had been in the meantime created in Europe made advanced purchases which saved the market. These orders, together with some orders from the Allies and with careful allocation of the orders to relieve congested situations, enabled the Food Administration to carry through its program to March. It was estimated that by the first of April the entire crop of hogs produced under the stimulus of the assurance of the Food Administration would be marketed. With the cessation of the heavy runs to market in February 1919 and the increased foreign orders, the danger of a bad break in the market to a lower level began to disappear and the signs indicated a change in the other direction.

The War Trade Board was unwilling to continue its export restrictions after the first week in March; and, since with its cancellation the control of the Food Administration over the situation was lost, the Food Administration discontinued its attempts at the same time and from that time forward the market was uncontrolled.

With the major hog run disposed of, the Food Administration had acquitted itself of its obligation to the producers. On the other hand, the control of speculation also revolved around the control of exports and the Food Administration opposed the removal of the embargo; for with completion of the major marketing season and the opening of speculation it appeared that pork products would rise unfairly to the consumer. This did happen; but the Food Administration was powerless to intervene and therefore abolished all control.

XVIII. THE CANNING INDUSTRY

The canned-food industry occupied a place of great importance in the maintenance of the food supply of the nation because of the desirability of its products for the military and naval forces as well as for the civilian population. Canning was, furthermore, of great importance as a means of conserving perishable foods which might be used as substitutes for the more concentrated nonperishable foods, thus saving much of the latter for export.

Before the creation of the Food Administration, conferences were held with canners in Washington under the auspices of the Council of National Defense, and a War Service Council of Canners was created which acted for the industry in the early reservation of orders for the Army and Navy and kept the industry advised of developments in the food orders and the regulations which directly affected it. On July 5, 1917, Mr. Hoover issued a statement to the canners calling attention to the service which they might render by making an extraordinary effort to take care of the supply of raw products for canning and to place canned goods on the market at a reasonable price.

Canners were not placed under license by the Food Administration until November 1, 1917. A Canned Goods Division was, however, one of the first divisions created by the Food Administrator and through this division and through many conferences with the canners the problems of the industry were given close attention before it was licensed. The rise in price in canned foods in 1916 and 1917 was as great as, but probably not greater than the rise in price of other food commodities. Attention has already been called herein to the rise in price of these goods in the hands of wholesalers and jobbers. The principal check on prices in the hands of the canners was that exerted by the voluntary co-operation of the trade with the Food Administration in the attempt to keep prices down and the influence of orders placed for the Army, the Navy, and the Marine Corps at the fair price determined on a basis of an investigation of costs by the Federal Trade Commission. Despite all attempt at limitation, however, profits in the canning industry in 1917 showed a large increase.

The canning industry is composed of thousands of small units,

and it does not require a large concentration of capital. The produce to be canned must be obtained in its fresh state direct from the grower, so that the radius of operation of the average canner is necessarily small. In order to assure a supply for his plant, the canner contracts with the neighboring growers for the crop of a certain number of acres to be planted for the production of a named commodity. These contracts are customarily made in the early winter. Having made his contracts the canner buys his stock of cans, packing cases, machinery, labels, and other such supplies for his season's pack. Since many of the canners are men of small means, they find it necessary to borrow most of the money for these purposes from the local banks. Before lending the money the banks often require the canner to assure himself of a market by making contracts with responsible distributors for the sale of his commodity. Practically, therefore, the canner's pack may be sold before the crops for the raw product to be canned have been planted. The Food Administration recognized that this practice was the outgrowth of unalterable conditions in the industry and that it served as a safeguard both for the farmers and for the canners. The usual Food Administration rules prohibiting future contracts more than sixty days in advance were, therefore, not applied to canners.

By the Proclamation of October 8, 1917, canners of peas, dried beans, tomatoes, corn, salmon, or sardines whose production exceeded 5,000 cases per annum were licensed. By the Proclamation of January 10, 1918, the license requirement was extended to those whose production was above 500 cases per annum. The rules promulgated November 1, 1917, prohibited the licensed canner from selling for future delivery more than 75 per cent of the normal yield of the acreage under contract or to exceed 75 per cent of the capacity of his plant.

Because of the conditions described above, and especially because of the widely diverse costs on which the thousands of different plants operated, the matter of regulation of profits of the canners was a particularly perplexing one. Aside from the fixing of prices on orders for the government, no attempt at price regulation was made by the Food Administration in 1917 beyond the rule forbidding the licensed canner from selling goods manufactured and on hand for more than a reasonable advance over the cost thereof without regard to market or replacement value at the time of sale.

For the 1918 pack, however, an attempt was made to prescribe

a more definite limitation. The Federal Trade Commission, at the request of the Food Administration and by direction of the President, made a thorough investigation of costs in the canned-foods industry and reported thereon in April 1918.

It was impossible to establish control over the raw products of the vegetable-canning industry because of the limitation of the Food Control Act exempting producers from control, and also because the raw product is produced by such a multitude of producers under varying conditions that voluntary agreements were impracticable. But, even with such control over the raw product, only a small proportion of the final cost would have been affected, since, as before stated, other factors are more important in the cost of the canned product than the cost of the raw material.

It was accordingly decided that, using the information gained through the investigation of costs by the Trade Commission as a basis, maximum net margins in terms of cents per dozen cans would be prescribed for the trade as their profit limitation. On May 1, 1918, these maximum margins were announced to the trade and it was further pointed out that the future-sales contracts which they had outstanding should not be consummated at higher prices than the cost plus the maximum margins announced.

In view of the little reliable information on the individual canner's costs, it was essential to the enforcement of this profit limitation that a check be obtained on the accuracy of the canner's sales-price basis or statement of cost. The canning industry felt that it would be desirable to submit to the Food Administration the future contracts showing sales prices for examination and approval, so that they might proceed with the knowledge that their prices would be acceptable to the Food Administration. It was not possible, however, to determine in advance what would be reasonable prices; for, no matter how careful an estimate of cost may be made, the crop is not determined until actually put up and therefore the Food Administration could not undertake to approve these prices in advance.

In lieu of this examination of contract in advance, the Food Administration prepared a blank-cost statement for the canners which when properly filled out gave an accurate analysis and survey of the different items of cost and the true-cost basis. After making out his cost statement, the canner was required to check his sale prices against the total of his cost and permissible margin and, if his price was in excess thereof, to revise his prices downward. In

other words, his cost statements submitted to the Food Administration furnished the canner with the basis for his sales prices.

These cost statements were sworn to by the licensee as to their accuracy. They were further checked by the Food Administration; and, where they appeared excessive, and particularly where the costs claimed were considerably in excess of the average for the canner's district, a special investigation was made.

A further check was provided by the purchaser from the canner, who was aware of the Food Administration ruling requiring revision when warranted; and when the buyer felt that he was not receiving an adjustment due him, an appeal to the Food Administration would call for a special investigation of the costs of the canner concerning whom the complaint was made. In a few cases there were attempts to hinder and delay the investigation of the Food Administration, but only a comparatively small number of cases resulted in punitive action by the Enforcement Division of the Food Administration.

In determining the extent of the revisions in price made, a questionnaire was sent out to the canners asking for a report on these revisions. The results reported in this way justified the confidence of the Food Administration in the voluntary co-operation of the trade. More than \$7,000,000 was shown to have been voluntarily cut off from the canners' sales price in compliance with the maximum margins prescribed by the Food Administration. This amount of money saved to the consumers on canned peas, tomatoes, and corn of one season's pack by reason of the supervision of the Food Administration and the co-operation of the industry give but an indication of the enormous sums saved in the aggregate through the co-operation of the food industries as a whole.

CANNED SALMON

The profits of this industry in 1917 were perhaps the largest in its history. The shortage of the pack together with the increased demand from all sources ran the price up to an unusual level. The Food Administration was unable to take any definite action as to prices on the 1917 pack because it entered the situation too late and also because it was not possessed of sufficient information upon which to base intelligent action. The only restraint exercised was that resulting from the control over sales to the government and the general

rule applicable to all canners requiring them to sell at a reasonable advance over cost.

For the 1918 pack a more definite control was possible and necessary in order to protect the consuming public as well as the military forces of the United States and the Allies at a time when the demand for this class of food was very great. The Food Administration appointed a committee consisting of the Federal Food Administrators of California, Oregon, Washington, and Alaska, together with a representative of the Canned Foods Division of the United States Food Administration. This committee made an investigation as to the maximum prices which should reasonably be paid to the fishermen for the raw fish taken from the various streams in this territory.*

Having determined a reasonable basis for the cost of the raw material, the committee investigated and recommended the amount which should be allowed to cover the cost of converting raw fish into canned salmon. This conversion cost which included an allowance for the hazard of the business, together with a reasonable profit to the industry, made it possible to establish the maximum prices at which canned salmon could be sold. The recommendations of this committee were analyzed and a comparison was made with the figures of the Federal Trade Commission; and, as it was believed that these recommendations would provide an ample profit to stimulate the packing of salmon, the maximum prices for canned salmon so recommended were adopted and announced to the trade. In any enterprise that is as hazardous as salmon canning which includes not only the unusual risks of conducting operations in dangerous localities but depends also on the uncertainty of the run of fish, it is extremely difficult to ascertain in advance reasonable estimates of costs; but, rather than require that selling be prohibited until costs were actually known, this basis was adopted in the joint interests of the many factors involved.

MAINE-CANNED SARDINES

In 1917 through an agreement with the packers a maximum price was established of \$5.60 per case for one-quarter oil canned sardines. In 1918 before the determination of the maximum price for the

* It should be noted that with respect to fishermen the limitation of the Food Control Act exempting producers from control did not apply. Although producers, they were also distributors and the Food Administration therefore held that the exemption applying to other producers did not apply to the fishermen.

canned sardines it was decided to establish a price for the raw fish. The federal Food Administrator for Maine called a meeting of the fishermen in April 1918 at which it was decided to recommend to the Food Administration that a maximum price of \$25.00 per ton be established for the raw fish for the 1918 season. The recommendation was accepted by the Food Administration and the announcement was made to the trade that the Food Administration would consider a price above \$25.00 per ton for the raw fish as excessive. An arrangement was also made with the Canadian fishermen that this maximum price of \$25.00 should apply to the Canadian fish as well.

Having established this basic price, the Food Administration instructed the federal Food Administration for Maine to call representatives of the sardine canning industry into conference in order that they might choose a representative committee to go to Washington to consider maximum prices for canned sardines with the Food Administration there. Such a committee was selected, and any canner feeling that he was not properly represented by the committee was requested to go personally. At the conference in Washington, held on June 5, 1918, maximum selling prices were agreed upon between the Food Administration and the industry which were to remain in effect for the entire season.

CALIFORNIA-CANNED SARDINES

Following the procedure established in Maine, the head of the Canned Foods Division of the Food Administration went to California and there met a committee of nine, composed of three representatives of the fishing interests, three representing the canners, and three representing the consumer. The three representatives of the consumer were prominent members of the boards of trade of San Pedro, Long Beach, and San Diego. This committee recommended to the Food Administration in October the following prices as being both reasonable and stimulative to production: \$30.00 per ton for small size fish (under 7½" long); \$15.00 per ton for larger size fish (over 7½" long); \$10.00 per ton for fertilizer purposes. Based on these prices for raw fish, maximum prices for the canned sardines were recommended by the industry and accepted by the Food Administration.

CANNED TUNA

Similar procedure was followed in the case of this fish as in that of sardines. The situation was complicated somewhat there by a

strike of the Japanese tuna fishermen in July 1918, which interfered considerably with the pack and made necessary the granting of a bonus of \$10.00 per ton on albacore and blue-fin tuna.

A full statement of the maximum prices established for these various canned goods is contained in the following, which is a copy of an announcement made to the licensees by the Canned Goods Division on November 1, 1918:

ESTABLISHED PRICES—CANNED GOODS DIVISION

The Canned Goods Division has prepared the following, which shows what has been done in establishing prices on commodities under its supervision:

CANNED SALMON

Conferences were held with the State Food Administrators and fishermen on the Coast and maximum prices were adopted which were as follows:

RAW FISH

Alaska

Section	Kings	Reds	Cohoos	Dogs	Pinks
Bristol Bay	.40 each	.07 per fish	.07 each	.04 each	.02 each
Herendeen Bay ..	.25 each	.12½ per fish	.12½ each	.08 each	.04 each
Central Alaska ..	.50 each	.12 per fish	.12 each	.05 each	.04 each

Yukutat:

Over 15 lbs....	.40 each	..	..	..	..
Under 15 lbs...	.15 each	.12 per fish	.12 each	..	.01½ each
Southeast Alaska.	.09 per lb.	.32 per fish	.32 each	.09 each	.06 each

Oregon

	Columbia River	Rogue River
Chums	3½ cents	All grades 6¼ cents
Chinooks	3½ cents to Sept. 10	Chinooks 5 cents to Sept. 20
	5 cents to Sept. 20	...
Then	6¼ cents	
Silversides	6¼ cents	...
Steelheads	9¼ cents	...

Washington Coast Streams

	Chinooks	Prices per Pound Cohoos	Chums
Gray's Harbor	6¼ cents	6¼ cents	3 cents
Willapa Harbor	6¼ cents	6¼ cents	3 cents
*Tohola	5¾ cents	5¾ cents	3 cents
Noclips	6¼ cents	6¼ cents	3½ cents
Queets River	4½ cents	4½ cents	2½ cents

* 80 cents per box to be paid for hauling to Noclips including return of empty boxes.

After reaching a basis for maximum prices to be paid to the fishermen, a committee consisting of three State Food Administrators, Mr. Deming, who represented the Division of Coordination of Purchase, and Mr. Warren, who represented the Canned Foods Division, investigated packing costs in Alaska and the following maximum prices on the different grades were established.

CANNED SALMON

Alaska Salmon	No. 1 Talls	No. 1 Flats	Halves, Flat
Reds	\$2.35 per doz.	\$2.50 per doz.	\$1.65 per doz.
Medium Reds	2.25 per doz.	2.40 per doz.	1.60 per doz.
Pinks	1.65 per doz.	1.80 per doz.	1.15 per doz.
Chums	1.60 per doz.	1.75 per doz.	1.10 per doz.

Since the Alaska prices were established the following maximum prices have been established for Salmon caught in Oregon waters and Salmon caught in Washington waters:

Columbia River and Oregon Coast Streams

	No. 1 Talls	No. 1 Flats	Halves
Fancy Spring Chinooks.....	\$3.15 per doz.	\$3.25 per doz.	\$2.00 per doz.
Standard Spring and No. 1 Fall Chinooks	2.75 per doz.	2.85 per doz.	1.75 per doz.
Blue Backs .....	.....	.....	2.00 per doz.
No. 2 Fall Chinooks	2.30 per doz.	2.40 per doz.	1.50 per doz.
Silver Sides	2.40 per doz.	2.50 per doz.	1.60 per doz.
No. 3 Chinooks and Chums.....	1.75 per doz.	1.85 per doz.	1.10 per doz.

Puget Sound and Washington Coast Streams

	Talls	Flats	Halves
Fancy Springs or Chinooks.....	\$3.15 per doz.	\$3.25 per doz.	\$2.00 per doz.
Standard Springs or Chinooks...	2.75 per doz.	2.85 per doz.	1.75 per doz.
Cohoos	2.40 per doz.	2.50 per doz.	1.60 per doz.
Chums	1.75 per doz.	1.85 per doz.	1.10 per doz.

CANNED SARDINES

Eastern

The Maine State Food Administrator early in this year called a conference of the fishermen heavily interested and a price of

\$25.00 per hogshead for raw fish

was established as the maximum price to be paid by the packers.

A little later a committee representing a very large proportion of the Maine Sardine packers appeared before Mr. Munn and a voluntary maximum price was established of

\$6.50 per case for one-quarter oil canned sardines.

Later the Canadian authorities adopted the American prices as maximums.

Western

The Sardine situation has recently been handled in California by Mr. Munn in conferences held with the fishermen and packers and the basis is as follows:

Maximum prices for Raw Sardines

Under 7½ inches	\$30.00 per ton
Over 7½ inches	15.00 per ton

Based on these Raw Fish prices, the following maximum Canned Sardine prices were approved:

	Tomato	Oil
Quarter Round	\$3.25 per case	\$3.35 per case
One-half Round	4.00 per case	4.15 per case
Ones Round	5.75 per case	6.00 per case
Ones Oval	7.25 per case	....
One-half Oval	5.50 per case	....

CANNED TUNA

The Tuna situation was handled by conferences with the fishermen at which the maximum prices for Raw Tuna were established as follows:

Raw Tuna

\$110.00 per ton for Albacore and Blue Fin Tuna
and \$100.00 per ton for all other Tuna

Later the canners were gotten together and the prices on Canned Tuna were established as follows:

Canned Tuna

48/1's	\$3.37½ per doz.
48/½'s	1.90 per doz.
48/¼'s	1.25 per doz.

CANNED CORN, PEAS AND TOMATOES

It has been impossible to reach the grower. The canner, however, has been on the basis of maximum margins of profit as announced in Bulletin No. 38, issued by the Canned Goods Division on May 1, 1918, which reads as follows:

Based on the views of the Federal Trade Commission of reasonable profit and the Food Administration's valuation of reasonable crop hazard insurance, the following maximum margins in cents per dozen cans are announced for licensed canners between cost and selling price. Excess of these margins will be considered unreasonable under the Food Control Act.

Cost shall not include income and excess profits taxes, interest on investment, interest on long-term notes, or crop hazards.

<i>Corn (per dozen cans):</i>	Cents
No. 2, standard	19
No. 2, extra standard	22
No. 2, fancy	30
<i>Peas (per dozen cans):</i>	
No. 2, sub-standard	average all sizes..... 15
No. 2, standard	average all sizes..... 22
No. 2, fancy	average all sizes..... 31

NOTE.—Greater margins on smaller sizes of peas, offsetting less margins on larger sizes, will be allowed, provided the average does not exceed margin announced.

<i>Tomatoes (per dozen cans):</i>	<i>Cents</i>
No. 2, standard	18
No. 2½, standard	22
No. 3, standard	27
No. 3, fancy	31
No. 10, standard	90
No. 10, fancy	100

NOTE.—From the margins on standard tomatoes a deduction of 5 cents per dozen on Nos. 2, 2½, 3, and of 15 cents per dozen on No. 10 shall be made for the sub-standard grade.

While profits shall be reasonable, the Food Administration adopts the general principle, applicable to all important producing agencies, that profits must be sufficient to encourage production.

These margins are believed to be ample to provide a fair stimulative profit to the canners, with due consideration to labor difficulties, crop hazards, and the peculiar uncertainties incident to this industry.

We emphasize the fact that the margins are maximum margins and must be considered as guides only. They do not change the rules.

This industry, like all others subject to license, should be guided by the general principle that what would have been a satisfactory profit in the prewar period on an even market, under freely competitive conditions, should be the standard to-day, and no maximum named as a guide should be accepted as an invitation to exceed this former standard.

The practice of selling the pack, or a large proportion of it, in advance of its production is an outgrowth of conditions existing in this industry. It is a safeguard, both for farmers and for canners, and the practice, properly conducted in accordance with the rules and regulations of the Food Administration, tends strongly to remove the dangerous speculative features otherwise incident to the business.

CANNED MILK

Because of the depletion of dairy herds in Europe and other natural demands growing out of the war, the demands upon the United States for canned milk were practically unlimited in amount, and much beyond the capacity of our prewar production. In response to the demand new plants were put in operation and our production increased enormously. The exports of canned milk showed a larger percentage of increase than any other food commodity. Table XI (p. 281) shows this increase by months during the last three years of the war. It will be noted that from a prewar total export of 17,792,569 lbs. annually we increased to approximately 45 times this amount for the fiscal year 1918–19, or a total export for that year of 809,694,703 lbs.

Manufacturers and large distributors of canned milk were under license control from November 1, 1917, to January 10, 1919. The commodity was one of those included in the cost-basis-profit rule for licensed distributors, effective November 1, 1917; and in June 1918 a definite margin of 8 to 10 per cent was prescribed for these distributors, as hereinbefore noted. Licensed canners were also subject to

CHART 4.—UNITED STATES EXPORTS OF EVAPORATED AND CONDENSED MILK

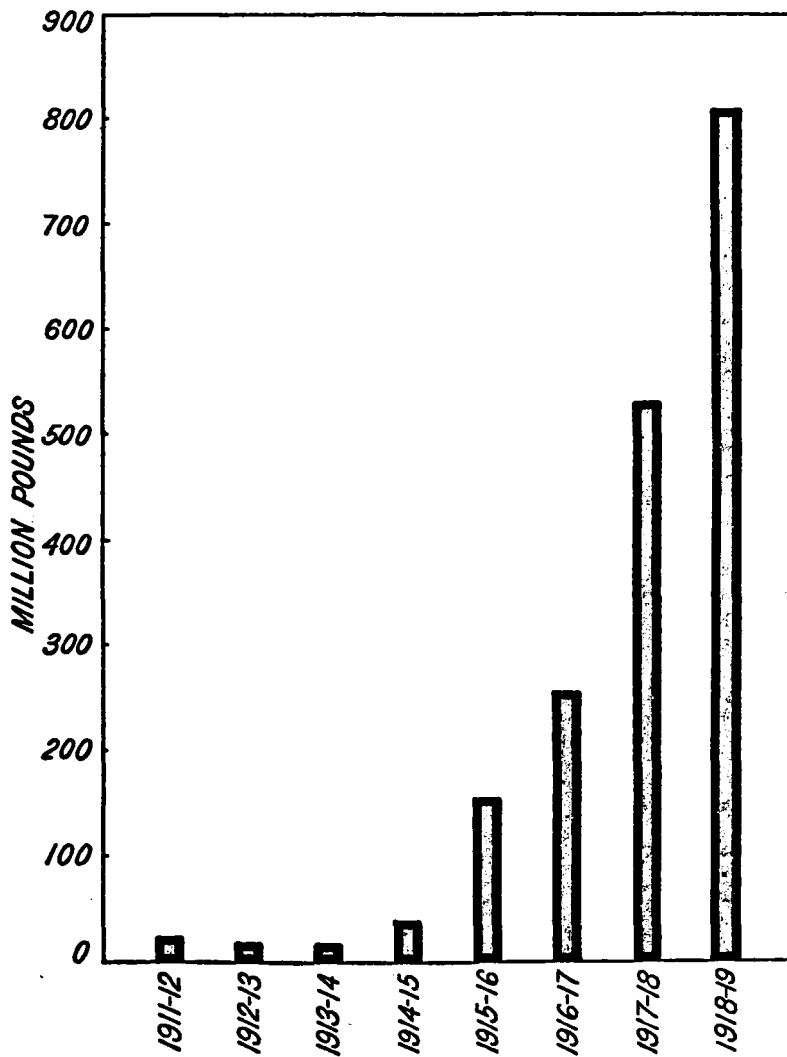


TABLE XI
EXPORTS OF CONDENSED MILK, INCLUDING SHIPMENTS TO A.E.F.,
RED CROSS AND FOR RELIEF PURPOSES
(Pounds)

Month	Average Three Previous Years	Fiscal Year		
		1916-17	1917-18	1918-19
July	1,213,160	22,949,694	35,950,870	44,382,224
August	1,404,639	26,097,320	45,353,724	68,876,303
September	1,395,963	22,401,507	43,112,598	60,135,102
October	1,730,698	12,582,454	45,458,224	62,338,907
November	1,226,910	16,275,288	48,541,066	55,975,556
December	1,257,154	12,435,165	63,758,928	51,986,986
January	1,591,830	13,323,665	40,649,333	51,550,387
February	1,531,731	16,110,559	30,515,944	61,516,409
March	1,667,493	33,691,608	51,314,451	54,730,359
April	1,636,570	27,327,896	46,834,395	96,557,659
May	1,687,476	26,615,876	49,728,386	77,459,434
June	1,448,945	39,334,716	39,679,629	114,963,626
Total	17,792,569	259,145,748	549,186,737*	809,694,703†

* Includes 2,848,548 lbs. sent to A.E.F. during first six months and 5,440,641 lbs. sent to A.R.C. during year; not obtainable by months.

† Includes 9,221,751 lbs. of condensed milk exported by Northern and Southern Relief; not obtainable by months.

special regulations limiting contracts for future delivery to sixty days, and forbidding the sale or delivery of supplies for more than sixty days to any one person. Between November 1, 1918, and December 3, 1918, manufacturers of canned milk were subject also to the following rule:

The licensee shall at all times keep his factory, machinery, utensils, and raw material, including products to be canned, in a clean and sanitary condition. He shall so regulate his purchases and handling of raw materials as to insure their delivery to the factory in a sound condition and to avoid unnecessary waste.

A similar rule was applicable to canners of practically all licensed products.

Special attention was also given by the Food Administration, through the Division of Coordination of Purchase hereinafter discussed, to the allotting of the large orders of canned milk for export and for the Army and Navy. In some months the demands of these heavy orders were burdensome upon the factories and great care had to be given to their allocation in order to insure their fair distribution in the industry.

XIX. COTTONSEED AND COTTONSEED PRODUCTS

The cottonseed industry has in recent years assumed a constantly increasing prominence in the food and feed trades of the United States. At the prevailing market price, the volume of the business represented by cottonseed products, expressed in terms of money, approaches one-half billion dollars. The chief contributions made by this formerly comparatively valueless by-product of cotton to the resources of the country are through the following three principal sources: (1) It is the largest single source of vegetable edible oil and fat supply. The scarcity of oils and fats during the war emphasized this fact. (2) Cottonseed meal is perhaps the most concentrated cattle feed and ammoniate. (3) Cottonseed linters, fiber, and hull fiber are very important factors in the manufacture of explosives. The statement of these vital contributions to the war requirements renders unnecessary any further explanation to the interest of the Food Administration in the stimulation and encouragement of the industry.

The first steps of the Food Administration in relation to the industry were directed to the correction and prevention of injurious trade practices which had grown up within the trade during its rapid development. Prior to Food Administration control merchandising methods were conspicuously absent in the handling of cottonseed and cottonseed products, and at each turnover of seed or oil or meal the speculative features were more often than not present. It was characteristic of both small and large dealers as in no other industry, and in equal measure created the necessity for and the difficulty of control.

One of the reasons for the prevalence of speculation in the industry is that the cottonseed must go through an unusually large number of steps in its passage from the producer to the consumer. Each step of manufacture and distribution represents a separate and distinct phase of the industry, in many instances as to both location and ownership. The different elements of the industry may be enumerated as follows: the producer who grows the cotton; the ginner who separates the cotton from the seed; the dealer in the seed, generally the ginner, but very often a broker or dealer in seed; the

crusher who crushes the seed and manufactures cottonseed meal and the crude cottonseed oil; the refiner who refines the crude oil; and the manufacturer of lard substitutes and others of the finished products of cottonseed oil. In addition there are the usual jobbers, brokers, wholesale dealers, and others distributing the finished product and very often acting as intermediaries between the different links in the chain. The problem of regulating all these different elements was an unusually complex one and required stringent control in order to eliminate hoarding and profiteering.

It was the custom of dealers in cottonseed to buy seed from the farmers in small lots during the fall and to hold this seed for a few weeks until the rise in price (which practically always occurred) took place and then to sell at a considerable profit. The crusher customarily bought or contracted for his supply of seed in the fall, paying a higher price very often than the market at the time warranted and holding it until the expected rise occurred later, when it was turned into the products and the higher price reflected in these products. So it was throughout the country—future buying and holding for rises in prices was the rule with every element and the dealers in all of the products.

By the Proclamation of October 8, 1917, those engaged in the business of ginning, crushing, refining, and dealing in cottonseed oil, meal, and cake were placed under license and rules and regulations were prescribed prohibiting the storing, keeping on hand, or having in possession an amount of cottonseed exceeding 20 tons for a longer period than sixty days. Special rules governing crushers provided that they should not have a supply of cottonseed to exceed their normal crushing capacity for a period of sixty days, nor store or keep in possession cottonseed for a period longer than sixty days except during the actual operation of the mill. The crusher was further prohibited from dealing in cottonseed oil other than that of his own manufacture. No licensee buying or selling cottonseed meal or cake was permitted to have outstanding, after November 1, 1917, any contract for the purchase of these commodities for shipment or delivery more than sixty days after the making of the contract. Speculation in cottonseed oil was also prohibited on the New York Produce Exchange by the adoption of rules permitting legitimate hedge selling but preventing manipulation and purely speculative trading.

From November 1, 1917, to December 7, 1917, only the general rule with reference to profits was in force and no definite margins of

profit were established. This general rule provided that the licensee should sell all commodities at not more than a reasonable advance over the actual cost of the particular commodities sold without regard to the market or replacement value at the time of sale. In interpretation of this requirement it was furthermore provided:

When the character of the business of the licensee is such that it is impossible to keep separate the particular commodities and the purchase and the manufacturing costs of same, the licensee may, in determining his profit, consider as the cost price of the goods sold, the average cost price of the total stock of the commodity from which the amount sold was taken. A licensee who operates one or more cotton ginneries, crushing mills or refineries shall keep separate accounts and make reports to show separately the operations of each; for the purposes of this rule, each cotton ginney, crushing mill or refinery shall be considered as a unit, and the licensee shall not be permitted to average any costs, profits or losses between such separate units.

It soon became apparent, however, that with commodities subject to such wide fluctuations as were cottonseed and its products, it would be impossible to enforce this rule without some price stabilization and that even the rules against hoarding would break down. The removal of the speculative element also removed the incentive of the refiners and the lard-substitute manufacturers to buy early; and, as they had the only storage capacity for oil, their non-action would have congested the crushing mills, thrown back the perishable seed on the farmers' hands, and perhaps resulted in great spoilage.

It happened that early in December 1917 it became necessary for the Food Administration to make special efforts to provide feed for starving cattle in the drought-stricken area of Texas and the demand was so immediate that exorbitant prices appeared probable. On the urgent request of the cotton owners the Food Administration appealed to the Texas Crushing Mills and these mills voluntarily agreed to sell their meal at \$46.50 a ton. Subsequently crushers of the other states followed suit, and a maximum price of \$46.50 was fixed in Louisiana, \$47.50 in Alabama and Georgia, \$48.50 in South Carolina, and \$49.50 in North Carolina.

The price of cottonseed hulls, also used as feed, followed closely the price of meal. The price of the third product—linters—was practically fixed by the government in taking over the entire output for powder manufacture.

At about the same time the refiners and lard-substitute manufacturers voluntarily agreed to assist the Food Administration by buying the oil output. A price of 17½ cents per pound was finally agreed

upon with them and with the crushers—a price lower than the one then prevailing and fair to both producer and consumer.

The price of cottonseed is practically determined by the price of these four products, upon which the law of supply and demand ordinarily operates. The crushing mill calculates the total receipts from the product of a ton of seed and, in buying seed, deducts a sufficient sum to cover its operating cost and profit. Having practically stabilized the price of all products, the Food Administration could then definitely prescribe this crushing margin—in fact determine the minimum price which the crushing mills must pay for seed.

This was done by the following rules adopted on December 7, 1917:

No licensee shall sell any cottonseed in car lots at more than \$2.00 per ton, exclusive of customary loading charge, over the price which he paid for said cottonseed.

No licensee engaged in the business of crushing cottonseed shall sell the products of any ton of seed for a total sum of more than \$13.00 (including bags and all costs of manufacturing) in excess of the price paid for such ton of cottonseed delivered in his mill, based on the following yields—

For all Southern States east of the Mississippi River:

43 gallons of oil
960 pounds of meal
140 pounds of lint
480 pounds of hulls

All States west of the Mississippi River:

38 gallons of oil
1000 pounds of meal
150 pounds of lint
470 pounds of hulls

The licensee shall be entitled to sell all products in excess of the above yield without reference to said margin of \$13.00, provided that the price charged for such excess products shall not exceed the average price for the other products in said yield.

The Food Administration further fixed the maximum margin allowable for refining the oil and manufacturing lard substitutes at 5 cents per pound, which made the maximum price of the finished product 22½ cents a pound wholesale. This stabilization program continued throughout the year 1917–18 with extraordinary success. The conditions which previously had always resulted in a very low price for cottonseed in the fall when the producers sold, and in a very high price in the spring and summer when the consumer bought, were eliminated. The profit of every intermediate handler was cut

below that required by speculative conditions, and yet every legitimate factor in the industry was satisfied. The price of lard substitutes was held below that of lard by more than the usual margin and this undoubtedly had considerable influence in holding down lard itself.

The control is interesting in showing how a price can be stabilized at the point where it is ordinarily made by supply and demand, and how complete control can be effected by prescribing margins from this point back to the producer and forward to the consumer.

Crop of 1918.—In spite of the success in handling the 1917 crop, the Food Administration was loath to continue the control over the 1918 crop. The producer of seed at first demanded an increased price over 1917; yet the larger crop and increased import of cheap foreign oils made it extremely doubtful whether or not the crop could be sold even at the former prices. In any event there appeared to be no further necessity for protecting the consumer. The brief return to speculative conditions, however, in the fall of 1918 led all elements of the industry to petition strongly that the method of control be continued. A meeting of the producers, ginners, crushers, refiners, and lard-substitute manufacturers unanimously recommended this course.

It also became clear that, while oil might be plentiful, a serious shortage of cottonseed meal threatened an immense price for cattle feeders. It was not, however, until after representatives of cottonseed producers met in September and recommended a specific program of price stabilization, in which they agreed that a price for cottonseed slightly less than the previous year would be satisfactory, that the Food Administration took action. The lard-substitute manufacturers again agreed to move the year's oil crush to the best of their ability at $17\frac{1}{2}$ cents a pound, provided the entire industry was stabilized. Owing to the necessity for increasing the crushing margin from \$13.00 to \$18.50 to meet advancing costs of manufacture, it was necessary to raise somewhat the price of cottonseed meal; but, even with this raise, it was considerably cheaper than other feeds.

Having determined that this plan would insure to the consumer throughout the year a lower average price than unlimited speculation, the Food Administration assisted the industry in maintaining this price at those times during the year when, for a short period, the heavy production tended temporarily to reduce the price, with a benefit resulting principally to the middleman. At times it was even necessary to hold that the cutting of a price by one who had agreed to the general plan would constitute an unfair practice.

The signing of the Armistice on November 11, 1918, made a material change in the situation. The demand for the product apparently fell off. Cheaper foreign oils were imported in greater quantities. The industry generally was afraid to purchase for fear that the price might fall; and the result was that there was an accumulation of stocks of seed and oil in many of the crude mills which caused grave apprehension. The market was clogged all along the line.

On February 11, 1919, at a meeting called by the Food Administration and attended by representatives of all elements of the industry, the threatening situation was considered with a view to taking steps to prevent a further aggravation of conditions and to relieve the congestion from which the industry was suffering. Recommendations of a committee appointed by this meeting were that every possible effort should be made to encourage export orders, that crushers should use their best efforts to purchase seed from localities where the heaviest congestion existed, and that refiners should purchase crude oils from the crude mills which were compelled to shut down by congestion. The Food Administration considered itself under a moral obligation to continue to assist the stabilization program, because many purchases had been made at its request in order to enable this plan to be carried out. On the other hand, the Food Administration was not in a position to guarantee producers and others against loss, nor could it exercise control over imports or exports, which were in the hands of the War Trade Board.

Fortunately the American Relief Administration required a considerable quantity of lard substitute, and with its assistance and the backing of the Food Administration regulations and control already in effect the stabilization program was carried through the year.

XX. THE COARSE GRAINS AND THEIR PRODUCTS

The grains classified as coarse grains by the Food Administration, including corn, oats, rye, and barley, were not brought under the complete control to which wheat was subjected. At the time of the creation of the Food Administration, with the prospect of unusually good crops of all these grains, it was believed that they might be allowed to remain free from Food Administration control except general measures regulating the trading with respect to them. Corn Milling and Feeding Stuffs divisions of the Food Administration were set up soon after August 10, 1917; but these divisions were chiefly concerned with a study of the problems of supply and the use of edible corn products as substitutes for wheat.

The early frosts in the fall of 1917 injured a large percentage of the corn crop of the country, creating a special problem in the saving of much of that crop from early spoilage because of its under-matured condition. Transportation difficulties of the winter added to the problem. The demand for all feeding stuffs was very strong, and complaints came in from various sections because of the prevailing high prices of these commodities. The substitute program for wheat-saving created further demands for corn and other coarse grain products. These factors and others of less importance made necessary eventually the creation of a division of the Food Administration to deal with the special problems in connection with these grains. In December 1917 a Coarse Grains Division of the Food Administration was created with offices in the Grain Corporation offices in New York City. This Division was moved to Washington in March 1918 and was given charge of the control over millers, manufacturers, and distributors of coarse-grain products. In addition to handlers of corn, oats, and barley, this included glucose and starch manufacturers, sirup and molasses mixers, malt manufacturers and dealers, near-beer manufacturers, manufacturers of and dealers in mixed feeds, rice millers, and grain brokers and commission merchants.

By the proclamation of October 8, 1917, the importation and distribution of corn, oats, barley, and rye and the milling and manufacture as well as the importation and distribution of the following

products were licensed: barley flour, rye flour, oatmeal or rolled oats, corn grits, cornmeal, hominy, corn flour, starch from corn, corn oil and corn sirup or glucose. By the rules effective November 1, 1917, wholesalers, jobbers, and other licensed distributors but not manufacturers of these resulting products were subjected to the "cost-basis" rule hereinbefore discussed, requiring them to sell the products at a reasonable advance over the cost price without regard to the market or replacement value. Those engaged in the business of storing these products at any seaboard shipping point were also forbidden to receive them or hold them in storage for a longer period than thirty days, and those who had held them in storage since September 1, 1917, were forbidden to hold longer than five days after November 1, 1917, without the written consent of the United States Food Administrator.

By the rules effective January 28, 1918, licensees dealing in cornmeal, grits, corn flour, hominy, corn flakes, and refined grits in carload lots were forbidden to sell (excepting only spot sales for cash) except upon the form of contract prescribed by the rules. This contract provided, among other things, principally that payment should be made in cash, or on sight, demand, or arrival draft, eliminating the long and uncertain credits which added to the cost of the goods to the consumer. It also provided that these products should be sold on the basis of net weights, that shipment should be made within sixty days, and that the seller might cancel if the buyer failed to furnish specifications and shipping directions promptly, or that the buyer might cancel for failure on the part of the seller to ship promptly or in accordance with the specifications.

By the proclamation of January 10, 1918, all importers, manufacturers, and distributors of feeding stuffs subject to license were required to secure a license by February 15, 1918. This brought under license the complete list of coarse grains and their products.

It was at first hoped, as stated above, that the large crop of coarse grains would tend to maintain the price and the profits of its handlers at a reasonable figure. The industry furthermore is probably more widely extended and therefore more difficult to control than any other in the United States. Corn is usually consumed on the farm or shipped from one farm to another without passing through terminal markets. There is no neck to the bottle corresponding to the wheat mills through which all wheat must pass. It was practically impossible to stabilize the price of corn and oats as

was done in the case of wheat, and this never was attempted or effected by the Food Administration. It soon developed, however, that some measures were essential to limit the profits of the middleman and cut down the margin between producer and consumer. When prices first showed a tendency to rise, the grain exchanges expressed the belief that certain maximum prices on futures would serve to stabilize the situation. The Food Administration agreed that the experiment should be tried but expressed skepticism as to its results. As prices rose high above these maximums, the effect of this regulation was to destroy the market for future contracts and the opportunity to hedge, which was customarily made use of by millers and grain dealers. As the winter went on, a great shortage of car equipment developed, owing to the congestion of cars on the Atlantic Coast, and the arrival in central markets decreased to a dangerous degree. Farmers who could not get their corn to market sold at ridiculously low prices to dealers, who took this speculative risk. At the same time a heavy demand for wheat substitutes enabled the corn millers to sell their products at exorbitant prices. The absence of any hedging market meant that millers and grain dealers were obliged to assume the speculative risk of a drop in price instead of being able to sell futures against their purchases as they had previously done. The result was that they naturally required a much wider margin.

The Food Administration therefore decided to adopt its own form of control, and the first step of the Coarse Grains Division was to restore dealing in futures on the exchanges. This dealing was hedged about by limitation on the total holdings of any individual operator, and the general control of exchanges from this date was most effective limiting speculation on the one hand and supplying the need for a hedging market on the other. Through the efforts of the Administration, furthermore, sufficient cars were finally made available and a great amount of wet corn was successfully dried. This work during the time of most severe strain undoubtedly resulted in the saving of many million bushels of corn which otherwise would probably have spoiled.

As soon as the most serious crisis in supply was over, the Administration took up the question of limiting profits in these industries as to both dealers and coarse-grain millers, and a series of conferences with representatives of each group took place. This resulted first in the making of specifications for grain products

which up to this time were of all kinds and grades; for it is obviously impossible to prescribe margins unless products are to some extent standardized. The specifications were issued on May 22, 1918, and were developed and modified on July 20, 1918, and September 1, 1918.

On the basis of these standards the Coarse Grains Division then prescribed margins for the sale of coarse-grain products over the cost of the bulk grain to the miller, taking into account any hedging transactions he may have engaged in. Owing to the hedging feature, this rule is different from the ordinary cost rule, and is here given in full:

RULE 4. *Unreasonable profits prohibited.*—The licensee shall sell edible products of corn, oats, rye, and barley at not more than a reasonable margin over the average cost to him of the corn, oats, rye, or barley from which such edible products are manufactured. In estimating such average cost he shall include all grain in his possession or under his control by contract or other arrangement, but he shall not include any grain which he has contracted to sell or the products of which he has contracted to sell.

Provided. That in determining the cost of such grain he shall—

(1) Add to the average purchase price the loss, and deduct from the average purchase price the gain, resulting from any hedging transactions on an established grain exchange in which the transaction is finally closed. The loss or gain on such transaction shall be calculated on the average price of all outstanding hedging sales or purchases.

(2) He shall deduct from the average purchase price the proceeds from the sale of feed or offal created in the milling operation, or, if not sold, he shall deduct its current market value.

Any average once calculated shall be taken as the basis for such averaged grain in all subsequent calculations.

He shall keep records in such manner as to show how all averages and selling prices have been determined.

The margins prescribed under this rule, however, were somewhat wider than could be justified as an average over all sales, because of the fact that the coarse grains were sold subject to wide fluctuations. In order that this average might not return more than a reasonable profit, an additional requirement was imposed on each group in the industry limiting their profits to such a percentage of the gross sales as the Food Administration found, after investigation, would insure a fair return on capital. Thus the corn, oats, rye, and barley millers were allowed 6 per cent and wholesale dealers in feeds 4 per cent on gross sales, and grain dealers 3 per cent on the first \$300,000 of gross sales per annum and 2 per cent on the

excess. The general announcement issued by the Food Administration as to corn millers is as follows:

The Food Administration has determined that any margins in excess of those listed below are unreasonable and excessive under the foregoing rule. These margins may, therefore, be regarded as maximum margins, but they do not in any way abrogate or modify the general rule that profits must not be excessive. The margins stated are, therefore, not necessarily to be considered fair and normal.

Old-fashioned or water-ground meal, 50 cents per hundred pounds bulk product.

Standard and bolted meal, 50 cents per hundred pounds bulk product.

Pearl meal, 60 cents per hundred pounds bulk product.

Pearl or table hominy, 80 cents per hundred pounds bulk product.

Grits, 80 cents per hundred pounds bulk product.

Cream meal, 80 cents per hundred pounds bulk product.

Corn flakes, \$1.20 per hundred pounds bulk product.

Corn flour, \$1 per hundred pounds bulk product.

Other corn meal, 60 cents per hundred pounds bulk product.

Barley flour, 95 cents per hundred pounds bulk product.

Rye flour, 90 cents per hundred pounds bulk product.

Rolled oats, oatmeal, oat flour, 90 cents per hundred pounds bulk product.

The above differentials apply to prices bulk mill or basing point when packed in barrels or 100-pound cotton or jute bags. See rule 7 for differentials on other packages.

To arrive at the selling price bulk mill or basing point, compute the cost of the number of pounds of grain required to produce 100 pounds of finished product and deduct therefrom the value of the feed or offal produced from this number of pounds of grain. The price of the finished product should not exceed this figure by more than the above margin.

Differentials on less than carlot sales.—The following additional margins over those named above will be considered reasonable by the Food Administration on less than carlot sales:

Less than carlots to wholesalers, not more than 5 per cent of carlot price in sacks.

Less than carlots to bakers, hotels, retailers, and manufacturers other than flour mixers, not more than 10 per cent of carlot price in sacks.

Less than carlots to individual consumers, not more than 20 per cent of carlot price in sacks. (If this margin is added the 10 per cent margin must not be added.)

To enforce this rule, the Coarse Grains Division inaugurated a system of weekly reports from all coarse grain millers and feed dealers in substitution for the complicated final reports previously required. These reports gave information as to the cost of raw materials and the selling cost of manufactured products. Where these margins appeared excessive, the matter was taken up directly

with the millers and price reductions were ordered. This checking alone saved the public at least \$3,000,000.

It is impossible to make any estimate even approximately of the results attained through the fixing of maximum margins; but at the time of the signing of the Armistice there is no question that these products were moving evenly to the consumers at fair prices and without exorbitant profit.

PROFIT REGULATIONS ON FEEDING STUFFS

On wheat mill feeds, cottonseed products, rice polish, rice bran, and dried beet-pulp maximum margins for individual sales were prescribed, since the cost basis of these feeds was more nearly determinable than on the other feeding stuffs. For dealers in other feeding stuffs, limitation on profits was made more definite by the following announcement of the interpretation placed on "reasonable profits," which announcement was made, effective October 1, 1918:

Margins and Profits for Wholesale Dealers in Feeding Stuff. The United States Food Administration considers that in sales of feeding stuffs at wholesale the advance on any individual sale should not in any case exceed the purchase price delivered at railroad station, plus 15 per cent. The Food Administration will therefore consider any sale of feeding stuffs in excess of this advance as a violation of the foregoing rule. This margin will also apply to the sale of corn, oats, rye or barley as feed, in assorted cars with other feeding stuffs but not in straight carload quantities, but will not apply to wheat mill feeds, cottonseed products, rice polish, rice bran, or dried beet pulp, for which special margins have been prescribed. For margins applying on straight carload shipments of grain, see the grain dealers' rules No. 111-A.

Furthermore, the Food Administration will consider an annual net earning by any wholesale dealer in feeding stuffs of more than 4 per cent. upon the total gross sales, if his gross sales of feeding stuffs amount to \$100,000 or more per annum, to be prima facie evidence of a violation of the rule which prohibits the taking of unreasonable profits. In the case of dealers who handle wheat mill feeds, cottonseed products, rice polish, rice bran, and dried beet pulp, as well as other feeds, the 4 per cent. will be calculated on all sales.

The maximum margin on individual sales is purposely made wide because of the speculative character of the products dealt with, and the fluctuating prices which may prevail. As pointed out, the general average on all sales must not exceed 4 per cent. advance over the cost of materials and overhead, nor must this 4 per cent. limitation modify or abrogate the general principle contained in the Food Administration regulations that a licensee shall not earn more than a reasonable net profit on his capital invested.

The aim of these maximum differentials was to check the taking of exorbitant profits by feed dealers and at the same time to make

the differential large enough to enable the dealers to recoup losses by sales within the margin. Feeding stuffs were subject to unusual fluctuations, and market losses by dealers were not infrequent. A margin had therefore to be arranged which would take care of these losses inflicted by sharp declines. The regulation issued was as follows:

Semi-Annual Profits.—The Food Administration will consider a net earning of more than six per cent upon the gross sales of any edible products of corn, oats, rye or barley as shown at the end of any semi-annual period, to be prima facie evidence of a violation of the rule which prohibits the taking of unreasonable profits. (General Rule 5.) This limitation does not modify or abrogate the general principle contained in the Food Administration regulations that a licensee should not earn more than a reasonable net profit on his capital invested, nor does it change in any way the maximum margins which have been prescribed on individual sales.

(*New, November 7, 1918.*) *Semi-annual profits of wet corn millers.*—The Food Administration will consider a net earning of more than 6 per cent upon the gross sales of all products or by-products of corn, whether such products or by-products are sold, pure or mixed with other commodities, by any licensee engaged in the milling of corn for the production of starch or glucose and other products from the manufacture of starch, to be prima facie evidence of a violation of the rule which prohibits the taking of unreasonable profits (General Rule I—A—5). This percentage will be calculated for each of the two semi-annual periods making up the licensee's fiscal year. The Federal Income and Excess Profits Taxes may not be deducted as expenses or otherwise, but all other taxes may be considered as expenses. This limitation does not modify or abrogate the general principle contained in the Food Administration regulations that a licensee should not earn more than a reasonable net profit on its capital invested.

XXI. RICE

Because of its highly concentrated food value and general desirability as a cereal food, the demand for rice increased greatly during the war. The production in the United States also increased during that period, as appears from the following table:

PRODUCTION OF RICE IN THE UNITED STATES

	Pounds of Cleaned Rice
Average 1909-13.....	681,167,000
1913	715,111,000
1914	656,917,000
1915	804,083,000
1916	1,130,611,000

The increased production of the year 1916-17 was more than 300,000,000 pounds above the best previous crop, which was the crop of the year before. The consumption of rice in the United States also showed a marked increase in the fiscal year 1916-17, although it had shown a decrease in the two preceding years, as appears from the following table:

TABLE XII
RICE CONSUMPTION IN THE UNITED STATES

Period	Consumption in Pounds	Population	Pounds Per Capita
1911-13 (prewar years).....	858,933,000	94,938,590	7.99
1914-15	636,086,658	99,792,570	6.37
1915-16	695,693,740	101,410,560	6.86
1916-17	928,974,154	103,028,550	9.02

The decrease in consumption for the first two years of the war is attributable to decreased imports and increased exports, while the large increase for the year 1916-17 was probably due to the great increase in the rice crop of this country.

With our entrance into the war the price of rice showed an ad-

vance little less spectacular than that of wheat. The New Orleans market showed an increase of 43.8 per cent from March to the organization of the Food Administration. The highest price was for the week ending May 11, 1917, when rice at New Orleans reached 7.15 cents per pound, or exactly double the average for the six months from October 1916 to March 1917.

In view of these facts it was apparent that rice should be controlled by the Food Administration. On September 13, 1917, representatives of the Rice Millers Association, meeting in Washington with representatives of the Food Administration, pledged their support to the Food Administration and recommended that all dealers in rice should be licensed and that rules and regulations should be promulgated which would eliminate speculation and hoarding and insure the product reaching the consumer at the lowest price possible. By the Proclamation of October 8, 1917, the importation, manufacture, and distribution of rice and rice flour was licensed. The rules effective November 1, 1917, contained special rules governing rice millers and dealers in rough rice, limiting the amount of rice in possession or under control by rice millers to twenty days' supply and prohibiting contracts for future delivery beyond thirty days. Dealers in rough rice were forbidden to sell the product at an advance over the actual purchase price of the particular rice sold in excess of 1 per cent of such purchase price plus the storage charge, insurance, and interest on the investment at the rate of 6 per cent per annum. Rice millers were required to sell cleaned rice at not more than a reasonable advance over the cost of such rice without regard to market or replacement value at the time of sale. The profit on rice by wholesalers, jobbers, and other intermediate licensed distributors of the product was governed by the "cost-basis rule" applying to those dealers. The 1917-18 crop of rice was somewhat smaller than the 1916-17 crop, while the consumption during that season had tended to increase. As a result the stocks of rice in the country at the close of the 1917-18 crop season were at a record low level, and notwithstanding the limitations on profits the price advanced in the spring of 1918 to \$8.75 per barrel for the rough rice, while cleaned rice sold at the mills for from 10½ to 11 cents per pound. With practically no stocks of cleaned rice available to supply the demand of the trade, it was evident that the new 1918 crop would come on the market at a price much too high and under conditions which would make speculation in the product very attractive.

It was therefore apparent to the Food Administration that some arrangement should be made to stabilize the price paid to the producer if the prices of the millers and dealers were to be held at a reasonable level. Conferences with producers were held with a view to determining the possibility of reaching an agreement between them and the Food Administration as to the price which should be paid to them by the millers. Just as in the case of the other agreements with producers, it was essential that this price, if agreed upon, should be one which would encourage the producer and at the same time protect the consumer. After many conferences with producers and millers, authorized representatives of the producers from all sections of the country endorsed the plan of an agreement with the millers which would name basic prices to be paid to the producers for the 1918 crop. This agreement with the millers was consummated in September 1918. The following was the provision of this agreement relative to the price to be paid by the miller:

The miller agrees that he will pay the following basic price for all rough rice bought for milling purposes, f.o.b. points of shipments:

- \$7.50 per barrel of 162 lbs. for Nos. 1 and 2 Honduras (River Type) in sacks
- \$7.25 per barrel of 162 lbs. for No. 3 Honduras (River Type) in sacks
- \$7.00 per barrel of 162 lbs. for No. 4 Honduras (River Type) in sacks
- \$7.25 per barrel of 162 lbs. for Nos. 1 and 2 Blue Rose in sacks
- \$7.00 per barrel of 162 lbs. for Nos. 3 and 4 Blue Rose in sacks
- \$7.00 per barrel of 162 lbs. for Nos. 1 and 2 Japan in sacks
- \$6.75 per barrel of 162 lbs. for Nos. 3 and 4 Japan in sacks

Other grades to be paid for on proportionate basic value. However, no rough rice for milling purposes shall be bought at higher prices than those named for Nos. 1 and 2 of the various grades.

All prices above are based on rice being packed in good serviceable bags and proper reductions are to be made for bulk rice, or rice sacked in old bags.

To limit the price charged by the miller, the following agreement as to the price of cleaned rice was reached:

The miller agrees that he will not sell cleaned rice, or rice by-products at prices in excess of those hereinafter specified f.o.b. mills.

Fancy Honduras	9 $\frac{3}{4}$ cents per lb. packed in 100 lb. pockets
Choice Honduras	8 $\frac{3}{4}$ cents per lb. packed in 100 lb. pockets
Fancy Blue Rose	7 $\frac{3}{4}$ cents per lb. packed in 100 lb. pockets
Choice Blue Rose	7 $\frac{3}{4}$ cents per lb. packed in 100 lb. pockets
Fancy Japan	7 $\frac{1}{2}$ cents per lb. packed in 100 lb. pockets
Choice Japan	7 $\frac{3}{8}$ cents per lb. packed in 100 lb. pockets
Fancy 2nd heads	6 $\frac{3}{4}$ cents per lb. packed in 100 lb. pockets
Screenings (river)	6 $\frac{1}{8}$ cents per lb. packed in 100 lb. pockets
Screenings	5 $\frac{3}{8}$ cents per lb. packed in 100 lb. pockets
Brewers	5 $\frac{1}{4}$ cents per lb. packed in 100 lb. pockets or in 240 pound bags
Rice polish	\$50.00 per ton packed in customary manner car lots
Rice bran	\$36.00 per ton packed in customary manner car lots

In selling rice polish or rice bran in less than car lots to retailers of feed the Miller may add not to exceed \$1.00 per ton to the foregoing prices.

All other grades are to be sold on a proportionate basic value and proper differentials are to be added for the cost of double pockets.

A further limitation was provided in the form of a maximum milling margin of 50 cents per barrel, which the miller could not exceed. Supervision over the carrying out of the terms of these agreements with the millers, particularly with reference to the determination of the proper grading of the rice bought, was placed in the hands of committees appointed by the Food Administrator and known as Grading and Classifying Committees. One committee was appointed for the Southern rice producing territory and another for California. The agreement further provided for the payment of the expenses of these committees from a fund derived from a small charge to the millers.

Other rules governing rice millers and manufacturers of rice flour effective July 29, 1918, provided for the use of a uniform contract for the sale of these products and prescribed specifications for rice flour. These rules and the agreement with the rice millers, as well as the price differentials prescribed for rice millers and manufacturers of rice flour, were continued in force until June 21, 1919, at which time most of the 1918 crop was marketed. On this latter date the Food Administration withdrew its control over rice by canceling the agreements and releasing the rice millers and manufacturers from the license requirements.

XXII. DRIED FRUITS

The dried fruits here referred to are peaches, raisins, and apples. The prospects of the 1918 crop of these fruits indicated that there would be a short pack. The big demand by the government and the Allies threatened to accentuate the shortage, and it was evident that it would be necessary for the Food Administration to take action in order to prevent exorbitant prices.

It was possible in this industry to make agreements with the producers because they are organized and territorially concentrated in one state—California. Negotiations were carried on in June 1918 between the growers' associations, independent growers, and the Federal Food Administrator for California as the representative of the Food Administration. As a result of these conferences, maximum prices to be paid to the producer by the packers were agreed upon and were accepted by the Food Administration. Using these prices to the producer as a basis, further maximum prices were established for the packers of these fruits. A further limitation was placed upon the packers by providing that no packer would be entitled to a profit in excess of 4 per cent on his gross volume of business.

It turned out that the anticipated short crop was still further reduced by disastrous equinoctial rainstorms in the producing regions. Notwithstanding the fact that the observance of the agreed prices meant the suffering of heavy losses, particularly by the producers, the dried-fruit industry exhibited a splendid spirit by adhering to the voluntary agreements.

The license regulations governing the packers of all dried fruits (1) prohibited the licensee from buying, contracting to buy, selling, offering to sell, or contracting to sell, prior to June 15 of the year in which the new crop fruits were grown or packed, any new crop fruits not available for spot delivery; (2) prohibited him from facing;* and (3) required him to observe the cost-basis rule, that is, to sell his products at not more than a reasonable advance over cost without regard to market or replacement value at the time of sale.

*Facing is the method of packing by which the fruit is arranged in fancy layers and was regarded as a wasteful practice.

XXIII. BEANS

Because they are a highly nutritious and concentrated food as well as because of their keeping qualities and the ease with which they can be handled and prepared for consumption, the demand for beans greatly increased with the progress of the war. Largely owing to the demand from Europe and the drain on our supply, the price had advanced by 1916 from a prewar wholesale basis of 3 cents per pound to an average basis of 12 cents per pound. Before the war beans were raised in a large commercial way in only four states—California, Colorado, Michigan, and New York. As a result of this great increase in price, by the year 1918 beans were grown in commercial quantities in practically nineteen states and in a small way in several others. The prewar normal crop in the United States was about 9,000,000 bushels, and we normally imported from Japan and Austria-Hungary about 1,000,000 bushels to take care of domestic consumption. In 1918 the crop of the United States approached 20,000,000 bushels, which was more than double the prewar crop.

So great was the demand on us that notwithstanding this great increase in production it was still necessary until the 1918 crop to encourage the importation of beans from Manchuria and Japan. The large demand for the Army and Navy was added to that of our normal domestic consumption, and the latter showed no decrease. The demand from the Allies and from neutrals upon the United States was further increased in 1918 by the inability of the Allies to furnish shipping from Rangoon and Manchuria directly. The Food Administration was therefore impelled to encourage the importation of beans for the additional reason that this enabled the utilization of Japan-transpacific shipping in lieu of the direct haul by the Allies from Rangoon and Manchuria.

This program, like other food programs, was necessarily based upon the war's continuance. As it turned out, it was partially invalidated by the Armistice and the resumption of shipping to Europe from the Far East. This left the domestic producer in the United States in a dangerous situation with an oversupply for the domestic demand. The obligation of the European peoples to the American producers who had taken the risk for their benefit was pressed by

the Food Administrator, in his position as Director General of the American Relief Administration; and he was successful in accomplishing the sale of large quantities of American beans for relief purposes. As in the case of pork and other American products, he pointed out that justice to the American producer who had greatly increased his production to supply war needs required that the people who had received the benefit of these increased efforts should protect him against ruinous losses, even though this protection required the purchasing of the American product at higher prices than other goods might be purchased for. Although considerable loss to the producers of certain sections was unavoidable, vital relief was given the industry as a whole by these sales.

BUYING

The purchase of beans for our Army and Navy and for export was handled by the Food Administration Grain Corporation. Reports were obtained of the available stocks in the country and the Grain Corporation was able to direct the purchases so that congestion in particular localities was relieved and a steady market was maintained so far as possible.

STIMULATION OF PRODUCTION—PINTO BEANS

The Food Administration gave particular attention to the encouragement of the production of the pinto bean, a dry-land bean, the growth of which is confined largely to the southwestern section of the United States, and particularly to the states of Colorado and New Mexico. Because of the high food value of this variety and the possibility of rapidly increasing its acreage, it was a crop well fitted for wartime needs. The 1917 production showed an increase of approximately 45 per cent over that of 1916; but there was difficulty in marketing the crop for the reason that the variety was not widely known and there was no extensive demand for it. By endorsing it as a food, the Food Administration encouraged its increased consumption, and in the early part of 1918 the Food Administration Grain Corporation entered into contracts purchasing a large part of the 1917 crop. In all, the Grain Corporation bought and sold, both for export and the domestic market, approximately 1,000,000 bushels. The 1918 crop showed an increase over the 1917 crop of approximately 10 per cent. Without the efforts of the Food

Administration it is very doubtful if the large production of either the 1917 or the 1918 crop could have been marketed except at a sacrifice.

REGULATION

The license regulations governing importers and distributors of beans are discussed herein under the discussion of special regulations applying to these licensees.

XXIV. COFFEE

During December 1917 and January 1918 speculation in coffee became very active on the New York Coffee and Sugar Exchange. There was no scarcity of coffee; but the fact that it had shown no material advance during the war was brought to the attention of speculators by dealers in futures, and the market showed a steadily advancing tendency. This was the more unwarranted because of the fact that, owing to the shipping situation, the United States was practically the only large market open to the South American coffees.

To meet the situation the Food Administration decided to bring coffee under license; and on January 30, 1918, the President issued a Proclamation requiring all persons, firms, corporations, and associations engaged in the business of importing or distributing green coffee to obtain a license. Trading on the New York Coffee and Sugar Exchange was limited by prescribing a maximum quotation for each "spot" month and a maximum carrying charge for delivery for each succeeding month.

The license regulations limited sellers of green coffee to a reasonable profit on each sale over the average cost of the stock on hand or under contract. The licensee was required, in arriving at his cost, to take into consideration the gain or loss resulting from any actual hedging transaction on the Coffee Exchange. Purely speculative transactions, however, could not be included in calculating costs.

The profits of importers and jobbers were limited by prescribing maximum margins over cost which they might charge. The first rule, effective March 9, 1918, limited importers to a maximum margin of $2\frac{1}{2}$ per cent and jobbers to a maximum of 5 per cent. These margins were amended July 24, 1918, to 5 per cent for importers and $7\frac{1}{2}$ per cent for jobbers.

Late in June 1918 São Paulo, the largest coffee-producing state of Brazil, was visited by the heaviest frost in thirty years. Reports of the damage to the trees varied from 40 to 80 per cent. Speculation at once began, and the markets in other producing countries moved upward sympathetically. The market continued to advance under the influence of speculation, which was intensified by the success of the Allied armies and the prospects of early peace. With the news of the Armistice the Brazilian market "went wild" and prices by De-

cember 10 had reached 20½ cents for Santos fours against 8 cents in the preceding May.

Importers in the United States from September 1 to November 15 bought very sparingly, believing that the market would not hold. The visible supply in the United States was consequently reduced. There was not in reality a world shortage of coffee; but the speculative activity in the producing countries, assisted by some in our domestic market, succeeded in maintaining and increasing the price. After the removal of the Food Administration control on January 10, 1919, there were further marked advances; but the consideration of those advances is not properly a part of this report.

SHIPPING

At the beginning of the year 1918 the shipping situation was demoralized. The United States Shipping Board had established rates of freight on coffee from Brazil of \$1.70 per bag for steamers, \$1.20 for motor boats, and \$1.00 for sail. Charters would be made on this basis, but the charterer would resell his space at fabulous profits—in some instances \$4.00 per bag was obtained. The situation becoming unendurable, the Food Administration approached the Shipping Board, and in conjunction with the War Trade Board a rule was published that no coffee could be imported into the United States on which the rate of freight exceeded that established by the United States Shipping Board. Profiteering was effectually stopped, and large excess sums charged by vessels then afloat were refunded, to the ultimate benefit of the consumer. Freights were stabilized, and the trade was no longer at the mercy of the profiteers.

The matter of consignments was one of the most difficult of the problems in connection with coffee. It had been the custom for many years for shippers in the mild coffee countries to consign their coffee to commission dealers to "sell on the market" or when ordered to do so. Previous to the war the German interests had largely controlled these coffees. With the market of Central Europe closed, American bankers and commission firms entered the field, made advances on crops, and arranged for the produce to be shipped here to be sold for the consignor on a commission basis. It was found that to establish a cost basis on these consignments was practically impossible. Shipments were made up of lots from a number of different dealers, and the invoice made up of all kinds of grades. Practically 90 per cent of all these mild coffees came in on a consignment basis; hence their

control was most difficult. When the stock was large, they were sold freely; but when the exhaustion of the stock of Brazils was felt, prices pushed up daily and foreign owners were permitted to receive prices that were manifestly improper but which it was impossible to stop except by prohibiting consignments. This was not considered advisable, owing to the scarcity existing, the possible disruption of future business, and the further possibility of political disturbance.

From the time the Food Administration took control of coffee in January 1918 to October 1, 1918, the price to the consumer remained unchanged. After that date, largely owing to speculative activity in the producing countries, which was consequently beyond our control, prices advanced at a rapid rate. There can be no doubt, however, that in the absence of the control of the Food Administration these speculative advances would have been made at a much earlier date and the later advances would have started from a considerably higher level.

XXV. COLLATERAL COMMODITIES

There were a few commodities which could be classified as neither foods nor feeds but which because of their importance in the preservation or protection of food and their consequent relation to conservation and prices were included within the program of the Food Administration. A Division of Miscellaneous Commodities was created in August 1917 to give attention to some of these commodities. This Division was later merged with the Division of Chemicals created in November 1917, and after the merger the division was known as the Division of Collateral Commodities. The commodities handled by this division were the following: ammonia; ice; sisal and binder twine; arsenic; burlap and bags; glycerine; and fats and oils.

AMMONIA

The problem in ammonia arose immediately from the enormous requirements of the War Department for this chemical in the manufacture of ammunition. These requirements of the War Department alone were greater than the entire domestic production of ammonia during the preceding year. The shortage which threatened to result would unavoidably have caused exorbitant prices and endangered the supply of ammonia for artificial ice, refrigeration, and other domestic uses.

The Food Administration called a meeting of the ammonia manufacturers and concluded a voluntary agreement with them that their product might be allocated by the Food Administration. An Interdepartmental Ammonia Committee was formed, which consisted of representatives of the War Department, the Navy Department, the Department of Agriculture, the Department of Interior, the War Industries Board, and the Food Administration. Through this committee relative needs were considered and important allotments determined.

The agreement with the ammonia manufacturers stopped the upward flight of prices by providing for a maximum price of 8¾ cents per pound for aqua ammonia and 30 cents a pound for anhydrous ammonia in carload lots. A campaign was carried on among the manufacturers for the conservation of ammonia and for the increase of its production. Rules and regulations were promulgated for the

guidance of ammonia manufacturers in filling orders, and no consuming plants were allowed to carry more than a sixty-day operating supply. This sixty-day rule put an end to the hoarding of supplies by the customers of manufacturers.

One of the most important conservation measures was a campaign for the closing of ice plants during the winter and for the harvesting and storing of natural ice. The Food Administration secured the agreement of many owners of ice plants to shut down during the fall, winter, and early spring months, and to purchase the ice necessary for their customers either from dealers in natural ice or from other manufacturers. The campaign for increased harvesting and storing of natural ice resulted in the harvesting of the largest crop in our history. The whole ice-making and refrigerating industry was appealed to through circulars and otherwise to interest its members in saving ammonia from a patriotic as well as a business standpoint. Almost without exception the hearty co-operation of every member of the ice and cold-storage industry was received.

As a result of these various measures, together with some modification in the demands of the War Department, we passed successfully through a season at the outset of which we were faced with an apparent shortage of 60,000,000 pounds, without curtailing any essential use of ammonia and without inflicting hardship either from scarcity or prices on the refrigerating industries.

The control over the ammonia supply was continued until the signing of the Armistice released the pressure of the greatest demand, which came from the War Department. Before the Armistice was signed and during the summer and fall of 1918 a complete control had to be maintained over the situation in order to assure that the most essential needs would be supplied. The demands of the War Department had to be met, and other very pressing requirements were held second to those. For instance, the supply of sal ammoniac was entirely taken by the War Department for producing smoke in high explosive shells; while one of the large baking companies was at the same time demanding several carloads for use in the manufacture of a yeast food for the government. The demands of the baking company had to give way before that of the Ordnance Department. This is but an instance of the problems which the government was called upon to solve in determining the relative needs for a commodity of which only a limited supply existed during the war.

The situation was entirely relieved by the cessation of the pur-

chases of the Ordnance Department upon the signing of the Armistice and no further control over the ammonia supply was maintained.

ICE

The ice problem was largely a local one and was handled almost entirely by the Federal Food Administrators for the different states and their local representatives. There was no reason to fear a general ice shortage and no indication that one would exist; but, in view of the shortage of ammonia and the danger of too high prices justified on the ground of rising labor and other costs, it was thought advisable to exercise a general supervision over the price of ice as well as to promote conservation of ammonia in its manufacture. Near the last of April 1918 a telegram was sent from the Washington office to all Federal Food Administrators advising them that ice came within the provisions of the Food Control Act and that increases in price to the household consumer should be investigated by the Food Administrators to ascertain their reasonableness. The position taken in general by the Food Administrators was that ice men should not be allowed to recoup in 1918 the losses caused by the cool season of 1917 and that, as far as possible, the burden of any necessary increase should fall upon the large users rather than upon the small household consumer.

Through the Division of Collateral Commodities the Food Administration in the Washington office kept in touch with the general ice situation and gave the State Administrators assistance and advice whenever possible. A representative of the Division attended conventions of ice dealers and manufacturers and visited several states in assisting the adjustment of local questions. In July a trip was taken by this representative (Mr. Leslie C. Smith) through several Southern states, and conferences were held with the Federal Food Administrators of Georgia, Florida, Alabama, Mississippi, and Louisiana. Ice difficulties in each of these states were adjusted, and reduced prices were secured in Tampa, Florida, in Meridian, Mississippi, and in Mobile, Florence, Tuscumbia, and Sheffield, Alabama.

The co-operation of ice dealers and manufacturers was everywhere very satisfactory and the net result of the restraint upon prices and the assistance of manufacturers which was exercised by the Food Administration gave satisfaction to the different interests concerned.

Plans were being laid in October 1918 for a closer supervision over this commodity during the 1919 season; but with the signing of the Armistice all control of it was abandoned.

ARSENIC

In arsenic as in ammonia a shortage was threatened as a result of the increased demands in war industries and for war uses. In the fall of 1917 the high prices prevailing for arsenic were limiting its use as an insecticide on food crops and in cattle dips, and it was these uses in which the Food Administration was particularly interested.

The entire industry, including both producers and distributors, was put under license by a proclamation of the President dated November 15, 1917. Although arsenic was not a food, it came within the definition of a necessity under the Food Control Act and hence was subject to license control. Special regulations were promulgated, effective November 20, 1917, as to those engaged in the business of importing, manufacturing, storing or distributing white arsenic or in the business of manufacturing other insecticides containing arsenic, and, effective December 10, 1917, as to those engaged in the business of importing, storing, or distributing other insecticides containing arsenic. These regulations contained the usual rules regarding reports, unreasonable profits, and resales. In addition to these restrictions there were restrictions on the use of arsenic in the less essential industries. White arsenic was not allowed to be sold in any form without special permission in writing from the Food Administrator except to (a) those engaged in the use of such arsenic as an insecticide or in the manufacture of insecticides, (b) those engaged in manufacturing medical supplies containing such arsenic, and (c) those engaged in the manufacture of products containing such arsenic required by the United States government. All producers were urged to increase their production, and responded to this urging to a marked degree. The increase amounted to between 2,000 and 3,000 tons for the year from July 1, 1918, to July 1, 1919.

Conferences on possible methods of conservation were held with representatives of the Bureau of Standards, the Department of Commerce and the National Research Council, and it was decided that in the event of strict necessity the use of arsenic in the manufacture of glass could be eliminated without vital injury in order to protect the food supply. Soon after the industry was put under license, the sale of arsenic for the manufacture of glass was restricted; but the situ-

ation became somewhat easier, and glass manufacturers were later permitted to purchase ninety-days' supply. Restrictions were also placed on the use of refined arsenic in weed killer. The export of arsenic was controlled by the War Trade Board in order to conserve the commodity and to check the exportation for nonessential purpose or to those who might use it in any way contrary to the interests of the United States in the war.

On February 23, 1918, a circular was issued to all producers of white arsenic to the effect that the Food Administration would consider unfair and extortionate any price in excess of 9 cents per pound delivered to any point in the United States for white arsenic containing not less than 99 per cent As_2O_3 in carload lots and any price in excess of $9\frac{1}{2}$ cents per pound in less than carload lots. The former producer's price had been approximately 16 cents per pound. The standard of purity was later reduced to 98 per cent As_2O_3 . In order to reflect to the consumer the producers' maximum price of 9 cents per pound for white arsenic in carload lots, dealers in white arsenic were notified on April 4 of maximum differentials which they would be allowed in handling the product.

Toward the latter part of August, information was received from the War Department that the Chemical Warfare Division would require about 4,000 tons of white arsenic before July 1, 1919, for use in the manufacture of poison gas instead of the 1,000 tons previously estimated as a possibility. Within a short time this estimate was increased to about 6,400 tons and about the same time the British government requested permission to secure 2,000 tons for the same purpose.

The producers of arsenic were immediately called together, and an accurate survey of the situation was made. The delivery of arsenic for insecticide purposes, including cattle and sheep dips, alone, during the preceding twelve months, had been about 8,000 tons; and 2,000 tons had been delivered for glass manufacturers and 1,300 tons for drugs, exports, and other miscellaneous uses. Further inquiries as to possible production were made, and the closest estimate showed that between July 1, 1918 and July 1, 1919, there would be available in Canada and the United States about 14,400 tons of white arsenic, and that in addition there would be perhaps 1,000 tons of crude arsenic and certain other doubtful supplies which could possibly be developed under the new Minerals Control Act. Therefore, if the War Department requirements were to be met there would be avail-

able between July 1, 1918, and July 1, 1919, only about 6,000 tons for all other purposes, of which approximately 1,000 tons had already been delivered for glass and sheep dips.

It was decided to stop delivery of arsenic for the manufacture of glass immediately, and investigations were made which resulted in a determination to cut off the supplies of refined arsenic for sheep dips, for which lime and sulphur might be substituted. It was also decided to forbid the delivery of refined arsenic for the manufacture of cattle dips, it having been ascertained that crude arsenic could be substituted. Through these conservations it was found possible to allocate the requirements of the British and American War Departments through the month of November without interference with the existing contracts between producers and the manufacturers of insecticides other than sheep or cattle dips.

The estimated requirements of the War Department were comparatively small during November but increased rapidly thereafter; and it seemed probable that the use of arsenical insecticides in the year 1918-19 would not be possible beyond from 75 to 80 per cent of the previous year's use; and this was particularly distressing because it had already been planned to stimulate the use of these insecticides particularly in the use recently developed of combating the cotton-boll weevil.

When the Armistice was signed the entire situation was cleared. The War Department had actually used very little of the arsenic ordered, and arrangements were made to have the arsenic under contract released for domestic use as soon as possible. It seemed clear that with this accomplished there would be a supply adequate for all necessary domestic uses. The Food Administration's restrictions were at once relaxed and a recommendation was made to the War Trade Board for a free export of arsenical insecticides and the export of white arsenic to a considerable amount. License requirements were removed by proclamation of the President January 10, 1919.

SISAL AND BINDER TWINE

The activity of the Food Administration with reference to binder twine was due to its interest in assuring a sufficient supply at a reasonable price to the farmer for the harvesting of the small grain crops, particularly wheat. The cost of binder twine is one of the largest items in the cost of wheat harvesting. The indications were that the small grain crop would be unusually large in 1918 and that slightly

more than the average of 147,000 tons of binder twine used annually in the three preceding years in the United States would be required.

The only adequate source of the raw material for binder twine manufactured and used in the United States is the sisal grown in the state of Yucatan in Mexico. New Zealand hemp and British and German East Africa sisal, as well as manila from the Philippines, were competing sources prior to the war; but shipping conditions during the war practically eliminated these sources.

The sisal of Yucatan, which is one of the principal products of that state, is controlled by an organized monopoly closely affiliated with the local government and known as the Comisión Reguladora. The average annual output of sisal in Yucatan is 1,000,000 bales. The production in 1916 was 1,280,000 bales. By far the greater part of this production is marketed in the United States. The price charged the American binder-twine manufacturer had been steadily rising for some years prior to our entrance into the war, until it had reached in 1917 a price of $19\frac{1}{2}$ cents per pound, as against a price in 1911 of $4\frac{1}{2}$ cents per pound and a price in the ten years preceding the war ranging from $4\frac{1}{2}$ cents to $7\frac{1}{2}$ cents per pound. Early in the fall of 1917 the attention of the Food Administration was called to the fact that a further and marked increase in the price of sisal was threatened. At the price of $19\frac{1}{2}$ cents the cost of sisal to the American manufacturers was about \$80,000,000 annually—an increased tax on the American farmer of more than \$50,000,000 over that taken by this necessity prior to the war. A further increase in price was not only grossly extortionate but absolutely unwarranted.

The first step taken by the Food Administration was to call into conference representatives of the Comisión Reguladora with a view to arriving at an agreement with that agency relative to the supply and price for sisal used in the United States. The first agreement reached with the representative of the Comisión provided that a joint commission should be appointed by the representatives of the Mexican and American authorities, which commission should make an expert examination of all costs and arrive at the cost of production of sisal. To this cost of production a fair profit was to be added and a selling price agreed upon. It was further agreed that the Comisión would contract with the Food Administration for a large share of their sisal production when the satisfactory terms were arranged. This proposition for a commission to determine costs was not approved by the Comisión Reguladora itself, and further negotiations

extending over a period of several weeks were carried on with its representatives.

On October 16, 1917, the binder-twine manufacturers of the United States met in conference with the Food Administration at Washington, and as a result of this conference agreements were concluded between the manufacturers and the Food Administration providing that the manufacturers would purchase their entire sisal requirements through the Food Administration. This agreement stopped the severe competition for sisal between manufacturers, which competition was being used by the Reguladora as an instrument for increasing the price. Further terms of this agreement with the manufacturers were that the manufacturer should not sell his binder twine at a price more than the cost of the raw material plus the conversion cost and plus a reasonable profit, the reasonableness of the profit to be determined by the Food Administration.

After prolonged negotiations with the Comisión Reguladora it was found impracticable to obtain a reduction in price below 19 cents. No formal agreement was concluded with the Comisión for a stated amount of sisal at this price, but it was in general agreed that the Food Administration would endeavor to arrange for exports of food products and gold to Yucatan in return for the sisal imported. The price of 19 cents was unsatisfactory to the Food Administration; but the situation was urgent, and the manufacturers informed the Food Administration in November 1917 that unless the sisal moved forward immediately it would be impossible to manufacture sufficient binder twine for the 1918 harvest in time for that harvest.

The first purchase made by the Food Administration from the Comisión Reguladora was for 100,000 bales, and subsequently this purchase was increased from time to time to a total of about 340,000 bales, at a price of 19 cents at New Orleans, and 19¼ cents at New York.

That the price of sisal would have advanced still higher in the absence of interference by the Food Administration with the situation, is indicated by the advance in hemp to a price of 29½ cents per pound—a very marked increase. The prices of hemp and of sisal are closely associated.

For the supply of binder twine for the 1919 harvest, negotiations relative to sisal began early in the summer of 1918. On June 14, 1918, a contract was concluded between the Comisión Reguladora and the Food Administration for the sale of 500,000 bales of sisal

to such persons as should be designated by the Food Administration, upon the following terms:

1. Price of 16.8 cents per pound delivered at Gulf ports for 100,000 bales and 15.8 cents per pound delivered at Gulf ports for an additional 400,000 bales, deliveries to be made from 70,000 to 75,000 bales each month beginning with the month of June, all deliveries to be completed by January 1, 1919.

2. Comisión to furnish shipping for a total of not less than 150,000 bales and for 100,000 additional bales unless prevented by cancellation of contracts for transportation.

3. Food Administration will allot this sisal among the manufacturers of sisal products and secure from such manufacturers contracts for purchase of sisal at these prices.

4. Food Administration to recommend to War Trade Board for exportation of "non-conserved" foodstuffs to Yucatan in accordance with rules and regulations limiting shipments to neutrals. Food Administration to also use its best efforts to arrange for export of gold to Yucatan to the extent of \$100,000 per month to January 1, 1919.

5. Comisión further agreed not to dispose of sisal in such a way as to aid enemies of the United States.

The reduction in price secured under this agreement with the Comisión Reguladora from the price of 19 cents prevailing in the year 1917 meant a saving of \$6,000,000 to the American farmer.

The agreement with the binder-twine manufacturers was extended for the duration of the war. This agreement provided that the Sisal Committee appointed by the United States Food Administrator should arrange for the purchase of Yucatan and Campeche sisal during the continuance of the war with Germany to an amount authorized by the manufacturers, and that the Sisal Committee should arrange, route, and distribute such purchases for the manufacturer's account, at a price equal to the average price paid by the committee for all of the requirements of that season for which the sisal was purchased. The manufacturer agreed to pay immediately the actual price of sisal shipped to him in accordance with his stated requirements and to adjust later in case the average price paid for all sisal differed from the price paid by him. The manufacturer agreed to import or purchase no Yucatan or Campeche sisal except through the Sisal Committee and to manufacture all sisal into binder twine unless released by the Food Administration, and, further, to sell all binder twine manufactured at a price which would return a reasonable profit only, the reasonable profit to be determined by the Food Administration. At a meeting of the Sisal Committee of the Food Administration held on November 26, 1918, the committee recom-

mended that the price should be on the same basis as that approved by the Food Administration for the previous year—namely, that a maximum margin of 4 cents per pound should be allowed above the average cost of the fiber used, including the fiber in the twine carried over from the 1918 harvest. The average cost of the fiber to be used during the 1918–19 manufacturing season was estimated to be 16 cents, while that of the sisal used in the manufacture of the twine carried over was practically 19 cents. As the carryover represented about 38 per cent of the total output, the average was figured to be 17.17 cents per pound; but 17 cents flat was adopted as the base-average price of sisal. On this as a base the committee therefore recommended a maximum price of 21 cents per pound for Standard and Sisal 500 foot twine. The Committee further recommended that the same differentials in price for the greater-length twines should be established for the 1919 season as were in effect the previous season. These prices were for twine in carload lots f.o.b. factory points, for fall settlement. These recommendations of the Sisal Committee as to price were approved by the Food Administration, and the trade was notified by telegram and through the press of the agreed maximum prices.

At a further meeting of the Sisal Committee held on January 9, 1919, the Committee recommended that the price of Standard and Sisal twine for export should be established at not less than 21.3 cents per pound f.o.b. Boston, New York, or New Orleans, net cash, to be secured by the manufacturer; other grades at the same increases as for domestic sale. This recommendation was approved by the Food Administration. The reason for the establishment of this minimum price for export was to prevent the sale to foreign buyers at a price less than that paid by the domestic users.

In addition to the 500,000 bales, purchase of which was provided for in the contract with the Comisión Reguladora, the Sisal Committee negotiated a further purchase in March of 63,500 bales at a price of 15 cents per pound, which quantity was later increased to 68,500.

After this latter sisal had been delivered and reports of any excess costs incurred during the season had been received, the average cost of all the sisal used by the manufacturers during the 1918–19 season, commencing July 15, 1918, was computed and found to be 15.965 cents per pound. Statements were then prepared for each manufacturer's account showing the amount due to or from the Sisal

Committee, depending upon whether their average price was less or more than 15.965 cents, which was the general average for all. This adjustment involved a total transfer of \$237,000. Ten concerns contributed this sum, which was then distributed to the other twenty companies in accordance with the agreement.

The binder-twine manufacturers were released from their agreement not to buy sisal except through the Food Administration, on May 18, 1919.

JUTE BAGS

An unjustified rise in the price of grain bags, due to difficulties of importation and the consequent shortage as well as to speculation and profiteering because of this shortage, was threatened in the spring of 1918. To meet this situation the Food Administration on February 26, 1918, entered into voluntary agreements with bag manufacturers by which these manufacturers agreed to sell all standard new Calcutta or domestic wheat bags on hand up to a designated total at a price not greater than 25 cents per bag. In consideration of this agreement the Food Administration agreed that the Grain Corporation would fix a differential in its buying basis of wheat in bags over wheat in bulk of not less than 7 or not more than 9 cents per bushel.

Further speculation in burlap in Calcutta, India, one of the chief sources of supply, threatened to cause a further sharp advance; and the Food Administration arranged for the importation of 4,000,000 bags at a reduced price. Having arranged this large importation the Food Administrator in May 1918 concluded a further agreement with the bag manufacturers providing for the sale of these bags at a price not to exceed 26½ cents. Further negotiations concerning the price to be paid for imported jute bags were carried on with the British government by the War Industries Board.

TIN PLATE

Tin plate was another commodity in which a shortage was threatened due to the increased war demands and the difficulty of securing ships for the importation of tin. Soon after the creation of the Food Administration the Canning Division took measures to encourage the production of tin plate, and negotiations were carried on with the British government concerning the importation of this commodity. The importation of necessary palm oil for use in the

manufacture of tin plate was also arranged for by the Food Administration with the British government.

With the aid of a tin-plate-conservation committee, which represented various government departments interested, the production of tin plate was greatly increased in the months of May and June, 1918, so that the heavy requirements for the 1918 canning season were adequately met. In co-operation with the War Industries Board special directions were issued applying to manufacturers and packers of various products such as baking powder, cocoa, condensed milk, macaroni, and molasses. These directions, which became effective October 1, 1918, effected a compulsory conservation of tin plate by eliminating its unnecessary use in packing these products.

XXVI. MOVEMENT IN FOOD PRICES

In order that the Food Administration might have definite information as to the trend of prices during the war, a statistical investigation of price movements was established supplementing those currently provided through the Department of Agriculture and the Department of Labor. This constant study of the effect of stabilization of certain commodities and the restrictions on margins, of fair profits on resale was necessary for the prevention of profiteering.

It was not the purpose of the Administration to control absolute prices except in a few commodities, such as wheat and its products, and sugar. Other prices were subject to the law of supply and demand, and the operation of the Food Administration was directed to the elimination of unfair profits and profiteering. In some commodities, however, a degree of stabilization of prices was induced by purchases and sales for the Military Forces and the Allies.

More detailed studies and statistics will be found in the National Archives and in the Hoover Library.

How the farmer fared in these war years is indicated by the Department of Agriculture's estimate of the total value of farm products here given:

TABLE XIII
ESTIMATED TOTAL VALUE OF FARM PRODUCTS IN PREWAR AND WAR YEARS

Calendar Year	Value of Crops Produced	Value of Livestock Products	Total Gross Wealth Produced
1915.....	\$ 6,907,187.000	\$3,868,304.000	\$10,774,491.000
1916.....	9,054,459.000	4,351,905.000	13,406,364.000
1917.....	13,479,000.000	5,852,000.000	19,331,000.000
1918.....	14,330,000.000	8,119,000.000	22,479,000.000
1919.....	16,025,000.000	8,957,000.000	24,982,000.000

The movement of prices is shown on the following page in Table XIV, compiled by the Department of Labor.

It will be seen from these tables that farmers' prices rose steadily from the beginning of the Food Administration in August 1917 until its dissolution in November 1918. Wholesale prices of food, however, were held comparatively stable—much more so than clothing, which was under practically no administrative control.

TABLE XIV
INDEX NUMBERS OF WHOLESALE PRICES IN THE WAR YEARS
(Average prices in 1913 = 100)

Year and Month	Farm Products	Wholesale Food	Cloth and Clothing
1917			
January	147	150	161
February	150	160	162
March	162	161	163
April	180	182	169
May	196	191	173
June	196	187	179
July	198	180	187
August	204	180	193
September	203	178	193
October	207	183	194
November	211	184	202
December	204	185	206
Average for year.....	188	177	181
1918			
January	205	188	209
February	207	186	213
March	211	178	220
April	217	179	230
May	212	178	234
June	214	179	243
July	221	185	249
August	229	191	251
September	236	199	251
October	223	199	253
November	219	203	253

Retail prices were held even more stable, as shown by the index of prices of selected foods by the Department of Labor (Table XV).

The most interesting of the computations of the Food Administration was based upon the national food bill, i.e., the actual expenditure of the country for food each month or three-months' period. The prices upon which it was based were reported by some 7,000 volunteers in every part of the country. Inasmuch, however, as these prices included *all food*, while the Food Administration was interested mainly in the staples, they reflect a larger fluctuation than the price of those staples. Under the impact of scarcity and inflation the uncontrolled commodities of course rose more sharply. That is indicated in Table XVI, shown on page 320.

In the light of these figures, one may conclude that there was

TABLE XV
COMBINED INDEX NUMBERS OF TWENTY-FOUR PRINCIPAL FOOD
COMMODITIES, WAR YEARS
(Average price, 1913 = 100)

Year and Month	Index Number	Year and Month	Index Number
1917		1918	
January	128	January	160
February	133	February	161
March	133	March	154
April	145	April	154
May	151	May	158
June	152	June	162
July	146	July	167
August	149	August	171
September	153	September	178
October	157	October	181
November	155		
December	157		

TABLE XVI
TOTAL COST OF PRINCIPAL FOODS PER CAPITA IN THE UNITED STATES,
WHOLESALE AND RETAIL, WAR PERIOD*

Period	Wholesale	Retail	Percentage Increase from Wholesale to Retail
"Average Period"	\$13.99	\$20.57	47.2
Control Period—1917			
Third Quarter	19.95	27.84	39.6
Fourth Quarter	21.24	29.12	37.1
1918			
First Quarter	21.37	29.61	38.6
Second Quarter	21.13	29.74	40.7
Third Quarter	23.88	33.43	40.0
Fourth Quarter	25.76	35.19	36.6

* The "Average Period" is from the 3d Quarter, 1915, to the 3d Quarter, 1916.

no profiteering between the retailer and the wholesaler during the period.

The moderating effect of stabilization is indicated in Table XVII opposite.

In a group of thirty commodities during the control period, the highest price reached was 241.1, compared to 231.0 in the previous year not under control.

TABLE XVII
RANGE IN WHOLESALE PRICE INDEX, AUGUST 1917-OCTOBER 1918,
COMPARED TO THE PREVIOUS YEAR

Commodity	Fluctuation of Controlled Commodities for Period	Fluctuation of the Previous Year	Commodity	Fluctuation of Un-controlled Commodities for Period	Fluctuation of the Previous Year
Wheat flour	16.8	127.2	Butter	82.4	17.7
Rice	33.6	62.4	Cheese	88.2	23.8
Sugar	32.0	34.0	Fowls	85.6	44.1
Canned peas	18.7	45.6	Eggs	129.2	63.2
Cooking fat	22.4	69.5	Peanuts	155.7	120.2
Lard	29.4	98.2			
Bacon	58.5	111.1			

An indication of the effectiveness of the absolute control of wheat and the control of prices to the consumer of flour is shown in the following table, based upon 4½ bushels of wheat yielding 1 barrel of flour and a certain percentage of by-products:

TABLE XVIII
EFFECT OF CONTROL OF WHEAT AND FLOUR PRICES, WAR PERIOD

Period	Price of 4½ Bushels of Wheat to Farmer	Spread of Sale Price of Finished Products	
		High	Low
1917			
June—before control	\$ 9.90	\$14.91	\$5.01
July—before control	10.30	14.02	3.72
August—before control	9.43	14.29	4.85
September—after control	9.02	12.40	3.37
October—after control	9.00	11.47	2.48
November—after control	9.04	11.26	2.22
December—after control	9.08	11.34	2.25
1918 average—after control	\$ 9.17	\$11.25	\$2.30

Table XIX (p. 322) gives absolute retail prices during the control period in certain staple commodities.

The consumer therefore was but little disturbed, while the farmer benefited greatly—the consequence of narrowed margins between manufacturer, wholesaler, and retailer, and the prevention of profiteering.

TABLE XIX
RETAIL PRICES OF STAPLE FOODS, WAR PERIOD
(Pounds)

	Wheat Flour	Bread	Corn- meal	Rice	Pk. Pota- toes	Beans	Canned Peas*	Bacon	Lard	Milk	Butter	Sugar	Coffee
1917													
October	.053	.108	.068	.110	.434	.188	.177	.472	.312	.118	.510	.098	.318
November	.052	.107	.068	.111	.449	.185	.176	.480	.325	.123	.511	.099	.317
December	.051	.103	.068	.112	.441	.184	.175	.485	.332	.126	.527	.198	.319
1918													
January	.051	.103	.068	.114	.444	.184	.177	.490	.332	.127	.547	.097	.320
February	.051	.102	.068	.116	.436	.180	.177	.491	.333	.127	.557	.096	.319
March	.051	.102	.069	.118	.392	.182	.175	.483	.332	.128	.533	.094	.306
April	.051	.100	.069	.119	.336	.180	.178	.491	.333	.127	.503	.093	.305
May	.051	.100	.069	.119	.322	.178	.178	.497	.332	.127	.500	.093	.305
June	.052	.100	.066	.124	.456	.176	.177	.509	.329	.126	.502	.093	.288
July	.052	.099	.066	.128	.595	.173	.178	.514	.328	.127	.516	.094	.284
August	.052	.099	.066	.133	.567	.173	.181	.527	.331	.129	.531	.095	.284
September	.052	.099	.066	.137	.575	.171	.185	.544	.335	.132	.579	.099	.284
October	.068	.099	.066	.138	.537	.168	.189	.565	.343	.139	.635	.105	.285

* No. 2 cans.

XXVII. CO-ORDINATION OF PURCHASES

Reference has already been made herein to the important bearing upon food control of the purchases made by our own and the Allied governments. The shortage of shipping had driven the Allied governments to rationing their populations. This measure necessitated that the governments take over commercial imports of food and wholly direct the loading of ships, lest space should be wasted or devoted to less essential commodities and the flow of the essential commodities interrupted. Thus not only was the purchase of staples abroad taken over by each Allied and neutral government, but these governments rapidly combined into single agencies that threatened to dominate prices to the American farmer.

The influence upon market conditions and prices of foodstuffs of these purchases, as well as the power of control possible through their proper direction, made it both logical and necessary that the supervision over and the co-ordination of these purchases should be with the Food Administrator. This development of purchasing by other governments was natural, but it was necessary that its tendency should be controlled. With short supplies it also became necessary to co-ordinate these agencies with the buying agencies of our Army and Navy in order to prevent prejudicial division of supplies and undue drainage from the civil consumer. It was further recognized that the centralization of action in the hands of the Food Administration presented possibilities for good in the stimulation of production and the stabilization of prices, and these powers were utilized to those ends.

This control in fact became one of the most important instruments of the Food Administration. The use of this instrument in the stabilization of the prices of hogs, cottonseed products, etc., has already been described. We have here for consideration the development of the control and the process and machinery by which the purchases were co-ordinated and placed with the trades so as to disturb as little as possible the market conditions.

The first step toward the centralized direction of large war purchases with a view to preventing undue disturbance in the market was taken early in June 1917. The Committee on Supplies of the Council of National Defense, with the approval of Mr. Hoover and

the Secretary of War, invited to Washington a committee representing the packers of hermetically sealed and sterilized canned foods for the purpose of considering the possible requirements of canned foods for the Army and Navy needs. At this conference it was agreed that the requirements of the Army and Navy for canned goods should be allotted among all the manufacturers of the country. A Co-operative Committee of Cannerymen was appointed, and on June 23 this Committee issued a bulletin to the canning industry outlining the general situation and asking the cannerymen to co-operate in supplying food for the Army and Navy and to reserve certain designated percentages of their total pack. It was further agreed at this time between the cannerymen and the Army and Navy that the prices to be paid by the government for canned foods should be settled by the Division of Costs and Accountancy of the Department of Commerce, which Division should arrive at such prices as in their opinion were "fair and just."

The orders for the Army and Navy were handled in this way through the Committee on Supplies of the Council of Defense until the Food Administration was organized. Upon the centralization of the buying in the hands of the Food Administration, the Food Purchase Board was organized at the suggestion of the Food Administrator and Army and Navy buying was directed by that Board.

Before the creation of the Food Administration, buying for the different Allied governments was centralized in the hands of commissions of those governments. Under the terms of an agreement between the Secretary of the Treasury and the Allied governments, the control of these purchases with respect to amounts and general direction of where purchases should be allowed was placed in the hands of a committee composed of the following three members: Robert S. Brookings, Bernard M. Baruch, and Robert S. Lovett. Under date of September 27, 1917, with the approval of the President, this committee authorized the Food Administrator to carry out the purchasing for the Allies under the agreement with the Secretary of the Treasury. The following is quoted from the letter of authorization of the committee above designated:

As the United States Food Administration has been established by Congress for the purchase or control of food and feeding stuffs in the United States, we are convinced that duplication of effort and expenditure and conflict of interest may be avoided, and more prompt and adequate results may be obtained, by the coordination of both the domestic and Allied Governments'

requirements through the Food Administration and its agencies. We, therefore, request and authorize the United States Food Administration to undertake to purchase, and direct the purchase, of all food and feeding stuffs which may be required by any of the Allied countries under the arrangements entered into with the Secretary of the Treasury, and the Allied Governments have been notified to this effect.

The control of these purchases was closely related to the more comprehensive control of exports exercised by the War Trade Board, which was charged with the administration of the Trading with the Enemy Act and the embargo provisions of the Espionage Act. The Food Administrator had two representatives on the War Trade Board whose function it was to secure the technical action of that Board in carrying out the Food Administrator's policies as to amounts and destination of exports.

The formation of a Division of Co-ordination of Purchases of the Food Administration was formally announced on October 24, 1917, and the functions of this Division were stated to be:

to coordinate the purchases of the Allies and the Food Administration of such important staple food supplies as those mentioned in the President's Proclamation of October 8, 1917, and to cooperate with the Army, Navy, and other governmental departments in an endeavor to coordinate so far as practicable their purchases of such food supplies.

Following the recommendation of the Food Administrator, the Secretary of War, the Secretary of Navy and the United States Food Administrator approved in December 1917 the organization of the Food Purchase Board. This Board consisted of the Quartermaster General of the Army or his representative, the Paymaster General of the Navy or his representative, the head of the Division of Co-ordination of Purchase of the Food Administration, and a representative of the Federal Trade Commission. At the first meeting of the Board on December 11, 1917, Rear Admiral Samuel McGowan was elected chairman. Meetings were held once a week to co-ordinate the buying of certain food commodities for the Army and Navy with those of the Allied governments and other such buyers.

In a memorandum dated November 19, 1917, addressed to the Allied Provisions Export Commission, the American National Red Cross, the Commission for Relief in Belgium, the Financial Attaché of the Russian Embassy, and the War Trade Board and the Traffic Executive, the Food Administrator, after calling attention to the

dangers and impossibility of allowing the purchases of these large buyers to go uncontrolled, stated :

The Food Administration, therefore, considers that it is vital to the general welfare that these large purchases in certain commodities shall be made by plans of allocation among manufacturers at "fair and just" prices, the efforts of the Federal Trade Commission to be directed to see that costs are not inflated.

In every case where plans of allocation are determined, none of the buying agencies above mentioned shall go into the market independently without the approval of the Division of Coordination of Purchase of the Food Administration.

The detailed procedure in carrying out allocations shall be in accordance with the plan of procedure issued from time to time by the Division of Coordination of Purchase for the individual commodities.

The memorandum further stated that all allotment plans between Allied countries and the industries should be entered into with the Allied Provisions Export Commission, through the Division of Co-ordination of Purchase, that all estimated and specific requirements of food products of all characters for the Allied countries should be furnished the Division of Co-ordination of Purchase by the Allied Provisions Export Commission, that such requirements shall bear the approval of the Allied Provisions Export Commission, also that on the question of issuing licenses for the exporting of the purchases the approval to export will be arranged by the Food Administration, Division of Co-ordination of Purchase, and the War Trade Board and the final action taken on each requirement shall have the approval of the Head of the Division of Co-ordination of Purchase.

The plan outlined in this memorandum was the one followed by the Division of Co-ordination of Purchase. The Allied Provisions Export Commission acted as the buying agency for the Allies and informed the Division of Co-ordination of Purchase of the Food Administration of the requirements of the Allies; the Food Purchase Board acted as the recommending buying agency for the Army and Navy and gave the Food Administration the necessary information as to the requirements of these agencies. Grains and grain products were not included in the scheme of buying for the Allies, as this buying was done through the Food Administration Grain Corporation.

Upon receipt of the information as to requirements the Division of Co-ordination of Purchase of the Food Administration decided

what method of purchase should be adopted in securing these requirements. Three methods were used:

1. Allocation throughout the industry producing the desired commodity, at the fair price recommended by the Food Purchase Board. In the case of the Allied purchases, the price had to be approved by the Allied Provisions Export Commission, and in the case of the purchases for the Army and Navy, by those departments, before the allotment of the order was given.

2. The securing of bids which were passed upon by the purchaser. That is, the requirement of the purchaser was communicated to the industry and bids were asked; these bids were then passed upon by the purchaser and, if approved, were made direct.

3. In the case of other orders, usually smaller ones, where the disturbing influence would not be great, the purchaser was advised that he might go into the market and purchase directly.

The Allied purchasing was therefore completely controlled. The license to export was not issued by the War Trade Board until the application for the same had been approved by the Food Administration, and this approval would not be given if the rules of the Division of Co-ordination of Purchase had not been followed. Also in the case of the northern neutrals, under arrangements between their respective governments, the War Trade Board sometimes required these countries to secure their purchase through the Division of Co-ordination of Purchase of the Food Administration.

In placing the orders of the Army, the Navy and the Marine Corps for different commodities the same plan was not followed with respect to all commodities nor with respect to the same commodity for the entire period of the control. In the case of some commodities an agreement was reached in advance with representatives of the industry covering the price to be paid for a number of months. In other cases orders were placed upon cost plus a reasonable profit basis and the costs were examined into by the Federal Trade Commission acting on behalf of the Food Purchase Board.

To assure the supply of the requirements of canned foods for the Army and Navy Departments, canners were at different times directed by the Division of Co-ordination of Purchase of the Food Administration in behalf of the purchaser to hold a certain percentage of their pack subject to further orders. This was in addition to the limitation under the license rules of the Food Administration effective November 1, 1917, which prohibited the licensees selling

for future delivery more than 75 per cent of their estimated pack. These directions to reserve were later supplemented with more specific statements of requirements, and if these requirements were under the amount reserved the canner was released from obligation to hold the surplus amount for a greater length of time.

It should be noted that the Food Administration did not actually complete the transaction of purchase and sale for any of these commodities. The function of the Food Administration was completed when the buyer and the seller had been brought together and the terms of the sale agreed upon and approved by the Food Administration. Details of settlement, disputes as to quality, or claims for damages because of delay or other nonfulfillment of the contract of

STATEMENT OF THE VALUE OF PURCHASES APPROVED BY OR ACQUIRED
THROUGH THE DIVISION OF CO-ORDINATION OF PURCHASE,
UNITED STATES FOOD ADMINISTRATION

MAY TO DECEMBER, 1918, INCLUSIVE

Commodity	Totals	Grand Totals
Canned foods	\$111,447,374	
Dairy products	30,113,288	
Dried fruits and vegetables.....	49,618,731	
Grains and grain products.....	191,053,158	
Meat and hog products.....	566,371,588	
Miscellaneous	36,534,980	
Oils	54,279,440	
Sugar	29,951,860	
		\$1,069,370,419
Month		
May	\$137,654,492	
June	125,122,610	
July	97,799,436	
August	18,731,397	
September	131,153,985	
October	170,984,845	
November	184,092,399	
December	203,831,265	
		\$1,069,370,419
Purchaser		
Allied governments	\$715,755,756	
Army, Navy, and Marines.....	206,884,727	
C.R.B.	135,496,786	
Red Cross	4,893,700	
Salvation Army	147,021	
Y.M.C.A.	6,182,429	
		\$1,069,370,419

TABLE XX
MONTHLY COMPARATIVE STATEMENT OF THE VOLUME OF BUSINESS TRANSACTED
THROUGH THE DIVISION OF CO-ORDINATION OF PURCHASE, 1918

Commodity	May	June	July	August
Butter	\$ 1,512,000	\$ 3,503,733	\$ 1,339,720	\$ 463,417
Cheese	4,379,200	2,465,925	2,632,000	5,800
Condiments .....	.....	280,300	.....	.....
Dehydrated products .....	.....	.....	224,000	685
Fish, canned	154,492	85,657	1,574,650	252,598
Flour	4,642,373	21,150,107	6,326,995	1,404,757
Fruits and vegetables, canned	2,536,833	6,688,137	4,001,716	2,889,432
Fruits and vegetables, dried	197,444	687,865	2,736,304	2,007,976
Grain products	150,791	5,043,971	2,744,232	320,703
Hog products, not includ- ing lard	73,222,309	28,145,675	25,815,089	337,361
Lard	12,340,632	21,014,700	15,844,300	31,615
Meat products	22,426,250	12,711,767	21,233,128	2,236,489
Milk, condensed, evapo- rated, and powdered	4,436,125	7,005,414	6,418,325	6,217,990
Miscellaneous	419,060	2,800,016	71,799	555,352
Oils	8,528,600	.....	39,000	1,060,140
Raw grains .....	.....	7,442,257	808,614	48,000
Sugar	2,708,383	6,097,086	5,989,564	899,072
Monthly value of purchases	\$137,654,492	\$125,122,610	\$ 97,799,436	\$ 18,731,387
Commodity	September	October	November	December
Butter	\$ 344,931	\$ 5,733,936	\$ 4,053,872	\$ 3,362,862
Cheese .....	.....	33,000	257,892	25,000
Condiments .....	.....	2,082	1,116	.....
Dehydrated products .....	.....	1,775,065	31,695	.....
Fish, canned	3,106,182	17,080,570	1,838,500	271,118
Flour	14,416,910	22,272,275	26,841,755	36,701,313
Fruits and vegetables, canned	5,897,031	6,019,170	2,573,029	608,842
Fruits and vegetables, dried	9,077,949	11,538,956	18,716,824	2,623,968
Grain products	4,384,209	9,727,441	2,975,337	2,009,818
Hog products, not includ- ing lard	234,817	35,348,566	20,423,128	67,412,232
Lard	13,047,290	10,362,125	14,421,353	22,549,043
Meat products	55,248,711	19,819,217	65,367,868	6,777,923
Milk, condensed, evapo- rated, and powdered	8,509,770	8,744,171	9,119,284	5,418,338
Miscellaneous	13,727,763	5,283,375	2,489,501	6,124,252
Oils .....	.....	.....	7,203,200	37,448,500
Raw grains .....	.....	12,390,584	452,521	.....
Rice .....	.....	.....	906,405	3,873,950
Sugar	3,158,422	4,854,312	4,272,551	1,972,470
Wheat .....	.....	.....	2,146,568	6,651,627
Monthly value of purchases	\$131,153,985	\$170,984,845	\$184,092,399	\$203,831,265

NOTE.—The flour and sugar purchases of the Allied governments for the month of May are not included; nor are the meat and hog-product purchases of the Army, Navy, and Marine Corps for the months of May, June, July, and August, as they did not purchase through us in these months. The figures under "Rice" for November include beans and peas purchased through the Grain Corporation.

sale were settled between the parties without the intervention of the Food Administration.

The Division of Co-ordination of Purchase confined its activities to commodities other than green and cereal products and sugar. The co-ordination of Army, Navy, and export purchases in these commodities was allowed through the Cereal and Sugar Divisions directly.

TABLE XXI

MONTHLY COMPARATIVE STATEMENT OF THE VOLUME OF BUSINESS TRANSACTED THROUGH THE DIVISION OF CO-ORDINATION OF PURCHASE, 1918

Month	Allied Governments	Army, Navy, and Marine Corps	C.R.B.	Red Cross	Salvation Army	Y.M.C.A.
May	\$126,435,328	\$ 7,541,137 2,414,972	.....	\$ 925,061	.....	\$ 337,994
June	90,988,027	10,559,487 3,931,003	\$ 19,576,533	.....	.....	67,560
July	70,124,166	7,565,365 3,704,173	16,029,099	364,313	.....	12,320
August ...	9,754,379	4,585,036 2,461,490	997,340	660,099	\$ 6,321	266,722
September	81,109,033	30,356,024 8,448,198	7,654,896	661,979	29,581	2,894,274
October ..	89,575,915	34,415,430 5,587,375	39,612,570	804,547	17,581	971,427
November	93,655,697	64,406,934 3,473,314	19,517,056	1,449,821	51,738	1,537,839
December.	154,123,211	16,085,501 1,349,288	32,109,292	27,880	41,800	94,293
Totals ..	\$715,755,756	\$206,884,727	\$135,496,786	\$4,893,700	\$147,021	\$6,182,429

NOTE.—"Allied Governments" includes Belgium, France, Great Britain, Italy, and (British) Navy and Army Canteen Board. Purchases were made for Northern Relief and Russia in November, which are included under "Allied Governments."

The flour and sugar purchases of the Allied governments for the month of May are not included; nor are the meat and hog-product purchases of the Army, Navy, and Marine Corps for the months of May, June, July, and August, as they did not purchase through us in these months.

The Knights of Columbus made application to purchase through us, but their purchases were so small as to allow them to be bought directly; therefore they do not appear on this statement.

Allied governments	\$715,755,756
Army, Navy, and Marine Corps	206,884,727
C.R.B.	135,496,786
Red Cross	4,893,700
Salvation Army	147,021
Y.M.C.A.	6,182,429

Grand total for the eight months..... \$1,069,370,419

Prior to May 1918 the Food Administration did not keep a complete record of the total amounts of the commodities purchased by the different agencies through or with the approval of the Division of Co-ordination of Purchase. Tables XXI and XXII, however, give the totals and classification of these purchases from May to December, 1918, inclusive. A consideration of these figures will disclose the influence of these purchases, and hence the importance of properly co-ordinating them.

TABLE XXII

MONTHLY COMPARATIVE STATEMENT OF THE VOLUME OF BUSINESS TRANSACTED THROUGH THE DIVISION OF CO-ORDINATION OF PURCHASE, 1918

Purchaser	May	June	July	August
Allied governments	\$126,435,328	\$ 90,988,027	\$ 70,124,166	\$ 9,754,379
Army	7,541,137	10,559,487	7,565,365	4,585,036
Commission for Relief in Belgium		19,576,533	16,029,099	997,340
Navy	2,414,972	3,931,003	3,704,173	2,461,490
Red Cross	925,061	.....	364,313	660,099
Salvation Army .....	.....	.....	.....	6,321
Y.M.C.A.	337,994	67,560	12,320	266,722
Monthly value of purchases	\$137,654,492	\$125,122,610	\$ 97,799,436	\$ 18,731,397
Purchaser	September	October	November	December
Allied governments	\$ 81,109,033	\$ 89,575,915	\$ 93,655,697	\$154,123,211
Army	30,356,024	34,415,430	64,406,934	16,085,501
Commission for Relief in Belgium	7,654,896	39,612,570	19,517,056	32,109,292
Navy	8,448,198	5,587,375	3,473,314	1,349,288
Red Cross	661,979	804,547	1,449,821	27,880
Salvation Army	29,581	17,581	51,738	41,800
Y.M.C.A.	2,894,274	971,427	1,537,839	94,293
Monthly value of purchases	\$131,153,985	\$170,984,845	\$184,092,399	\$203,831,265

NOTE.—“Allied Governments” includes Belgium, France, Great Britain, Italy, and (British) Navy and Army Canteen Board, also Russia and “Northern Neutrals” (November only).

The flour and sugar purchases of the Allied governments for the month of May are not included; nor are the meat and hog-product purchases of the Army, Navy, and Marine Corps for the months of May, June, July, and August, as they did not purchase through us in these months.

“Navy” includes Marine Corps.

The Knights of Columbus made application to purchase through the Division of Co-ordination of Purchase, but their purchases were so small as to allow them to be bought directly; therefore they do not appear on this statement.

XXVIII. GRAIN CORPORATION PURCHASES AND SALES

Cereals and cereal products were purchased for export and for the Army and Navy through the Food Administration Grain Corporation. The amount (in dollars) of the various commodities purchased and sold by the Grain Corporation from its organization to June 30, 1919, is as follows:

Commodity	Sales	Purchases
Barley	\$ 39,479,157.45	\$ 43,109,928.48
Beans	43,565,291.78	46,623,122.09
Butter oil	1,247,380.20	1,247,380.20
Cereal products	40,535,439.11	45,503,173.79
Corn	4,097,197.19	4,097,155.61
Cornstarch	458.03	458.03
Cottonseed cake	191,404.33	191,404.33
Flour	619,606,338.43	653,640,057.44
Oats	40,032.96	40,032.96
Peas	3,584,066.53	4,131,836.83
Rice	29,085,365.16	29,595,180.35
Rolled oats	327,220.10	327,220.10
Rye	121,506,923.96	122,487,896.42
Seed	3,571.30	3,571.30
Wheat	1,547,277,295.40	1,567,773,980.30
Total	\$2,450,547,141.93	\$2,518,772,392.23

These purchases and sales were not wholly for export and the Army and Navy; a small percentage, particularly in wheat, represents transactions in the domestic market, for price-stabilization purposes.

The totals do not include the following totals for purchases and sales made on behalf of the Commission for Relief in Belgium and other European Relief:

	Purchases	Sales
Commission for Relief in Belgium.....	\$171,402,627.33	\$171,402,627.33
European Relief	209,335,151.89	213,270,762.76

XXIX. ENFORCEMENT

The Food Control Act contemplated two methods of procedure in carrying its provisions into effect. In the first place, for certain acts which it prohibited and for other acts which it prescribed, recourse to ordinary legal proceeding was provided either by fixing penalties for certain acts made criminal or by establishing procedure for the seizure of hoarded food commodities or for requisitioning any supplies or any plant necessary to any public use. In the second place, the enforcement of the law was left to administrative action.

An enforcement division of the Food Administration was created in October 1917. The Food Administration through this division was concerned almost exclusively with the administrative or quasi-judicial action rather than with the legal proceedings possible under the Act. There were instituted only very few, generally unimportant, proceedings under the Act; while the quasi-judicial activities of the division, in addition to a large number of cases disposed of by State Administrators without recourse to Washington, included over 8,769 revocations of license, both limited and unlimited, unfair or blacklisting orders, refunds and contributions, temporary suspensions and minor penalties, requisitions and forced sales, and stop-license orders.

Prior to January 1, 1918, only six such penalties were imposed, consisting of four unlimited revocations, one limited revocation, and one requisition. After January 1, 1919, comparatively few cases involved disciplinary action. Consequently the larger part of the work of the Enforcement Division arose in the year 1918.

The records of the Enforcement Division (Table XXIII, p. 334) show the imposition of penalties.

The figures presented fall far short of giving the true picture of the enforcement activities of the Food Administration. The number of cases in which desired results were secured without the imposition of a penalty far exceeded the number summarized above. And the Federal Food Administrators in their respective states—either with or without penalty—disposed of a vast number of cases under the authority of, but without special report to, headquarters at Washington.

TABLE XXIII
EXTENT OF PENALTIES OF THE ENFORCEMENT DIVISION

Nature	Total from Aug. 10, 1917, to Dec. 31, 1918	New Cases Jan. 1 to Nov. 21, 1919	Total Aug. 10, 1917, to Nov. 21, 1919	Out-standing Nov. 21, 1919	Terminated up to Nov. 21, 1919
Unlimited revocations	249	57	306	91	215
Limited revocations	187	5	192	0	192
Unlimited unfair orders	58	5	63	30	33
Limited unfair orders	43	0	43	0	43
Refunds and contributions	4,123	6	4,129	...	...
Temporary suspensions and minor penalties	3,658	7	3,665	...	...
Requisitions, etc.	65	0	65	...	...
Stop orders	210	84	294	164	130
Cancellations	10	2	12	...	...
Criminal cases	72	...	72	...	...
Total	8,603	166	8,769	...	...

The procedure in all of these administrative cases was substantially the same: The foundation for penalty was an investigation of an alleged violation, with an opportunity to the party to be heard on the specific question as to whether he had or had not violated the law, and also on the specific question as to what, if any, penalty should be imposed. In many cases formal hearings were not necessary, because after investigation the party, having been confronted with the facts, accepted the conclusion of the Food Administration as to penalty. The right to a hearing was made a definite principle in all cases and the opportunity of a hearing was afforded the accused however obvious the facts appeared.

In important cases, when the facts were thus determined, generally by a State Administrator or his representative, they were summarized briefly in a report to the Washington office with recommendations as to the penalty to be imposed. After the decision was made, the necessary order was signed by the Food Administrator and forwarded to the State Administrator for service upon the violator.

These orders fell into two general classes, depending upon whether they were addressed to a licensee or nonlicensee. If in the first class, the order either revoked or suspended the violator's license, temporarily or indefinitely, or accepted some action by the violator as a substitute for such revocation or suspension—as, for example, a

refund of excess profits, or a contribution to the Red Cross or some other patriotic organization. In many instances a violator offered and preferred to make such a contribution rather than to have his business closed, even temporarily. In cases of minor offenses such action often met the ends of substantial justice to the best advantage.

In the second class, orders against nonlicensees, the Food Administration did not have the same direct method of control that it might exercise in dealing with licensees. In these cases the order was therefore generally directed to licensees, ordering them not to sell licensed food commodities to the offending nonlicensee, in extreme cases for an indefinite time, but usually for a limited period only. With his supplies thus cut off, the violator was generally quite ready to comply with the requirements of the Food Control Act.

In some cases action had to be taken even before a license was issued. In such cases stop orders held up the issuance of a license, either pending investigation of alleged violations or undue delay in applying for a license, or as a penalty, generally minor and temporary, for some offense committed before a license had been issued. These cases, while large in number, were comparatively unimportant as a rule.

The general attitude toward the offender in all cases was that penalties were less important than securing compliance with the policies of the Food Administration; and, of course, in the last analysis, such compliance, particularly as concerns administrative activities, depended upon public sentiment throughout the country. As an aid in bringing that sentiment to bear, full publicity was given to the facts where penalties had been imposed, not merely to warn other wrongdoers but also to indicate to the community those who were unpatriotic violators of the law and, further, that the Food Administration was protecting the patriotic citizen who accepted the burdens all should carry and was restricting the activities of those who tried to evade such burdens. This publicity was given to the press both locally and from Washington and, where necessary, included notices to trade publications and particular classes of licensees. Where a business was suspended, either indefinitely or temporarily, notice of that fact was generally required to be posted upon the premises, and the violator was permitted to do no new business in licensed-food commodities but merely to dispose of commodities on hand or under contract at the time, under the supervision of the State Administrator or his representative. Where the subse-

quent conduct of the violator indicated that the community would be protected against future violation by allowing him to do business, he was allowed to reopen, even sometimes in advance of the time fixed in the penalizing order. Only in dealing with those individuals who continued to evidence a complete disregard for the law and the policy of food conservation was the extreme action taken of closing the business during the period of the war.

The chief cases in which the Enforcement Division came in contact with American households were where food commodities had been held in excess of reasonable requirements in violation of the hoarding provisions of the Food Control Act or where they had failed to procure substitutes in purchasing wheat flour. But even in these cases the appeal was more to patriotism than to either criminal or administrative proceedings. Except in the case of alien enemies, these patriotic appeals met with such instant response that neither libel for hoarding nor requisitioning was necessary to any substantial extent. Excess amounts, particularly of flour and sugar, were returned to the trade in vast quantities, both by householders and by dealers, in most cases without even a threat of drastic action. The cases referred to in the tabulation above, "requisitions and forced sales," refer almost entirely to commodities held by dealers for speculative purposes, or worse. Indeed, the voluntary pledges given by many consumers to abstain entirely from the use of wheat products until the next harvest, coupled with the policy of the Food Administration to rely chiefly on voluntary conservation by consumers, served in practice to relieve the American householder from official contact with the Enforcement Division.

In addition to the foregoing, a large amount of routine work was carried on in dealing with shipments of food products. This class of work fell into two general classes, depending upon whether perishables or nonperishables were involved.

In cases of nonperishables, involving no waste of food commodities or other violation of the law, or of the rules and regulations, and no interference or delay with the transportation and distribution of food, the Food Administration was slow to interfere, usually referring the parties for the protection of their rights, if any, to arbitration or ordinary legal proceedings. Occasionally, however, where a shipper or consignee of food commodities, even though nonperishable, had made a practice of conducting his business in an unfair, dishonest, or other improper manner, his acts were considered to be

unfair practices in violation of Section 4 of the Food Control Act and he was dealt with accordingly.

In the case of perishable food commodities, the Enforcement Division was obliged to intervene much more actively in disputes between private individuals; for those disputes, if left to settlement by ordinary prewar remedies, often resulted in the loss or deterioration of the perishable commodities involved. The effort made was to prevent this loss, and at the same time to prevent both shipper and consignee from suffering any injustice because of the intervention. When the goods were not what were ordered the consignee was not required to accept them, but their prompt marketing had to be arranged by the consignor; but where the consignor complied with his contract the consignee was directed to accept and market. Difficulties arose in the intermediate cases where there was a variation from perfect performance by one party or the other or by both. When that variation was capable of financial adjustment and did not go to the essence of the contract, it was the consignee's duty to accept and market and the shipper's duty to adjust. To protect both, the Food Administration stood ready to provide arbitration, and usually directed that all or a part of the proceeds of the draft should be held to await the decision on such arbitration, or legal proceedings if that was preferred by the parties. The first consideration was, by some such method, to market the food commodities promptly and without loss, so far as might be. A final settlement of the difference between the parties was postponed for adjustment after the food should be marketed. While no exact figures can be given, a vast supply of perishables were thus conserved and marketed in the more than three thousand cases thus disposed of through the Enforcement Division. Except for unfinished cases, this work was brought to a close early in December 1918, when regulations governing dealers in fresh fruits and vegetables were withdrawn.

CEREAL-ENFORCEMENT SECTION

One section of the Enforcement Division was organized to deal with all enforcement questions relating to milling and feed. This was a comparatively late development, which was extended during the summer of 1918 by the organization of zone committees throughout the country. The plan for these zone committees made possible more direct, prompt, and harmonious dealing with the somewhat complicated questions which arose in connection with these indus-

tries. The activities of this section were based upon the same general principles as those outlined above.

Since the close of the first period of mill regulation, July 1, 1918, this section has been engaged, in addition to its other activities, in auditing mill accounts to ascertain the amount of, and to secure proper disposition of, profits which exceeded the allowable profits under the rules in force during the ten-months' period ending June 30, 1918. This task, necessarily one of great extent and difficulty, was complicated and delayed by interminable discussion raising doubts as to the meaning and effect of regulations. Moreover, as a practical matter it was difficult for mills to determine accurately in advance the prices which they could charge without causing their profits, covering the entire ten-months' period, to exceed the maximum allowed profits of twenty-five cents per barrel on flour and fifty cents per ton on feed. It was therefore inevitable that there should be some excess profits to be refunded, and this fact was recognized by the Food Administration, and, generally, by the mills. The audits were often complicated and difficult, and in some cases differences of opinion led to hearings. In most cases refunds were made voluntarily as soon as the audits were finished, but in some comparatively few cases revocations of licenses became necessary. Regardless of the cessation of enforcement work in other directions, Enforcement Division activities in this connection increased rather than diminished after the Armistice. The task of auditing the accounts of all mills proved to be a long one, but justice to all required that the work should not stop short of a complete audit of every licensed mill. This work was therefore continued under the direction of the Chief of the Cereal Division of the Food Administration by virtue of the Executive Order of November 21, 1919.

FIELD SUPERVISION SECTION

The report system proved its value, and at the same time proved its limitations. Such desultory field inspection as developed naturally in connection with reports, and as made by the inspectors in the service of the state organizations, proved so effective that it was decided that great practical advantage would result by augmenting the inspection service throughout the country instead of endeavoring to accomplish results by further development of the report system.

At the start the chief interest was centered on the wholesale grocery trade. As about 65 per cent of the food commodities on

the average housewife's shelves are distributed by the wholesale grocer, devising of means to cover this trade meant that we would be reaching a large part of the whole need and in the process would also create machinery for covering the inspection needs of other lines of food commodities.

To this end the heads of prominent wholesale-grocery concerns were enlisted on practically a volunteer basis. They were brought to Washington for instruction as to the policy to be pursued and the needs of the work. These men were termed field advisers. In this, as in other respects, the Food Administrator recognized that the licensee generally was patriotic and would respond more wholeheartedly to a friendly approach than to a show of force or authority. We therefore endeavored to make the search for violation and penalizing incidental, and to emphasize the constructive side of the work, that is, instruction in the purposes, policies, and requirements of the Food Administration.

At the start the staff selected did actual inspection work outside of the territories in which their own businesses were located. But it soon became apparent that rather than take on hundreds of purely governmental inspectors, the best results would be secured by decentralizing the entire inspection system into the various states. To this end the field advisers were used as an educational staff available on call of the Federal Food Administrators. They were instructed to proceed to the various states, inform themselves of existing systems of inspection, learn local conditions, and co-operate with the Federal Food Administrators in organizing an efficient inspection staff. From a preliminary survey made in July 1918 it was apparent that adequate inspection was urgently needed in many states.

The section grew rapidly. By October 30, 1918, twenty-two states were covered and nine field advisers had been appointed whose combined monthly salaries amounted to but \$1,375. By November 30, sixteen advisers had been appointed, and provision had been made for inspection service in all of the states except the New England States, New York, and Pennsylvania, in which we were informed adequate inspection service already existed.

The results secured in comparison with the cost of maintenance were remarkable, and the efficiency and scope of the system were continually growing up to the time of the Armistice. The Enforcement and Commodity Divisions here at Washington and the State Food Administrators generally expressed great satisfaction, both from

the point of view of inspection and penalization, and from the point of view of constructive assistance to licensees in their patriotic effort to co-operate with the Food Administration.

We were fortunate in the personnel available for the service, and would express our sincere appreciation of their aid, rendered in a large proportion of cases at great sacrifice and with genuine patriotic devotion.

LITIGATION

It was inevitable that, with the cessation of actual hostilities and the rapid withdrawal of license requirements and regulations, the few orders issued by the Food Administration during 1919 should not be as readily acquiesced in as when such acquiescence was induced by patriotic motives backed by the strong public sentiment which supported the Food Administration during the war. As a consequence, for the first time action taken or required to be taken by the Food Administration has been contested in 1919 in court proceedings brought by licensees. There have been only four such cases, however, two of which were voluntarily withdrawn after the requirements of the Food Administration had been met following full conference with the attorneys who had instituted proceedings. Both of these cases involved revocations of license for having taken unjust and unreasonable profits. In one the revocation was finally accepted and complied with, while in the other voluntary refunds of all excess profits taken were made.

In the third case, brought against the Federal Food Administrator for Porto Rico to recover damages for disciplinary action taken against the plaintiff, the Federal Court in Porto Rico disposed of the case in favor of the Federal Food Administrator by sustaining the demurrer interposed on his behalf. In the fourth case, a preliminary injunction against enforcing a revocation of license, granted without notice by the Circuit Court of the City of St. Louis, was vacated after the case was removed to the Federal Court. This case was dismissed in the Federal Court and a refund was made by the litigant in accordance with the Food Administrator's finding.

Except in the first case (which was immediately withdrawn and as to which our requirements were met, after conference with the complainant and his attorney) the above cases were referred to the Department of Justice. On instructions from the latter, the local United States District Attorney intervened on behalf of the govern-

ment in each case and materially aided local counsel for the Food Administration and Grain Corporation in securing a satisfactory disposition.

CANNING

At the time of the dissolution of the Canning Section of the Food Administration there were many unfinished cases in which the canners were required to make refunds based upon the actual proven cost of production at the end of their season's work, instead of upon their former estimated cost of production, as hereinbefore explained. Although these former licensees were no longer subject to license control, it was deemed only fair to the rest of the industry to take such action as was possible to secure refunds from such canners as had not complied with the Food Administration requirements. Accordingly, this work was transferred to the Enforcement Division early in 1919, and for several months a very considerable correspondence was conducted, resulting in securing refunds from canners in individual cases where complaints were made; also in many cases refunds were made by canners covering their entire 1918 pack. Steps also were taken to see that the benefit of refunds thus secured to wholesalers and jobbers was carried through to the ultimate consuming public, by means of reduced prices charged by such wholesalers and jobbers on goods subsequently sold by them.

XXX. INLAND TRANSPORTATION

The excessive demands on transportation consequent upon war conditions made close supervision over the transportation of foodstuffs, feeds, and related commodities one of the important problems of food control. Soon after its formation, therefore, the Food Administration organized a Transportation Division, not to supplant established transportation agencies, but to co-operate in securing for food distribution the highest possible efficiency, and particularly to minimize the enormous waste of foodstuffs resulting from delays in transportation, to guard against disastrous shortages in large centers of population, and to facilitate the transportation of goods for export.

After the taking over of the control of the railroads by the government this division closely co-operated with the United States Railroad Administration, and in February 1918 it was designated as the Inland Traffic Division and made a branch of the United States Railroad Administration.

Through this Division the Food Administration acted as transportation assistant to food producers and consumers. Applications for and complaints concerning transportation via both freight and express were received and analyzed, and an attempt was made to have necessary relief afforded—sometimes through direct consultation with the particular carrier involved but usually through the offices of the Railroad Administration. In addition to the handling of individual applications and complaints, seasonal investigations or surveys were made as to anticipated and actual production of the various crops, fruits, vegetables, grains, and animals, and the results ascertained were filed with the Railroad Administration in order that arrangements could be made for preparing and supplying the necessary transportation.

Through an agreement arrived at between the Railroad Director and the Food Administrator in February 1918, the Food Administration was also put in charge of the inland transportation of foodstuffs for the Allies. The British Ministry of Shipping, the transportation organization of the Allies, filed with the Food Administration copies of all orders placed for foodstuffs in the United States, whereupon it became the duty of the Food Administration, through

its Transportation Division, to arrange with the Railroad Administration for car supply and service, usually of a preferential character. The magnitude of this movement can be appreciated from the fact that the tonnage of cereals alone for shipment to the Allies averaged approximately 800,000 per month, and that of beef and pork products about 200,000 per month.

Beginning with March 1918 this division of the Food Administration was charged not only with the supervision of transportation of foods and feeds but also of various related products, such as food containers, tin plate for the manufacture of cans, box shooks, staves, lumber, and logs for the manufacture of containers, tin cans, canning machinery and supplies, refrigerating machinery, ammonia, cylinders, etc.

Through this Division also a study was made of the class of containers used in the transportation of food, and suggestions for improvements were made where this was found necessary. As a result of these studies a general rule applying to all licensees of the Food Administration was put in force which provided that in loading carload shipments of food commodities in sacks or barrels the licensee should pack all food commodities in such containers and in such manner that the commodity should not be injured from protruding bolts, from foreign matter in the car, or from dampness or rain from without. Detailed specifications were also embodied for the guidance of the licensee. A few special regulations were also promulgated applying to licensees shipping certain commodities requiring that improved methods of packing should be adopted. For example, shippers of eggs were forbidden to ship eggs in quantities of more than thirty dozen unless the eggs were packed in a proper container, specifications for which were given in the regulation. A great deal of work was done also to secure voluntary action on the part of packers and shippers, which resulted in great improvement in the conservation of foodstuffs in transit. Shippers of flour, grains, and beans were especially active in co-operating to this end.

For the conservation of transportation capacity itself, minimum carloads were prescribed for the shipment of practically all the licensed commodities, and the railroads assisted in the enforcement of these minimum loading rules.

It is not possible within the limits of this report to give an account of the detailed activities of the Transportation Division in arranging car movements; but the following may be cited as typical:

In the first two months of 1918, when the extremely severe weather conditions had resulted in railroad congestion and embargoes, through the action of the Food Administration in co-operation with the Car Service Commission, many serious food and feed shortages, principally in the territory east of the Mississippi and north of the Ohio rivers, were relieved and suffering was avoided. In the interior East, in New England, and in the anthracite regions forage was exhausted and great numbers of cattle, including dairy herds and other livestock, were saved from starvation by arranging the movement from the West, through embargoed territory, of several special trains loaded with animal feeds, distribution of which was made to communities in accordance with advices from the Coarse Grains Section of the Food Administration.

Large supplies of potatoes, fruits, vegetables, and other produce from the great producing areas were moved into the large consuming centers so that they might be consumed as substitutes for exportable staples. Special trains were arranged to supply certain sections of the South with salt where the shortage of this essential was holding up the killing of hogs.

The matter of securing transportation for food containers was one of grave concern during the congested period. Railroads had embargoed dead freight, and yet food could not be distributed without the necessary containers. One specific movement arranged with the Car Service Commission was for more than 300 cars of tin plate to the Pacific Coast for forwarding to Alaska. If this plate had not reached Alaska in time for the 1918 salmon pack, a large percentage of this pack, which was a very important item in supplies for the American Expeditionary Forces, would have been lost.

Arrangements were made with the Railroad Administration for storage-in-transit privileges in various points in Eastern and Central freight association territory and in the Pacific Coast territory. This privilege greatly assisted in an even distribution of the country's apple production.

During September 1918 a shortage of double-deck cars for sheep loading developed in the territory served by the Denver and Salt Lake Railroad, the Oregon Short Line Railroad, and the Denver and Rio Grande. To save the sheep it was absolutely necessary that they should be brought to market from that district without delay because of anticipated snowstorms. General relief was immediately afforded through the efforts of the Food Administration and the

Railroad Administration. Arrangements were also made in September 1918 with the Railroad Administration for the movement of cattle in trainload lots at a reduced rate of 25 per cent from the drought-stricken regions of Texas to Pennsylvania feeding grounds. This movement saved a large number of cattle that were in danger of starvation.

The permit system for the movement of wheat is described elsewhere in this report. In handling cattle shipments a zoning system was arranged by which stock was received on given days for designated markets. This plan, adopted by the railroads in 1917 and further perfected during the early part of 1918, helped to prevent excessive demands on the railroads and gluts at the terminal markets. The large movement of hogs in the fall of 1918 also necessitated the installation of strict control over their shipment. In co-operation with the Railroad Administration there was arranged, effective December 23, a permit system for the movement of hogs to a large number of markets. This permit system was very similar to that followed in the case of wheat marketing. A central committee advised how many carloads of hogs each market would absorb daily and a representative of the Food Administration with this information from all markets before it advised the Railroad Administration as to the allocation of permits equitably among the many railroads serving these markets.

XXXI. MARINE TRANSPORTATION

The shortage of ocean tonnage made it essential that a close supervision should be exercised over the tonnage used in the importation of foodstuffs into the United States. The first step to this end was the mapping out in advance of a unified and co-ordinated program of imports so that tonnage would be used only by essential commodities and that the importation of these essential commodities could be assured. The supervision of this import program fell to the Food Administration as a part of its duty in controlling the food supply. Accordingly, a division of the Food Administration known as the Marine Transportation Division was established to co-operate with the United States Shipping Board in its determination of the minimum program of food imports.

The United States Shipping Board appointed a shipping control committee to allocate to the various trades sufficient tonnage to lift the imports fixed by the minimum programs. The Marine Transportation Division of the Food Administration acted as an intermediary between the Shipping Board and the heads of the commodity divisions of the Food Administration, who in turn kept in touch with the import requirements of the country. Under this arrangement programs were agreed upon and carried out for the importation of wheat from Australia and Argentina, for that of sugar from Cuba, Porto Rico, Hawaii, and the Philippines, and that of vegetable oil, copra, cacao, rice, tea, spices, fish, coffee, jute, burlap, and sisal, and also for the transfer by marine transportation of flour from the Pacific to the Atlantic Coast.

XXXII. CO-OPERATION WITH OTHER GOVERNMENTS

By the time of our entrance into the war the necessity for close co-operation between the Allies in the matter of transport and supply had become imperative. One of the most successful instances of this co-operation was that of the Wheat Executive, which was composed of representatives of Great Britain, France, and Italy. Its function was to determine the respective needs of the Allies in respect to breadstuffs, to ascertain and provide the supply, and finally to buy and ship it. Programs of importation were thus formed and carried out only after a thorough presentation and consideration of the demands of each country.

The so-called Paris Conference held near the end of 1917 for the purpose of securing better co-ordination of the efforts and strength of the Allies reported in part as follows:

The Allies are accordingly agreed:

a) That America, France, Italy, and Great Britain will all tabulate and make available to each other a statement showing in detail, as nearly as possible in the same form, each class of requirements for which tonnage is needed; and secondly, the tonnage now available and likely to be available in future through new building, etc. These requirements having been classified (showing the source of supply, etc.), and having been adjusted (1) to secure a reasonably uniform standard of adequacy, both as between classes of commodities and as between countries, and (2) to bring the total within the carrying capacity of the Allies as a whole, will form the basis on which the general allocation of tonnage will be determined. The calculation will be revised at convenient intervals, in the light of losses, new building, war-requirements, and other factors in the problem; but it will be an essential feature of the scheme that, subject to such periodical re-allocation, each nation shall manage and supervise the tonnage under its control.

b) That the neutral and internal tonnage, obtained through any channel and by whatever country, shall be used in such a way as to increase to an equal extent the tonnage in direct war-service, the extra tonnage being allotted so far as practicable to the most urgent war-need of any of the Allies. The method of allocation will be worked out later, but the principle is recognized that it is urgency of war-needs, and not the method by which the tonnage has been obtained, that is to be the criterion.

c) That steps shall be taken to bring into war-services all possible further tonnage, such as that in South America, etc.

d) That control over cargoes carried shall be such as to ensure that they

satisfy the most urgent war-needs in respect of which the tonnage has been allotted.

To carry out (a) and (b) above, Allied bodies for the different main requirements for food, for munitions, and for raw materials will be formed on the model of the Wheat Executive, America being associated with these bodies.

It being necessary, in order to obtain decisions by the respective Governments, that each country shall designate one or two Ministers,—The United States one or two special delegates,—who will be responsible towards their respective Governments for the execution of the agreements arrived at, and who will meet in conference as Allied representatives, as may be necessary from time to time, whether in Paris or in London, according to the circumstances of the case, either on their own motion or at the request of the Executive Departments, it was resolved that, for the purpose of carrying out the common policy above indicated, the appropriate Ministers in France, Italy, and Great Britain, together with representatives of America, shall take steps to secure the necessary exchange of information, and co-ordination of policy and effort, establishing a permanent office and staff for the purposes.

Following this action of the Paris Conference the Allied Maritime Transport Council was formed in February 1918. Various program committees for the formation of programs as to the importation of commodities were then appointed. These committees, composed of representatives of each of the principal Allies, determined their respective needs through full discussion of the different demands presented. The members of such of these committees as determined food programs made their recommendations and were directly responsible to the Food Controllers of their respective countries. The United States Food Administration had a representative on the committees dealing with cereals, oil-seeds, sugar, meats, and fats.

The United States Food Administrator in July 1918 attended a conference of the various Food Controllers held in London. At this conference the general situation as to food requirements of the Allies for the next year was thoroughly canvassed and the approximate total amount which the Allies would require from the United States was determined.

In addition to the representatives co-operating with the Allies in the determination of the programs of imports, the Food Administration also had representatives in each of the Allied countries whose duty it was to collect data on the food supplies and demands and to keep in touch with the food situation as it developed. A representative of the Food Administration also served on the Inter-Allied

Scientific Food Commission, the Inter-Allied body which studied such problems as rationing and the proper nutritioning of the Allied populations.

REPRESENTATIVES IN NEUTRAL COUNTRIES

The amounts to be shipped to the Allies could not be determined without a knowledge of the absolute requirements of the Neutrals. The Food Administration therefore maintained an organization at home and representatives in each neutral country in Europe and South America for the determination of their own production and of the actual minimum consumption necessary, and thus of the deficiencies in their supply which we should provide.

It was found necessary to give special attention to our relations with Canada and Mexico in regard to matters affecting food imports and exports. For this work there was created in the Washington office of the Food Administration a division of Canadian Relations and one of Mexican Relations, each in charge of a man familiar with these countries. Cordial relations with the Canadian Food Board were maintained at all times and care was taken that the policy of one country with regard to exports and imports of foodstuffs should not be nullified by conflicting policies in the other and that impossible economic barriers should not be set up along the boundary. Through the Division of Mexican Relations the Food Administration kept in close touch with the State Department and the War Trade Board in their dealings with Mexico and gave full information as to the amount of foodstuffs which we could supply to Mexico.

XXXIII. DEMOBILIZATION

After the signing of the Armistice the Food Administration, in common with other war emergency organizations of the government, such as the War Industries Board, the War Trade Board, and the Fuel Administration, proceeded as rapidly as possible to cancel its regulations and disband its organization. On November 12, 1918, the Food Administrator in an address to the Federal Food Administrators at a meeting in Washington outlined his policy with regard to the future of the work of the Food Administration in part as follows:

That portion of our work under the Lever Act revolves largely around the curtailment of speculation and profiteering. This act expires at the signing of the peace with Germany, and as it represents a type of legislation only justified under war conditions, I do not expect to see its renewal. It has proved of vital importance under the economic currents and psychology of war. I do not consider it as of such usefulness in the economic currents and psychology of peace. Furthermore it is my belief that the tendency of all such legislation except in war is to an over degree to strike at the roots of individual initiative. We have secured its execution during the war as to the willing cooperation of 95 per cent of the trades of the country, but under peace conditions it would degenerate into an harassing blue law.

The law has well justified itself under war conditions. The investigations of our economic division clearly demonstrate that during the first year of the Food Administration farm prices steadily increased by 15 per cent to 20 per cent on various computations, while wholesale prices decreased from 3 per cent to 10 per cent, according to the basis of calculation. Thus middlemen's costs and profits were greatly reduced. This was due to the large suppression of profiteering and speculation and to the more orderly trade practices introduced under the law.

It is my desire that we should all recognize that we have passed a great milestone in the signing of the armistice; that we must get upon the path of peace; that therefore we should begin at once to relax the regulation and control measures of the Food Administration at every point where they do not open a possibility of profiteering and speculation. This we cannot and will not permit so far as our abilities extend until the last day that we have authority under the law. When we entered upon this work eighteen months ago our trades were rampant with speculation and profiteering. This grew mainly from the utterly insensate raids of Europe on our commodities. I look now for a turn of American food trades towards conservative and safe business because in this period that confronts us, with the decreased buying power of our own people, of uncertainty as to the progress of the world's politics, with the Government in control of exports and imports, he would be a foolish man

indeed who today started a speculation in food. This is a complete reversal of the commercial atmosphere that existed when war began eighteen months ago, and therefore the major necessity for law in repression of speculative activities is to my mind rapidly passing. It is our duty, however, to exert ourselves in every direction to so handle our food during reconstruction as to protect our producers and our consumers and to assure our trades from chaos and panic.

By direction of the President, Mr. Hoover left for Europe on November 16, 1918, to direct the participation of the United States in the relief of the liberated countries. Mr. Edgar Rickard was appointed by the President Acting Food Administrator during his absence.

In his message to Congress in December 1918 the President also indicated that the policy of the government would be to remove the wartime restrictions and return trades to their normal relation to the government as rapidly as possible. This policy was further reflected by the Congress, which brought pressure to bear upon all of the war organizations to reduce their personnel and cease their activities with as little delay as possible. Naturally the trades under regulation, with the passing of the incentive of war necessities, chafed under the restraints of war regulations and sought to secure their removal.

Beginning with the cancellation of the wheat-substitute regulations on November 12, 1918, the special regulations of the Food Administration were canceled in large numbers during the months of November and December, 1918.

The conservation organization was largely dissolved in December 1918, and on December 19, 1918, the Federal Food Administrators were instructed to release their staffs, retaining only city and county administrators and such other persons as were absolutely necessary to carry on the remaining and diminishing work. By March 1, 1919, the number of paid employees in the states offices had been reduced to 25, and by June 15 there were no employees left in the states. The rate of reduction in the number of paid employees in the Washington office is shown by the following table:

Date	Number of Employees
November 15, 1918.....	1,490
December 15, 1918.....	1,337
January 15, 1919.....	558
February 15, 1919.....	388
March 15, 1919.....	185
June 15, 1919.....	118

CANCELLATION OF REGULATIONS

The cancellation of special regulations was followed in January and February, 1919, by the withdrawal of license requirements as to all of those commodities on which it was not necessary to retain license control in order to carry out a program of assurance as to price entered into by the Food Administration with the industry. On January 10, 1919, the following were released from license by Proclamation of the President:

All persons, firms, corporations or associations engaged in the business of importing, manufacturing (including milling, mixing or packing), storing, or distributing (including buying and selling)

Syrups and molasses

Dried beans, pea seed or dried peas

Poultry

Fresh or frozen fish (except salt-water fishermen licensed under Proclamation of January 10, 1918)

Fresh fruits or vegetables

Canned: peas, dried beans, tomatoes, corn, salmon, sardines or tuna

Mild cured, hard cured, salted, dried, smoked, pickled or otherwise preserved salmon

Dried: prunes, apples, peaches or raisins

Bread in any form and cake, crackers, biscuit, pastry or other bakery products

White arsenic or other insecticides containing arsenic

Tomato soup, tomato catsup and other tomato products

Alimentary paste

Green coffee

Casings, made from the intestines of animals, for sausage and for other food commodities

Feeds from any of the following commodities or any of the following commodities as feed or feed ingredients:

Buckwheat

Kaffir

Milo

Feterita

Broom corn

Cane seed

Spelt

Emmer

Millet

Sunflower seed

Grain and seed screenings

Lentils

Linseed oil cake

Linseed oil meal

Beans

Peas

Dried brewers' grains

Dried distillers' grains

Dried yeast grains

Malt sprouts

Baled hay

Baled alfalfa

Baled straw

Animal or fish products or by-products

Tankage

Products or by-products of any of the following commodities as feeds:

Shelled corn	Peas
Ear corn	Peanuts
Oats	Copra
Barley	Palm nut
Rye	Palm kernel
Buckwheat	Sugar beets
Sorghum grains	Sugar cane
Rice	Hay
Grain and seed screenings	Alfalfa
Velvet beans	Straw
Peanut meal and soya bean meal	Soya beans

All commercial mixed feeds

Condensed, evaporated or powdered milk

Buckwheat or buckwheat products

All products of wheat or rye other than wheat or rye flour or wheat mill feeds.

All persons, firms, corporations or associations engaged in the business of distributing the following commodities:

Oatmeal, rolled oats, oat flour

Corn grits, corn meal, hominy, corn flour, starch from corn, corn syrup, glucose and raw corn flakes

Wheat flour and rye flour and barley flour

Rice and rice flour

Any feeds produced from wheat

Raw milk

All persons, firms, corporations or associations engaged in the business of storing any food or feed commodities except persons, firms, corporations or associations engaged in the business of storing wheat, corn, oats, rye, barley or rice, as owners or lessees or operators of warehouses or elevators, or persons, firms, corporations or associations operating cold-storage warehouses.

On February 1, 1919, the following were released:

All persons, firms, corporations or associations heretofore required to be licensed whose licenses have not already been cancelled engaged in the business of importing, manufacturing (including milling, mixing or packing), or distributing oatmeal, rolled oats, oat flour, corn grits, corn meal, hominy, corn flour, starch from corn, corn syrup, glucose or raw corn flakes, rye flour, barley flour, milk, cheese, near-beer, or other similar cereal beverages, malt, copra, palm kernels, peanuts, oleomargarine or butter substitutes, lard substitutes except cottonseed products; all animal or vegetable fats or oils except butter, lard and cottonseed oil; also all salt-water fishermen.

On February 22, 1919, the following were released:

All persons, firms, corporations or associations engaged in the business of importation, manufacturing, or distributing butter or eggs, or engaged in the business of operating cold-storage warehouses.

As explained hereinbefore under the discussion of the commodities, the Food Administration was obligated to carry out certain voluntary agreements as to price stabilization of certain commodities which it had entered into with producers and others. These commodities were: hogs, cottonseed and cottonseed products, rice, and sugar.

The Food Administration made these agreements on behalf of the government and it therefore became the duty of the government to retain control of the commodities in question until the assurances given had been fulfilled so far as possible. The control over pork and pork products was, therefore, not released until, as explained hereinbefore, the principal instrument of control was removed by the release of the control over exports by the War Trade Board. Pork and pork products were then released by Proclamation of the President dated April 1, 1919.

Cottonseed was retained under control until practically all of the 1918 crop and its products had been moved. Control over cottonseed and cottonseed products was removed by Proclamation dated May 31, 1919.

Rice also was retained under control until the crop was marketed. It was released by Proclamation dated June 21, 1919.

The appropriation available to the Food Administration expired with the end of the fiscal year, June 30, 1919. Application was made to the Appropriation Committee of the House of Representatives in February 1919 for a small appropriation which would enable the organization to carry on such work as might be necessary after the first of July. This application was, however, refused and the activities of the Food Administration came to an end on July 1, 1919, with the exception of the work carried on by the Sugar Equalization Board and the Cereal Enforcement Division, hereinbefore mentioned. Mr. Hoover resigned as Food Administrator on July 1, 1919.

XXXIV. EXPENDITURES OF THE FOOD ADMINISTRATION

WASHINGTON BUILDINGS

Starting with temporary quarters in various buildings in August 1917, the Food Administration expanded so rapidly that it was soon necessary to erect special buildings for its occupancy. The first of these buildings was constructed within sixty days' time and was moved into in November 1917. The second building was constructed in forty days' time and was occupied in March 1918. Each of these buildings was two stories in height, and together they furnished office space and working room for more than 2,000 people. They were constructed at a total cost of approximately \$400,000.

EMPLOYEES

The number of employees in the Washington office grew from a total of about 400 in August 1917 to a total of about 1,925 in July 1918, of which number about 120 were serving without compensation. The number of employees in the states eventually reached a total of about 9,000. On December 1, 1918, the total paid employees in the Washington office was 1,338 with a total annual salary rate of \$1,705,722, or an average annual salary of \$1,274.83. The total number of volunteers in the Washington office on the latter date was 90. In the states on December 1, 1918, there were 1,583 paid employees with a total annual salary rating of \$1,564,887, or an average annual salary of \$988.56. The number of volunteers in the states as reported about December 1, 1918, was 7,984.

TOTAL EXPENDITURES

The total expenditures of the Food Administration were \$7,862,669, which included the cost of the temporary buildings—still in use by the government—and \$1,236,377 for printing and binding, which was principally for the vast amount of educational matter used in the conservation activities. The amount paid for services of permanent and temporary employees was approximately \$3,793,000. That a comparatively small amount was expended for salaries in view of the total number of employees is of course due

to the fact that the great preponderance of service was rendered without compensation.

It should also be noted here that the net earnings of the two corporations created to carry out the work of the Food Administration (the Food Administration Grain Corporation, \$24,000,000, and the Sugar Equalization Board, Inc., \$30,000,000) were many times greater than the total expenditures of the Food Administration, and that these earnings were not made from charges on the people of the United States.

APPENDIX A

ORGANIZATION OF THE UNITED STATES FOOD ADMINISTRATION

NOTE: The Food Administration did not function on the basis of a rigid organization chart. There were no water-tight divisions. Heads of various departments, as well as the personnel, were shifted from one division to another as the Administration faced constantly changing conditions and was required to solve new problems. Consequently, the following list does not attempt to be exact in regard to various titles of many individuals but as nearly as possible records the several positions held during the active period of the Administration.

EDITOR

FOOD ADMINISTRATION STAFF

HERBERT HOOVER, *United States Food Administrator*

EDGAR RICKARD, *Assistant Food Administrator and, later, Acting Food Administrator*

DR. RAY LYMAN WILBUR GERTRUDE B. LANE MARK L. REQUA	}	<i>Assistants to the Food Administrator</i>

LEWIS L. STRAUSS, *Secretary to Mr. Hoover*

LEGAL

JUDGE CURTIS H. LINDLEY JUDGE WILLIAM A. GLASGOW, JR.	}	<i>Chief Counsel</i>

HARVEY H. BUNDY SCOTT HENDRICKS WILLIAM C. MULLENDORE EDMUND W. PUGH EDWIN P. SHATTUCK ROBERT A. TAFT	}	<i>Assistant Counsel</i>

ROLAND W. BOYDEN, *Chief, Enforcement Division*

W. A. BRATTON

E. C. BROWN

WILLIAM D. EATON

S. F. EVANS

E. A. FOLEY

ALAN FOX

JAMES GARFIELD III

LAWRENCE RICHEY

O. M. WOLFF

PROFESSOR F. C. WOODWARD

WILLIAM B. OWENS, *License Division*

WILLIAM E. KELLICOTT (*Reports*)

FOOD CONSERVATION

RAY LYMAN WILBUR, *Chief*

SARAH FIELD SPLINT

MARTHA VAN RENSSELAER

HARRIET ANDERSON

ETHEL M. BAGG

ISABEL BEVIER

KATHERINE BLUNT

} *Chiefs, Home Conservation Division*

JOHN H. COVER

ABBY L. MARLATT

FLORA ROSE

FLORENCE WARDELL

BEN S. ALLEN, *Chief, Education Division*FREDERICK O'BRIEN, *Assistant Chief*

TOM ELLIS

RUSSELL M. MACLENNAN

IDA M. TARBELL

ROGER S. BALDWIN

LEONARD HATCH

CHARLES MERZ

PARMELY W. HERRICK

EVERETT W. SMITH (*Copy Desk*)EVERETT S. BROWN (*Press Digest*)F. C. WOODWARD (*Press Digest*)R. C. MAXWELL (*Outdoor Advertising*)DR. CHARLES R. VAN HISE (*Collegiate*)DEAN OLIN TEMPLIN, *Director of School and College Activities*CHARLES W. HOLMAN (*Farm Journals*)JOHN S. PARDEE (*Bulletins*)

LLOYD ALLEN

MRS. ALICE ALLEN

R. W. MADISON

EDITH GUERRIER (*Library and Exhibits*)A. S. FRIEND (*Moving Pictures*)A. U. CRAIG (*Negro Press*)HENRY B. QUINAN (*Posters*)DR. HOWARD B. GROSE (*Religious Press*)MRS. GERTRUDE MOSSHART (*Retail Stores*)

JAMES H. COLLINS

TRELL W. YOCUM

} *Trade and Technical Press*FRANCES MOORE, *Chief, Information and Library Division*PHILENA A. DICKEY, *Librarian*

SUDA L. BANE

JOHN MCE. BOWMAN, *Chief, Hotels and Restaurants Division*

P. B. BODEN

ALBERT S. CROCKETT

EDWARD R. GRABOW (*Steamship*)IRWIN S. OSBORN, *Chief, Garbage Utilization*

F. C. BAMMAN

JOHN W. HALLOWELL, *Chief, States Administration Division*

ERNEST T. ATTWELL

CECIL BARNES

KENT S. CLOW

W. A. DUPEE

FRANKLIN W. FORT

JOHN RICHARDSON

H. ALEXANDER SMITH

FREDERIC M. STONE

HERBERT N. STRAUS

GEORGE A. WARRINGTON

LIST OF UNITED STATES FEDERAL FOOD ADMINISTRATORS
BY STATES

State	Name	Date of Oath
Alabama	Richard Hobbie	August 30, 1917
Alaska	Royal A. Gunnison	December 19, 1917 (died
	Successor, Philip R.	June 15, 1918)
	Bradley	Entered duty, July 8, 1918
Arizona	Timothy Riordan	August 22, 1917
Arkansas	Hamp Williams	August 22, 1917
California	Ralph P. Merritt	August 29, 1917
Colorado	Thomas B. Stearns	September 27, 1917
Connecticut	Robert Scoville	August 24, 1917
Delaware	Edmund Mitchell	January 21, 1918
District of		
Columbia	Clarence R. Wilson	November 1, 1917
Florida	Braxton Beacham	September 19, 1917
Georgia	Dr. Andrew Soule	September 19, 1917
Hawaii	J. F. Child	January 12, 1918
Idaho	R. F. Bicknell	September 19, 1917
Illinois	Harry A. Wheeler	August 25, 1917
Indiana	Dr. Harry E. Barnard	August 23, 1917
Iowa	J. F. Deems	August 29, 1917
Kansas	H. J. Waters	August 31, 1917 (resigned
	Successor, Walter P.	December 6, 1917)
	Innes	Entered duty December 6, 1917
Kentucky	Fred M. Sackett	August 22, 1917
Louisiana	John M. Parker	August 22, 1917
Maine	Dr. Leon S. Merrill	August 22, 1917
Maryland	Edwin G. Baetjer	August 22, 1917 (resigned
		October 16, 1918)
	Wm. H. Maltbie	Entered duty October 16, 1918
Massachusetts	Henry B. Endicott	August 23, 1917
Michigan	George A. Prescott	September 19, 1917
Minnesota	A. D. Wilson	September 19, 1917
Mississippi	P. M. Harding	September 19, 1917
Missouri	F. B. Mumford	October 9, 1917
Montana	Prof. Alfred Atkinson	August 22, 1917
Nebraska	Gurdon W. Wattles	August 31, 1917

Nevada	{ Henry M. Hoyt.....August 22, 1917 (resigned) H. A. Lemmon.....March 8, 1918
New Hampshire..	Huntley N. Spaulding....August 29, 1917
New Jersey	{ James F. Fielder.....September 19, 1917 (resigned March 13, 1918) William S. Tyler.....Entered duty March 13, 1918
New Mexico	{ Ralph C. Ely.....August 22, 1917 (resigned Acting Admr., Henry G. September 20, 1918) Bush M. R. Johnston.....Entered duty September 26, 1918
New York City ...	{ John Mitchell Arthur Williams Jacob G. Schurman } September 20, 1917 Charles Wieting
New York State ..	Charles E. Treman.....December 6, 1917
North Carolina ...	Henry A. Page.....August 22, 1917
North Dakota	Edwin F. Ladd.....August 31, 1917
Ohio	Fred C. Croxton.....September 19, 1917
Oklahoma	{ Dr. Stratton Brooks.....August 25, 1917 (resigned Successor, Charles B. April 5, 1918) Ames April 5, 1918
Oregon	{ W. B. Ayer.....August 27, 1917 (resigned) Acting Admr. W. K. Newell Entered duty December 7, 1918
Pennsylvania	Howard Heinz August 25, 1917
Porto Rico	Albert E. Lee.....October 26, 1917
Rhode Island	Alfred M. Coates August 24, 1917
South Carolina ...	{ David R. Coker.....August 22, 1917 (resigned Successor, William January 7, 1918) Elliott January 7, 1918
South Dakota	C. M. Herreid.....October 25, 1917
Tennessee	H. A. Morgan.....August 24, 1917
Texas	E. A. Peden.....September 20, 1917
Utah	W. W. Armstrong.....September 17, 1917
Vermont	{ James Hartness August 22, 1917 (resigned Successor, Frank H. May 15, 1918) Brooks May 15, 1918
Virginia	{ Col. E. B. White.....August 20, 1917 (resigned Successor, Hugh B. May 8, 1918) Sproul May 8, 1918
Washington	Charles Hebbard August 22, 1917
West Virginia	Earl W. Oglebay.....August 11, 1917
Wisconsin	Magnus Swenson.....August 22, 1917
Wyoming	Theodore C. Diers.....August 22, 1917

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WHEAT, FLOUR, COARSE GRAINS

*Cereal Division and the Food Administration Grain Corporation:*JULIUS H. BARNES, *President*EDWARD M. FLESH } *First Vice-Presidents*
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E. G. BROENNIMAN }

FRANK L. CAREY }

C. B. FOX }

PERCY H. GINDER }

M. H. HOUSER }

H. D. IRWIN }

GEORGE S. JACKSON }

HOWARD B. JACKSON }

CHARLES KENNEDY } *Second Vice-Presidents*

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R. A. LEWIN }

FRED J. LINGHAM }

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JOHN J. STREAM }

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WILLIAM N. DOAK, Vice-President, Brotherhood of Railway Trainmen, Roanoke, Virginia

EUGENE E. FUNK, President, National Corn Association, Bloomington, Illinois

EDWIN F. LADD, President, North Dakota Agricultural College, Fargo, North Dakota

R. GOODWIN RHETT, President, Chamber of Commerce of the United States, Charleston, South Carolina

J. W. SHORTHILL, Secretary, National Council of Farmers' Co-operative Association, York, Nebraska

JAMES W. SULLIVAN, American Federation of Labor, Brooklyn, New York

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— 362 UNITED STATES FOOD ADMINISTRATION

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HENRY J. WATERS, President, Kansas State Agricultural College, Manhattan, Kansas

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GEORGE A. CHAPMAN

SCOTT F. EVANS

JAMES F. BELL, *Chief, Milling Division*

W. I. BEAM

FRED J. LINGHAM

FRED O. SEAVER

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FREDERIC S. SNYDER } *Chiefs, Meat Division*

B. E. REUTER, *Fats and Oils*

DR. GEORGE H. DENNY, *Cottonseed Industry*

S. J. CASSELS

HUGH HUMPHREYS

T. F. JUSTISS

SUGAR

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GEORGE A. ZABRISKIE } *Presidents*

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JAMES F. BELL, *Treasurer*

JOSHUA BERNHARDT, *Statistician*

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EDWIN P. SHATTUCK } *Directors*
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W. F. PRIEBE (*Poultry and Eggs*)

DANIEL P. BOEHM

WILLIAM E. LAMB (*Milk*)

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 WM. T. NARDIN (*Milk*)

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 JOHN AMERBACH (*Meats*)
 OMAR N. CHEER
 WALTER E. COE
 LOUIS T. JAQUES
 DANA F. WARD (*Fish*)
 CLEMENT R. WINSLOW
 DANA T. ACKERLY }
 RICHARD R. WILLIAMS, JR. } *Wholesale*
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 LESTER MCCOY
 HARRY D. TIPTON
 HARRY F. VORIES
 BIRD W. HOUSUM, *Merchandise Brokers*
 FRANK H. MILLARD, *Staples and Conservation*

CHARLES HATFIELD, *Sugar*
 FRANK A. HOEY, *Flour*
 J. R. LEGUENEC }
 DANA T. ACKERLY } *Rice, Coffee, and Specialties*
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 ALBERT N. MERRITT, *Historical and Education*
 RICHARD J. WALSH
 IRVING H. TAYLOR, *Correspondence*
 HENRY J. LAHEY, *Assistant to T. F. Whitmarsh*

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 C. E. SPENS } *Chiefs, Inland Transportation*
 PRENTISS N. GRAY, *Chief, Marine Transportation*
 J. D. FLETCHER

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DR. ALONZO E. TAYLOR, *Representative of the Food Administrator on the War Trade Board; of the Department of Agriculture in the Food Administration*
 JOHN BEAVER WHITE }
 W. KINGSLAND MACY } *Representatives of the Food Administrator on the War Trade Board*
 DR. VERNON KELLOGG, *Allied Requirements and Nutrition*
 THEODORE F. WHITMARSH, *Representative of the Food Administrator on the War Industries Board*

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JAMES T. BELL
 JOSEPH P. COTTON
 E. DANA DURAND
 EDWARD M. FLESH
 GEORGE S. JACKSON
 DR. VERNON L. KELLOGG
 HENRY MORGENTHAU, JR.
 L. P. SHELDON
 JOHN L. SIMPSON
 DR. ALONZO E. TAYLOR
 FREDERIC C. WALCOTT

STATISTICS

DR. RAYMOND PEARL, *Chief*
 DR. FRANK M. SURFACE
 J. B. SEGALL

MISCELLANEOUS

FREDERIC C. WALCOTT, *Chief, Miscellaneous Activities*
 W. A. MILNE
 MRS. MINA C. VAN WINKLE

A. E. BESTOR, *Chief, Lecturers and Speakers*

SARAH LOUISE ARNOLD

EVERETT COLBY

JOHN B. LORD

EDWARD F. TREFZ

DR. CHARLES M. MCCARTHY } *Special Assignments*

WILDER H. HAINES

JAMES W. SULLIVAN (*Labor and Consumers' Interests*)M. B. HAMMOND (*War Labor Policies Board*)WM. F. FISHER (*Canadian Relations*)DR. GEORGE MCCARTY (*Mexican Relations*)

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J. W. DuB. GOULD

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SIDNEY A. MITCHELL

MISS RACHELLE H. OSBORNE

CARL O. SPAMER

PHILLIPS WYMAN

C. C. YOUNG

MAJOR JAMES MILES, *Office Manager*MARGARET COONAN, *Assistant*CLINTON R. WHITNEY, *Chief Clerk*

MARK L. REQUA

CAPT. JOHN F. LUCEY } *Buildings*

DUNCAN McDUFFIE

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C. LEWIS } *Accounting Division*

G. W. BRYAN

V. M. HILLYER, *Appointment Division*L. A. LARSEN, *Mail Department*LEWIS BARRINGTON, *Files*B. F. DURR, *Supplies*MRS. MARION H. JONES, *Manager, Cafeteria*

APPENDIX B

LIST OF FOOD ADMINISTRATION PERSONNEL SHOWING PERIOD OF SERVICE

NAME	SERVICE	
	Entered	Terminated
Ackerly, D. T.....	June 27, 1917	November 24, 1918
Adams, Mrs. Lucile Wheeler.....	June 19, 1918	January 1, 1919
Albright, H. D.....	February 12, 1918	September 15, 1918
Allen, Alice B.	*December 1, 1917	.....
Allen, Ben S.....	From beginning	June 30, 1919
Allen, Lloyd .....	.....	.....
Allen, P. P.....	August 20, 1917	October 31, 1918
Alsberg, Julius	October 1, 1918	January —, 1919
Amerbach, John .....	.....	.....
Ames, C. B.....	April 22, 1918	June 30, 1919
†Amsden, Miss Donna H.....	August 1, 1918	June 30, 1919
Anderson, Alexandra K.	*December 1, 1917	.....
Anderson, Harriet	*December 1, 1917	.....
Anderson, Miss Sophia C.....	December 10, 1917	March 15, 1919
Andrews, Cornelia	*December 1, 1917	.....
†Armstrong, W. W.....	July 17, 1917	June 30, 1919
Arnold, Horace G.....	*December 1, 1917	.....
Arnold, Miss Sarah Louise.....	February 1, 1918	.....
Aronson, Morris	*December 1, 1917	.....
Atkinson, President Alfred	August 22, 1917	June 30, 1919
Attwell, Ernest T. ....	.....	.....
Austin, Nettie H.	*December 1, 1917	.....
Ayer, Frederick	June 10, 1917	December 15, 1917
†Ayer, W. B.	August 14, 1917	December 7, 1918
Babcock, G. C.....	October 15, 1917	February 16, 1918
Bachman, Millard E.	*December 1, 1917	.....
Baetjer, E. G.....	August 15, 1917	September 25, 1918
Bagg, Ethel M. (Lady Arthur Salter)	May —, 1917	February —, 1918
Baker, H. A.....	November 30, 1917	.....
Baldwin, Roger S.....	March 6, 1918	June 13, 1918
Ball, Miss Florence (Mrs. Donald Gray)	June 23, 1917	November 30, 1917
Bamman, F. C.....	November 10, 1917	January 15, 1919
Bane, Miss Suda L.....	September 1, 1917	January 31, 1919
Barker, C. A., Jr.....	January 8, 1918	February 15, 1919
Barnard, Dr. H. E.....	August —, 1917	June 30, 1919
Barnes, Cecil	August 20, 1917	April 30, 1919
Barnes, Julius H.....	From beginning	June 30, 1919
Barrington, Lewis	June 4, 1917	May 1, 1919
Bartel, Edward R.....	August —, 1917	.....

† Deceased.

* Date of entering service unavailable. On yearly payroll or roster as of this date.

NAME	SERVICE	
	Entered	Terminated
Bausman, R. F.....	August 29, 1917	June 30, 1919
†Beacham, Braxton	August 18, 1917	June 30, 1919
Beam, W. I.....	August —, 1917	June 30, 1919
Beatty, Wm.	August —, 1917	June 30, 1919
Beck, B. C.....	November 12, 1917	.....
Bell, James F.....	May 20, 1917	April 19, 1919
Bell, Thomas J.....	May 1, 1917	April 1, 1918
Belt, Esther R. ....	.....	.....
Bennett, Mildred V.	*December 1, 1917	.....
Bennett, Mrs. S. E.....	.....	.....
†Bentley, C. H.	June —, 1917	March 20, 1918
Benton, J. L.....	October 17, 1917	.....
Beran, Julia S.	*December 1, 1917	.....
Bernhardt, Joshua	March 12, 1918	June 30, 1919
Bernhardt, Pearl A. M.....	*December 1, 1917	.....
Berry, Lillian C.	*December 1, 1917	.....
Bestor, Arthur E.	*December 1, 1917	.....
Bevier, Miss Isabel	November 1, 1917	December 25, 1918
Bibby, Sara	*December 1, 1917	.....
Bicknell, R. F.....	September 4, 1917	June 30, 1919
Bigelow, May Thorpe .....	.....	.....
Biggins, Mrs. James J. ....	.....	.....
Birch, P. H.....	June 1, 1917	February 5, 1919
Biron, Louis H.	*December 1, 1917	.....
Black, Edgar B.....	August —, 1917	June 30, 1919
†Blake, Walter F.	July 2, 1918	January 22, 1919
Blandford, T. S., Jr.....	July 1, 1917	April 15, 1919
Blunt, Dr. Katharine.....	April 1, 1918	June 30, 1918
Boden, P. B.....	October 25, 1917	December 24, 1918
Boehm, Daniel P.....	January 10, 1918	February 10, 1919
Bostwick, Chas. L.....	August —, 1917	.....
Botsford, Samuel W. ....	.....	.....
Bouldin, Mrs. Maude .....	.....	.....
Bowen, Florence	*December 1, 1917	.....
Bowers, Cecilia .....	.....	.....
Bowers, Harry	*December 1, 1917	.....
†Bowman, J. McE.	August 16, 1917	January 15, 1919
†Boyce, D. E. ....	.....	.....
Boyden, R. W.....	November 19, 1917	June 30, 1919
Bradbury, M. E.....	September 15, 1917	January 1, 1919
Braddock, Miss Roberta.....	July 2, 1917	December —, 1918
Bradford, Edward W. ....	.....	.....
Bradley, P. R.....	February 5, 1918	February 15, 1919
Bradshaw, Carrie C.	*December 1, 1917	.....
Bramhall, Olive K.	*December 1, 1917	.....
†Brandeis, Alfred	February 3, 1918	June 30, 1919
Bratton, Miss M. R.....	January 14, 1918	March 15, 1919
Bratton, W. A.....	August 31, 1918	December 31, 1918

† Deceased.

* Date of entering service unavailable. On yearly payroll or roster as of this date.

NAME	SERVICE	
	Entered	Terminated
Bredenkamp, Ruth	*December 1, 1917	.....
Brewer, R. D.	February 16, 1918	January —, 1919
Brigham, Elbert S. ....	.....	.....
Broadbent, Jacob S.	*December 1, 1917	.....
Broenniman, E. G.	From beginning	November 30, 1918
Bromfield, Helen	*December 1, 1917	.....
Brooks, F. H.	May 15, 1918	June 30, 1919
Brooks, F. S.	August 20, 1917	May 15, 1918
Brooks, Dr. Stratton D.	July 2, 1917	April 22, 1918
Brown, E. C.	December 29, 1917	October 15, 1918
Brown, Dr. E. S.	June 25, 1917	June 30, 1919
Brown, H. M.	February 18, 1918	February —, 1919
Brown, Robert P.	*December 1, 1917	.....
Brown, Ruth	*December 1, 1917	.....
Brush, Graham	June 25, 1918	August 28, 1918
Bryan, Agnes S.	*December 1, 1917	.....
Bryan, G. W.	February 16, 1918	June 30, 1919
Buck, Harry H.	*December 1, 1917	.....
Buck, W. H.	*December 1, 1917	.....
Buckman, Eva R.	*December 1, 1917	.....
Budd, Helen L.	*December 1, 1917	.....
Bull, Nina T.	*December 1, 1917	.....
Bullitt, C. M.	February 2, 1918	June 30, 1919
Bundy, H. H.	September 11, 1917	March 6, 1919
Burch, D. S.	September 7, 1917	December 4, 1918
Burchard, Edward L.	*December 1, 1917	.....
Burden, Henry	October 17, 1917	July 8, 1918
Burger, Magdalen H.	*December 1, 1917	.....
Burgess, May A.	*December 1, 1917	.....
Bush, Henry G. ....	.....	.....
Buxton, Cameron B.	*December 1, 1917	.....
Caddell, Alfred M.	*December 1, 1917	.....
Cairns, Alexander	*December 1, 1917	.....
Cameron, Mary A.	*December 1, 1917	.....
Campbell, W. H.	September 11, 1917	January 25, 1919
Campbell, Will J.	*December 1, 1917	.....
Carby, Meta C.	*December 1, 1917	.....
†Carey, Frank L.	August —, 1917	June 30, 1919
Carlton, Miss Katharine.	September 24, 1917	February 15, 1919
Carpenter, Essex P.	*December 1, 1917	.....
Carr, Julian S.	*December 1, 1917	.....
Carver, Charles W.	*December 1, 1917	.....
Cassels, S. J.	April 16, 1918	May 31, 1919
Cellars, Martha J.	*December 1, 1917	.....
Chadbourne, Dr. A. P.	September 16, 1918	January 31, 1919
†Chambers, Edward	July 7, 1917	January 1, 1918
Champ, F. P.	June 5, 1917	March 4, 1919

† Deceased.

* Date of entering service unavailable. On yearly payroll or roster as of this date.

APPENDIX B

369

NAME	SERVICE	
	Entered	Terminated
Chapman, G. A.....	February 28, 1918	December 14, 1918
Chase, Stephen	July 2, 1917	April 6, 1919
Chase, Stuart	November 1, 1917	May 1, 1918
Chatfield, Fred H.....	.....	.....
Cheer, Omar N. ....	.....	.....
Child, Huntley	October 29, 1917	September 23, 1918
Child, J. F.....	October 15, 1917	January 31, 1919
Christopher, Max A. ....	.....	.....
Churchill, Catherine	*December 1, 1917	.....
Clark, George S.....	October 21, 1918	February 7, 1919
Clark, Julian B.....	January 10, 1918	February —, 1919
Cleal, Sidney B.	*December 1, 1917	.....
Clow, Kent S.....	July 1, 1917	August 1, 1918
Coates, A. M.....	August 18, 1917	June 30, 1919
Coe, A. F.....	November 10, 1917	September 17, 1918
Coe, Walter E. ....	.....	.....
Coffin, G. H., Jr.....	February 23, 1918	December 31, 1918
Coit, Mary A.	*December 1, 1917	.....
Coker, David R. ....	.....	.....
Colby, Everett	October 8, 1917	November 1, 1918
Cole, Louis M.....	February 14, 1918	February 1, 1919
†Collins, H. B.....	October 25, 1917	February 28, 1918
Collins, J. H.....	January 26, 1918	April 15, 1918
Conklin, Lloyd E.....	August —, 1917	June 30, 1919
Conner, McGill	*December 1, 1917	.....
Connor, Judia De S.	*December 1, 1917	.....
Cook, Helen	*December 1, 1917	.....
Cook, Mayme	*December 1, 1917	.....
†Cooke, Jay	December 10, 1917	January 31, 1919
Cooke, Laura K.	*December 1, 1917	.....
Coonan, Miss Margaret	July 2, 1917	February 28, 1919
Coonin, Yetta D.	*December 1, 1917	.....
Cooper, Ada E.	*December 1, 1917	.....
Corcoran, May U. ....	.....	.....
Cornell, Callie T.	*December 1, 1917	.....
Cosgrave, J. O'H.....	June 25, 1917	July —, 1918
†Cotton, J. P.....	October 1, 1917	December —, 1918
Cover, John H.....	June —, 1917	January 15, 1918
Covert, Dr. W. C.....	October 15, 1917	.....
Craig, Dr. A. U.....	September —, 1917	September 30, 1918
Cranston, Robert E.....	October 1, 1918	April 1, 1919
Crockett, A. S.....	August 16, 1917	June 30, 1919
Crowell, F. G.....	August —, 1917	June 30, 1919
Crowley, Edward J.	*December 1, 1917	.....
Croxton, F. C.....	September 17, 1917	June 30, 1919
Culbertson, H. C.....	September 1, 1917	April 1, 1918
Cullen, E. F.....	November 17, 1917	December 27, 1918
†Cullinan, J. S.....	From beginning	September 1, 1917

† Deceased.

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UNITED STATES FOOD ADMINISTRATION

NAME	SERVICE	
	Entered	Terminated
Cushing, John T.....	September 3, 1917	October —, 1918
Cuthill, Gertrude I.	*December 1, 1917	.....
Daniels, Miss Amy L.....	August 5, 1918	October 5, 1918
Dannaher, Edward J.	*December 1, 1917	.....
Daunoy, Harry L.....	September 1, 1917	June 30, 1919
Davenport, Dean Eugene .....	.....	.....
Davidson, William F.	*December 1, 1917	.....
Davis, Alice	*December 1, 1917	.....
Davis, Bryan	*December 1, 1917	.....
Davis, Dr. B. M.....	February 6, 1918	January 15, 1919
Dawson, Leonard	*December 1, 1917	.....
Dawson, Leslie Davis .....	.....	.....
Dawson, Marguerite	*December 1, 1917	.....
Dean, William Harper .....	.....	.....
Deems, J. F.....	September 4, 1917	June 31, 1919
Denney, C. D.....	February 4, 1918	December 15, 1918
Denny, Dr. G. H.....	April 1, 1918	September 3, 1918
Densmore, Dorothy	*December 1, 1917	.....
Deussing, Bethold	August 21, 1917	.....
Dickey, Miss Philena A.	July 16, 1917	February 3, 1919
Dickinson, Thos. H.....	November 1, 1917	June 1, 1918
Diers, T. C.....	September 2, 1917	February 19, 1919
Dilworth, D. W.....	August 16, 1917	January 1, 1918
Dodson, Dean W. R.....	August 1, 1918	November 5, 1918
Donegan, John B.	*December 1, 1917	.....
Donnelly, Connor	*December 1, 1917	.....
Doremus, Fleda A.	*December 1, 1917	.....
Dorrance, John T.	*December 1, 1917	.....
Douglas, J. R. ....	.....	.....
Driscoll, Katherine	*December 1, 1917	.....
Dubin, Adolph A.	*December 1, 1917	.....
Dudley, John	March 6, 1918	November 1, 1918
Dugan, Mary V.....	*December 1, 1917	.....
Dumbeck, Frederick C.	*December 1, 1917	.....
Dunbar, John T.	*December 1, 1917	.....
Dunlavy, James	*December 1, 1917	.....
Dunn, Mrs. Annette H.....	December 8, 1917	February 7, 1919
†Du Puy, W. H.....	February 15, 1918	January 3, 1919
Dupee, W. A.....	September 10, 1917	June 30, 1919
Durand, Dana E.....	September 1, 1917	June 30, 1919
Durr, Ben. F.....	June 21, 1917	May 1, 1919
Duryee, Mrs. G. H.....	June 27, 1917	January 1, 1919
Duvel, Dr. J. W. T.....	August —, 1918	June 30, 1919
Dwight, Maitland	August 9, 1917	November 4, 1917
Dyer, Miss F. Edna.....	June 29, 1917	October 31, 1918
†Earle, Horace C.....	June 20, 1918	January 20, 1919
†East, Dr. E. M.....	September 26, 1918	December 31, 1918
Eaton, Harry A. F.	*December 1, 1917	

† Deceased.

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NAME	SERVICE	
	Entered	Terminated
Eaton, William D.		
Eberle, Miss Louise.	August 1, 1917	November 15, 1918
Edgeworth, Miss Harriet.	January 28, 1918	June 19, 1918
Edmonds, Emma A.	*December 1, 1917	.....
Egan, James P.	*December 1, 1917	.....
Elliott, Fred J. ....	.....	.....
Elliott, William	January 7, 1918	June 30, 1919
Ellis, T. A.	July 11, 1917	March 16, 1919
†Ely, Ralph C.	August —, 1917	October 1, 1918
Embury, Martha I.	*December 1, 1917	.....
†Endicott, H. B.	August 18, 1917	June 30, 1918
Epplesheimer, Mary E.	*December 1, 1917	.....
Esberg, A. I.	August 28, 1917	January 13, 1918
Ethridge, Alfred	*December 1, 1917	.....
Eustace, H. J.	August 27, 1917	October 10, 1918
†Evans, S. F.	October 1, 1917	January 30, 1919
Fairbanks, William L.	*December 1, 1917	.....
Fayle, Jane E.	*December 1, 1917	.....
Feber, John L.	*December 1, 1917	.....
Fielder, J. F.	September 12, 1917	March 7, 1918
Figley, J. E.	February 1, 1918	December 15, 1918
Finn, Ethel E.	*December 1, 1917	.....
Fisher, Arthur	May 1, 1918	August 26, 1918
Fisher, Marguerite	*December 1, 1917	.....
Fisher, W. F.	September 16, 1917	June 30, 1919
†Fiske, H. C.	May 22, 1918	October 21, 1918
Fitzgerald, Miss Claudia.	November —, 1917	January —, 1919
Fitzharris, Richard B.	*December 1, 1917	.....
Flannery, Jennie V.	*December 1, 1917	.....
Flesh, Edward M.	August —, 1917	June 30, 1919
Fletcher, J. D.	March 11, 1918	June 12, 1919
Foley, E. A.	November 27, 1917	June 5, 1919
†Ford, J. A.	December 3, 1917	January 31, 1919
Forsythe, E. A.	August —, 1917	.....
†Fort, Franklin W.	September 14, 1917	January —, 1919
Fortune, Mrs. Mary M.	June 11, 1917	June 16, 1919
Foster, Wallace H.	June 15, 1917	May 1, 1918
Fowler, Kenneth	August 16, 1917	February 1, 1919
Fox, Alan	November —, 1917	June 30, 1919
Fox, C. B.	August —, 1917	June 30, 1919
Fox, Miss Louise.	June 18, 1917	August 3, 1917
Freeman, Otto	November 2, 1917	May 27, 1919
Frelinghuysen, P. H. B.	*December 1, 1917	.....
French, Alma	*December 1, 1917	.....
Frick, A. W.	September —, 1917	June 30, 1919
Friend, A. S.	August 15, 1917	June 30, 1919
Frothingham, Theodore, Jr.	May 27, 1917	January 20, 1919
Fry, Frances C.	*December 1, 1917	

† Deceased.

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NAME	SERVICE	
	Entered	Terminated
Fuhrer, Eugene F.	*December 1, 1917	
Fuller, W. P., Jr.		
Gage, T. H.	February 25, 1918	April 27, 1918
Galhouse, Annie H.	*December 1, 1917	.....
Gapen, C. E.	May 13, 1918	October 5, 1918
Gardner, Mrs. Alice Cushing.	December 10, 1917	.....
Gardner, John C. C.	*December 1, 1917	.....
Garfield, President H. A.	June 26, 1917	September 1, 1917
Getzdanner, Margaret	*December 1, 1917	.....
Getzendanner, Elizabeth M.	*December 1, 1917	.....
Gibbs, John, Jr.	*December 1, 1917	.....
Gibson, Julia C.	*December 1, 1917	.....
Gibson, Rodney	October 1, 1918	December 14, 1918
Gilkey, Mrs. Errol C. ....	.....	.....
Ginder, Percy H.	August —, 1917	June 30, 1919
†Glasgow, Wm. A., Jr.	January —, 1918	June 30, 1919
Glaze, Albert A.	*December 1, 1917	.....
Gleason, Hollis T.	March 12, 1918	December 31, 1918
Gleason, Mrs. Hollis T.	April 21, 1918	December 14, 1918
Glenny, Mrs. Albertine Hoyt.	February 18, 1918	November 9, 1918
Glessner, R. Emerson	*December 1, 1917	.....
Glover, Miss Katharine M.	October 15, 1918	November 9, 1918
Gorrell, F. E.	August 10, 1917	June 30, 1919
†Gould, J. W. DuB.	July 12, 1917	March 15, 1919
Grabow, E. R.	October 30, 1917	January —, 1919
Graff, L. G.	August —, 1917	.....
Graves, Gladys	*December 1, 1917	.....
†Gray, Prentiss N.	February 1, 1918	May 1, 1919
Green, James B.	*December 1, 1917	.....
Greene, William W.	*December 1, 1917	.....
Grimes, Millard F.	*December 1, 1917	.....
Grogan, J. J.	September 15, 1917	February 15, 1919
Groome, William C.	*December 1, 1917	.....
Grose, Dr. H. B.	September 5, 1917	June 1, 1918
Guerrier, Miss Edith.	August 29, 1917	December 31, 1918
Gunnison, Royal A. ....	.....	.....
Guthrie, Marguerite ....	.....	.....
Gutterson, Herbert L.	October 2, 1917	January 9, 1919
Haines, Wilder H. ....	.....	.....
Hale, Mrs. B. F. R.	February 3, 1918	February 1, 1919
Hall, F. H.	November 19, 1917	March 9, 1918
Hall, G. Roy.	August —, 1917	June 30, 1919
†Hallowell, J. W.	From beginning	June 30, 1919
Hamilton, Ethel M.	*December 1, 1917	.....
Hamlin, Inez L.	*December 1, 1917	.....
Hammond, Dr. M. B.	June 15, 1918	December 31, 1918
Harding, F. A.	May 13, 1918	November 20, 1918
Harding, P. M.	September 24, 1917	May 15, 1919

† Deceased.

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APPENDIX B

373

NAME	SERVICE	
	Entered	Terminated
Harney, William M.	*December 1, 1917	
Hartness, James	August —, 1917	May —, 1918
Haskell, George E. ....	.....	.....
Hatch, Leonard	July 16, 1917	December 9, 1918
Hatfield, Chas.	February 9, 1918	January 22, 1919
Heads, Thomas .....	.....	.....
Hearty, Edgar W. J.	August 27, 1917	December 20, 1918
Hebberd, Charles	August 14, 1917	June 30, 1919
Heffin, William T.	*December 1, 1917	.....
Heineman, David E.	December 1, 1917	February 1, 1919
†Heinz, Howard	August 1, 1917	June 30, 1919
Heizer, Miss Mabel S.	August 8, 1917	June 30, 1919
Hendricks, S. B. ....	.....	.....
Henriques, Miss Alida.	October 21, 1918	January 18, 1919
Hepburn, Chas. J. ....	.....	.....
†Herreid, Honorable C. M.	October 18, 1917	June 30, 1919
Herrick, Parmely W.	August 16, 1917	January 31, 1918
Heyl, E. O.	October 15, 1917	December 3, 1918
Hilderbrand, Edgar A.	*December 1, 1917	.....
Hill, Charles L.	*December 1, 1917	.....
Hillyer, V. M. ....	.....	.....
Hilton, Miss E. M.	June 14, 1917	August 21, 1919
Hitchcock, C. N.	August —, 1917	June 30, 1919
Hobbie, R. M.	June —, 1917	June 30, 1919
Hoey, F. A.	January 2, 1918	January 18, 1919
Hogan, Katherine T.	*December 1, 1917	.....
Hollander, Alma	*December 1, 1917	.....
Holman, C. W.	July 9, 1917	March 31, 1919
Hoover, Herbert	From beginning	To end
Horne, Frank A.	September 17, 1917	February 22, 1919
Hotchkiss, Miss Irma H.	November 25, 1918	December 31, 1918
Houser, M. H.	August —, 1917	June 30, 1919
†Housum, B. W.	October 10, 1917	January 16, 1919
Howard, C. W.	August 16, 1917	July —, 1918
Howard, Worth C.	*December 1, 1917	.....
Howe, Elbridge L.	*December 1, 1917	.....
Howell, Elizabeth R.	*December 1, 1917	.....
†Hoyt, Henry M.	August 14, 1917	February 15, 1918
Huff, Roy P.	*December 1, 1917	.....
Hughes, Walter C.	November 12, 1917	November 1, 1918
Hull, Thomas G.	*December 1, 1917	.....
†Humphreys, Hugh	October 18, 1917	November 1, 1918
Hunt, J. W.	August 19, 1918	January 22, 1919
Hutchinson, James	June 25, 1918	November 22, 1918
Hutterly, William U.	*December 1, 1917	.....
Illian, George	July 17, 1917	January 17, 1918
Illina, George J.	*December 1, 1917	
Innes, W. P.	December 7, 1917	December 11, 1918

† Deceased.

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NAME	SERVICE	
	Entered	Terminated
Irwin, H. D.....	August —, 1917	June 30, 1919
†Jackson, George S.....	August —, 1917	June 30, 1919
Jackson, Howard B.....	August —, 1917	June 30, 1919
Jackson, John P.	*December 1, 1917	.....
Jacobs, B. R.....	June 5, 1917	October 28, 1918
Jaques, L. T.....	August 27, 1918	February 1, 1919
Jenks, F. F.....	.....	.....
Jetton, Carl P.	*December 1, 1917	.....
Joffe, Marcus, L.....	August 26, 1918	January 15, 1919
Johnston, M. R.....	June 11, 1917	September 9, 1918
Jones, Abbott E.....	*December 1, 1917	.....
Jones, Bernice H.	*December 1, 1917	.....
Jones, Harry E.	*December 1, 1917	.....
Jones, Mrs. M. H.....	December 27, 1917	June 30, 1919
Justiss, T. F.....	November 12, 1917	May 31, 1919
Kaan, Frank W.....	May 1, 1918	December 3, 1918
Keech, Elizabeth	*December 1, 1917	.....
Keeling, H. M.	*December 1, 1917	.....
Kelley, Elizabeth	*December 1, 1917	.....
Kellicott, William E.	*December 1, 1917	.....
Kelliher, Katherine	*December 1, 1917	.....
Kellogg, Douglas	October 1, 1917	December 31, 1918
Kellogg, Ethel L.	*December 1, 1917	June 30, 1919
†Kellogg, Dr. Vernon L.	From beginning	June 30, 1919
Kellogg, Mrs. Vernon L.....	December 1, 1917	April 1, 1918
†Kennedy, Charles	August —, 1917	June 30, 1919
Kerr, Marguerite	*December 1, 1917	.....
Kettenbach, Otto I.....	August —, 1917	June 30, 1919
Keyes, Ruth	*December 1, 1917	.....
Kilgour, George S.	*December 1, 1917	.....
Kingsley, Darwin P.....	September —, 1917	June 30, 1919
Kinsman, Helen R.	*December 1, 1917	.....
Klein, Sam	*December 1, 1917	.....
Kleindienst, R. A.....	May 29, 1917	February 28, 1919
Klopfel, Helen F.	*December 1, 1917	.....
Koegel, Otto E.	*December 1, 1917	.....
†Krauskopf, Dr. Joseph	August 15, 1917	December —, 1918
†Ladd, Dr. E. F.....	August 25, 1917	February 1, 1919
Lahey, C. A.....	March 4, 1918	December 1, 1918
Lahey, Henry J. ....	.....	.....
Lamb, W. E.....	October 27, 1917	December 1, 1918
Lamson, J. B.....	January 26, 1918	December 15, 1918
Lamson, Mary Maud	*December 1, 1917	.....
Landauer, M. E.....	December 1, 1917	October 1, 1918
Lane, Miss Gertrude B.....	June 25, 1917	December 18, 1918
Lane, Mabel	*December 1, 1917	.....
Lane, Mortimer	*December 1, 1917	.....
Lane, Rella M.	*December 1, 1917	.....

† Deceased.

* Date of entering service unavailable. On yearly payroll or roster as of this date.

NAME	SERVICE	
	Entered	Terminated
Lang, Bert H.....	August —, 1917	June 30, 1919
Lang, Wm. C.....	June 30, 1917	March —, 1918
Langan, Margaret A.	*December 1, 1917	.....
Larsen, L. A.....	May 11, 1917	January 1, 1919
Lasater, Ada V.	*December 1, 1917	.....
Lawhon, John F.	*December 1, 1917	.....
Lawrence, George W.....	February 26, 1918	January 22, 1919
Leake, Paul E.	*December 1, 1917	.....
Lee, Albert E. ....	.....	.....
Lee, Annabelle	*December 1, 1917	.....
Lee, Walter	March 2, 1918	November 11, 1918
Leggett, H. T.....	August 24, 1917	February 24, 1919
Leguenec, J. R.....	October 1, 1917	April 1, 1919
Leight, Albert E.....	May 5, 1918	December 31, 1918
Leishear, Marion	*December 1, 1917	.....
Lemmon, H. A.....	February 16, 1918	June 30, 1919
Levy, William	*December 1, 1917	.....
Lewin, Robert A.....	August —, 1917	June 30, 1919
Lewis, C. McK.....	June 7, 1917	October 4, 1917
Lewis, E. C.	*December 1, 1917	.....
Lewis, Raymond W.	*December 1, 1917	.....
Licht, Margaret L.	*December 1, 1917	.....
†Lichty, G. E.....	October 5, 1917	February —, 1919
Lieber, Leslie	June 26, 1918	February 1, 1919
Lietz, Amos C.	*December 1, 1917	.....
Liggett, H. Theo.....	*December 1, 1917	.....
Lightfoot, J. Jerome	*December 1, 1917	.....
Lincoln, Rev. Julius.....	November —, 1917	June —, 1918
Lindauer, Samson A.....	*December 1, 1917	.....
†Lindley, Judge Curtis H.....	August 16, 1917	January —, 1918
†Lindsey, Walter E. ....	.....	.....
Lingham, Fred J.....	October 29, 1917	December 20, 1918
Linn, W. R.....	August —, 1917	.....
Loomis, H. M.....	December 15, 1917	December 1, 1918
Lord, Miss Isabel Ely.....	.....	.....
Lord, John B.....	June 7, 1917	December 31, 1918
Lower, Elton	*December 1, 1917	.....
Lucey, Captain J. F.....	From beginning	June 30, 1919
Lupton, S. J.	*December 1, 1917	.....
McCabe, Lulu	*December 1, 1917	.....
†McCarthy, Dr. Chas.....	June 11, 1917	October 15, 1918
McCarthy, Mina	*December 1, 1917	.....
†McCarty, George ....	.....	.....
McCauley, Elizabeth	*December 1, 1917	.....
McClatchey, Major D. F.....	October 1, 1917	June 1, 1919
McClelland, Belle	*December 1, 1917	.....
McClement, Morgan H.	*December 1, 1917	.....
McClennan, Catherine	*December 1, 1917	.....

† Deceased.

* Date of entering service unavailable. On yearly payroll or roster as of this date.

NAME	SERVICE	
	Entered	Terminated
McClurg, Harper J.	*December 1, 1917	.....
McConnell, Charles M.	*December 1, 1917	.....
McCord, Gladys	*December 1, 1917	.....
McCorkle, Charles D.	*December 1, 1917	.....
McCoy, Lester	January 4, 1918	February 1, 1919
McCreary, Arlowene I.	*December 1, 1917	.....
McDonald, Herbert J.	*December 1, 1917	.....
MacDougal, Mary C.	*December 1, 1917	.....
McDuffie, Duncan	June 21, 1917	December 31, 1918
McDuffie, Mrs. Duncan.	January 2, 1918	May 31, 1918
McElligott, Mae U.	*December 1, 1917	.....
McEvoy, Mary M.	*December 1, 1917	.....
McFadden, Lily C.	*December 1, 1917	.....
McFarland, Chas. P.	October 1, 1918	February 15, 1919
McGarrah, Gates W.	August —, 1917	July 1, 1919
McGhee, Elizabeth S.	*December 1, 1917	.....
McGinnis, Remsen	August 21, 1917	January 10, 1918
MacGregor, William E. ....	.....	.....
McKellar, W. A.	December 1, 1917	May 25, 1919
McKenzie, William A.	*December 1, 1917	.....
McKinley, Caroline B.	*December 1, 1917	.....
McKinney, Adele	*December 1, 1917	.....
McKinnon, R. W.	September 10, 1918	December 21, 1918
†MacLennan, R. M.	June 9, 1917	January 1, 1919
†MacLennan, Mrs. R. M. ....	.....	.....
McLocklin, Elsie B.	*December 1, 1917	.....
McLoughlin, C. H.	August —, 1917	June 30, 1919
McNear, Cyril	February 20, 1918	August —, 1918
McNey, Ruth I.	*December 1, 1917	.....
McRae, K. D.	July 6, 1917	February 5, 1919
Macy, W. K.	June 1, 1917	September 18, 1918
Madden, Marion	*December 1, 1917	.....
Malcolm, Kilda	*December 1, 1917	.....
†Maltbie, W. H.	October 1, 1917	June 30, 1919
Mann, Dean Albert R.	August 16, 1918	May —, 1919
Manning, V. H., Jr.	June 23, 1917	August 23, 1917
Marble, L. F.	October 29, 1917	April 15, 1918
Marcotte, Louis I.	*December 1, 1917	.....
Marlatt, Miss Abby L.	June 20, 1917	June 30, 1919
Martin, Cyrene V.	*December 1, 1917	.....
Matchett, Esther	*December 1, 1917	.....
Matthes, Edith L.	*December 1, 1917	.....
Maury, Lola E.	*December 1, 1917	.....
Maxwell, R. C.	September 5, 1917	December —, 1918
Mayfield, Mary	*December 1, 1917	.....
Meakin, Hardie	*December 1, 1917	.....
Meeds, Cyler O.	*December 1, 1917	.....
Melville, Andrew H.	August 10, 1917	April 1, 1919

† Deceased.

* Date of entering service unavailable. On yearly payroll or roster as of this date.

APPENDIX B

377

NAME	SERVICE	
	Entered	Terminated
Meredith, Lewis R.	*December 1, 1917	.....
Merrill, C. W.	October 8, 1917	February 6, 1919
†Merrill, Dr. Leon S.	August 22, 1917	January 31, 1919
Merritt, A. N.	October 15, 1917	February —, 1919
Merritt, Ralph P.	July 10, 1917	February 22, 1919
Meyer, Louise C.	*December 1, 1917	.....
†Miles, Major James.	July 2, 1917	December 31, 1918
Millard, F. H.	November 8, 1917	December 1, 1918
Miller, C. C.	November —, 1917	February —, 1919
Miller, E. P.	September 18, 1917	January 1, 1919
Miller, Elizabeth W.	*December 1, 1917	.....
Miller, Henry	*December 1, 1917	.....
Miller, John C.	May 13, 1918	June 30, 1918
Miller, Miss Mary Ash.	June 18, 1917	October 15, 1918
Miller, P. C.	October 15, 1917	May 1, 1918
Miller, Percy E.	*December 1, 1917	.....
Miller, Walter C.	October 3, 1918	January 15, 1919
Milliken, Emily C.	*December 1, 1917	.....
Milne, W. A.	December 7, 1917	March 1, 1919
Miner, John R.	*December 1, 1917	.....
Miotke, Tessie A.	*December 1, 1917	.....
Mitchell, Edmund	January 7, 1918	June 30, 1919
†Mitchell, John	November —, 1917	June 30, 1919
Mitchell, Roscoe R.	November 10, 1917	June 1, 1918
Mitchell, S. A.	July 7, 1917	March 8, 1919
Mochau, Marshall F.	*December 1, 1917	.....
Mollou, Thomas F.	*December 1, 1917	.....
Moore, Frances ....	.....	.....
Moore, Lawrence	*December 1, 1917	.....
†Moore, Watson S.	August —, 1917	June 30, 1919
Moore, Wm. F.	September —, 1918	June 30, 1919
Moran, Mary	*December 1, 1917	.....
Morgan, President H. A.	August —, 1917	March 31, 1919
Morganthau, Henry, Jr. ....	.....	.....
Mosshart, Mrs. Gertrude.	August 20, 1917	February 1, 1919
Mothershead, John D.	*December 1, 1917	.....
Mullendore, W. C.	June 14, 1917	June 30, 1919
Mumford, Dean F. B.	October 19, 1917	April 30, 1919
Munn, J. R.	March 20, 1918	June 30, 1919
Murphy, Pearl B.	*December 1, 1917	.....
Mygatt, Fred E.	March 8, 1918	December 20, 1918
Nairn, Wilson B.	*December 1, 1917	.....
Nardin, W. T.	May 1, 1918	.....
†Neal, Charles T.	August —, 1917	June 30, 1919
Nellinger, Maude E.	*December 1, 1917	.....
Neville, E. L.	December 2, 1917	June 30, 1919
Newell, C. S.	December 17, 1917	December 31, 1918
Newell, W. K.	January 3, 1918	December 11, 1918

† Deceased.

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NAME	SERVICE	
	Entered	Terminated
†Newing, E. F.....	September 1, 1917	June 30, 1919
Newton, Allison	April 30, 1918	October 31, 1918
Nicholls, W. H.....	May 7, 1918	March 1, 1919
Nichols, Laura S.	*December 1, 1917	.....
Nichols, W. B.....	July 17, 1918	November 18, 1918
Niswander, J. F.....	May 18, 1918	August 1, 1918
Nolen, Emma A.	*December 1, 1917	.....
Noonan, Estelle C.	*December 1, 1917	.....
Norton, Mrs. Alice P.....	July 23, 1917	December 31, 1918
Norton, Miss Margaret.....	August 20, 1917	August 12, 1918
Nutt, Furman T., Jr.....	June 20, 1918	December 15, 1918
Nutting, Ralph	*December 1, 1917	.....
Nye, Miss Claribel.....	March 1, 1918	October 1, 1918
O'Brien, F. E.....	August 24, 1918	February 15, 1919
O'Brien, William L.	*December 1, 1917	.....
†Oglebay, E. W.....	September 8, 1917	June 30, 1919
O'Leary, A. Elizabeth	*December 1, 1917	.....
Orr, Miss Flora	August 19, 1917	December 31, 1918
Osborn, Irwin S.	*December 1, 1917	.....
Osborn, William	*December 1, 1917	.....
Osborne, Miss Rachelle H. (Mrs. J. A. Paret)	June 25, 1917	June 30, 1919
O'Toole, Judith	*December 1, 1917	.....
Owens, LeRoy	*December 1, 1917	.....
Owens, W. B.....	July 12, 1917	February 15, 1919
Padgett, Lewis	June 14, 1917	August 15, 1918
Page, H. A.....	August 15, 1917	June 30, 1919
Pardee, J. S.....	September 11, 1917	December 31, 1918
Parker, John M.....	August 25, 1917	June 30, 1919
Parlin, C. C.....	September 24, 1917	October —, 1918
†Parsons, Miss Maud.....	December 15, 1917	January 15, 1918
Partello, Dwight J.	*December 1, 1917	.....
Pearl, Dr. Raymond.....	June 11, 1917	February 28, 1919
Peck, William D.	*December 1, 1917	.....
†Peden, E. A.....	September 15, 1917	October 15, 1919
Pennington, Miss M. E.....	June 15, 1917	January 15, 1919
Perkinson, Helen M.	*December 1, 1917	.....
Perry, Mrs. Montanye.....	June —, 1917	March —, 1918
Phelps, R. George	*December 1, 1917	.....
Phillips, R. G.....	November 5, 1917	February 1, 1919
†Piazzek, D. F.....	August —, 1917	June 30, 1919
Plummer, Harold P. ....	.....	.....
Poole, Gardner	February 26, 1918	February 14, 1919
Pooler, Blance F.	*December 1, 1917	.....
Poore, George A.	*December 1, 1917	.....
†Powell, G. Harold.....	July 9, 1917	January 10, 1919
Powers, William H.	*December 1, 1917	
Prescott, George A.		

† Deceased.

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NAME	SERVICE	
	Entered	Terminated
Preston, Agnes A.	*December 1, 1917	
Priebe, W. F.	September 18, 1917	January 10, 1919
Pruitt, A.	*December 1, 1917	.....
Pugh, Edmund W.	August 6, 1917	February 1, 1919
Pulliam, J. G.	*December 1, 1917	.....
†Purchase, Roy P. ....	.....	.....
Pyle, D. H. McA.	May 15, 1917	July 15, 1918
Quinan, Henry B.	June 1, 1918	January 15, 1919
Radford, Mary L.	*December 1, 1917	.....
Ramsay, Lena	*December 1, 1917	.....
Raub, Ruth D.	*December 1, 1917	.....
Raymond, C. E.	June 21, 1917	January 31, 1918
Reed, Daniel H.	November 24, 1917	March 31, 1918
Reed, Mrs. Richard C.	July 16, 1917	February 3, 1919
Reel, Mrs. A. E. Ford.	June 17, 1917	February 1, 1918
Reid, John S., Jr.	July 12, 1917	August 15, 1918
†Requa, M. L.	June 6, 1917	January 10, 1918
Reuter, B. E.	October 22, 1917	February 1, 1919
Reuting, Paul D.	*December 1, 1917	.....
Richardson, John	June 7, 1917	September 1, 1917
Richey, Lawrence	August 22, 1917	June 30, 1919
Rickard, Edgar	From beginning	June 30, 1919
Riordan, Timothy A.	August 15, 1917	June 30, 1919
Rissler, Annetta W.	*December 1, 1917	.....
Roberts, Sherwood B.	*December 1, 1917	.....
†Roberts, Thomas, Jr.	June 4, 1917	February 10, 1919
Roberts, Willa M.	*December 1, 1917	October, 1918
†Rolph, Geo. M.	July 3, 1917	February 15, 1919
Rose, Abbie	*December 1, 1917	.....
Rose, Flora ....	.....	.....
Rosenfeld, Sarah B.	*December 1, 1917	.....
Rosser, Elsie J.	*December 1, 1917	.....
Rowe, George A.	*December 1, 1917	.....
Roy, E. L. ....	.....	.....
Russell, A. L.	September —, 1917	.....
Russell, Dean H. L.	January 1, 1918	August 3, 1918
Ryan, C. B.	November 12, 1917	January 1, 1919
Ryan, James H.	*December 1, 1917	.....
†Sackett, F. M.	August 15, 1917	March 15, 1919
Sahm, Helen M.	*December 1, 1917	.....
Samuels, A. H.	July 17, 1917	September 30, 1919
Sanford, Ethel H.	*December 1, 1917	.....
Schenck, Henry	*December 1, 1917	.....
Scherger, Frances W.	*December 1, 1917	.....
Schurman, President Jacob Gould....	September 4, 1917	May 31, 1918
Scott, A. M.	September —, 1917	.....
†Scoville, Robert	August 18, 1917	June 30, 1919
Scribner, Marjorie F.	*December 1, 1917	.....

† Deceased.

* Date of entering service unavailable. On yearly payroll or roster as of this date.

NAME	SERVICE	
	Entered	Terminated
Scudder, S. J.....	August 30, 1917	.....
Seaver, F. O.....	November —, 1918	June 30, 1919
Segall, Dr. B. J.....	June 1, 1918	February 28, 1919
Shanahan, John D.....	August —, 1917	October —, 1919
Shankey, Ann G. ....	.....	.....
Shanks, Miss Margaret A.....	January 2, 1918	June 30, 1919
Shattuck, Edwin P.....	August —, 1917	June 30, 1919
Sheehan, May	*December 1, 1917	.....
Sheffer, Lula C.	*December 1, 1917	.....
Sheldon, L. P. ....	.....	.....
Shepherd, M. Adelaide	*December 1, 1917	.....
Sheridan, Herbert	September 1, 1917	March 15, 1919
Sherman, Edwin	November 1, 1917	January 18, 1919
Shimp, Byron W.	*December 1, 1917	.....
Shinn, Louise B. ....	.....	.....
Shipman, Edith M.	*December 1, 1917	.....
Simpson, John L. ....	.....	.....
Shorthill, J. W.....	September —, 1917	June 30, 1919
Smale, Isabel H.	*December 1, 1917	.....
Small, Mrs. L. A.....	November 1, 1917	June 1, 1919
Small, M. L.	*December 1, 1917	.....
Sminck, Kathryne	*December 1, 1917	.....
Smith, Bertha F.	*December 1, 1917	.....
†Smith, E. W.....	July 20, 1917	February 28, 1919
Smith, H. Alexander	October 1, 1917	April 17, 1919
Smith, H. J.....	September —, 1917	.....
Smith, Howard M.....	August 22, 1917	June 30, 1919
Smith, Leslie	January 24, 1918	February 15, 1919
Smith, Margaret G.	*December 1, 1917	.....
Snow, Sidney	*December 1, 1917	.....
Snyder, F. S.....	January 15, 1918	June 30, 1919
Somerville, T. A.....	May 4, 1918	May 15, 1919
†Soule, President A. M.....	June 15, 1917	June 1, 1919
Spamer, C. O.....	August 18, 1917	March 31, 1919
Spaulding, H. N.....	August 14, 1917	July 1, 1919
Spens, C. E.....	February 21, 1918	March 1, 1919
Splint, Miss Sarah Field.....	June 1, 1917	March 3, 1918
Sprague, Miss Elizabeth C.....	January 1, 1918	September 1, 1918
Springer, Nellie M.	*December 1, 1917	.....
Sproul, Hugh B.....	April 22, 1918	February 1, 1919
Stahlnacker, Percy S.	*December 1, 1917	.....
Staley, F. C.....	January 29, 1918	February 28, 1919
Staley, F. S.....	August —, 1917	June 30, 1919
Stammer, W. H.....	October 16, 1917	October 6, 1918
Stanley, Louise .....	.....	.....
Stansell, Jeanette M.	*December 1, 1917	.....
Starr, Walter A.....	August —, 1917	June 30, 1919
Stearns, T. B.....	August 26, 1917	June 30, 1919

† Deceased.

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NAME	SERVICE	
	Entered	Terminated
Stephens, Kathryn B.	*December 1, 1917	
Stephenson, Mary L.	*December 1, 1917	
Stevens, Julia S.	*December 1, 1917	.....
Stevenson, Robert, Jr.	July 1, 1917	June 30, 1919
Steward, John W.	*December 1, 1917	.....
Stewart, E. G.	May 16, 1918	January 31, 1919
Stewart, J. H.	August 15, 1917	.....
Stewart, Philip B.	March —, 1918	September —, 1918
Stone, F. M.	March 12, 1918	February 5, 1919
Stoullil, Edgar J.	*December 1, 1917	.....
Straus, Herbert N.	August 17, 1917	February 6, 1918
Strauss, Lewis	June —, 1917	June 30, 1919
Stream, John J.	December 3, 1917	March 31, 1919
Strong, Frances	*December 1, 1917	.....
Strother, Jane C.	*December 1, 1917	.....
†Stuart, Harry H.	February 14, 1918	December 20, 1918
†Sturges, H. A.	July 17, 1918	January —, 1919
Stutesman, James F.	*December 1, 1917	.....
Sullivan, James W. ....	.....	.....
Sullivan, Kathleen F.	*December 1, 1917	.....
Surface, Dr. F. M.	June 11, 1917	June 30, 1919
Sutter, Harry B.	January 21, 1918	January 31, 1919
Swart, H. T.	November —, 1917	June 30, 1919
Sweeney, Miss Mary A.	August 24, 1917	October 31, 1917
Sweet, Lou D.	June 30, 1917	November 1, 1918
†Swenson, Magnus	August 15, 1917	August 5, 1919
Swift, J. W.	August 1, 1917	June 30, 1919
Taft, Robert A.	August 17, 1917	June 30, 1919
Tamaro, Elizabeth	*December 1, 1917	.....
Tarbell, Miss Ida M.	August 15, 1917	.....
Taussig, Miss Catherine C.	July 8, 1918	September 18, 1918
Taussig, Dr. F. W.	February 1, 1918	June 30, 1919
Taylor, Dr. Alonzo E.	From beginning	June 30, 1919
Taylor, Fred G.	November 15, 1917	July 3, 1918
Taylor, Irving H. ....	.....	.....
Templin, Dean Olin.	January 23, 1918	February 1, 1919
Terry, Elizabeth	*December 1, 1917	.....
Thomas, Irving S.	November 1, 1918	December 31, 1918
Thomson, A. D.	November 20, 1917	December 24, 1918
Thorne, M. V. S. ....	.....	.....
Tignor, Wm. T.	*December 1, 1917	.....
Tipton, H. D.	January 1, 1918	November 27, 1918
Tomlinson, Kate	*December 1, 1917	.....
Tomlinson, Rose	*December 1, 1917	.....
Towers, Lee A.	*December 1, 1917	.....
Tracy, Frank Sedgwick.	February 9, 1918	December —, 1918
Trax, Mrs. Harland A. ....	.....	.....
Trefz, Edward F.	September 1, 1917	November 30, 1918

† Deceased.

* Date of entering service unavailable. On yearly payroll or roster as of this date.

NAME	SERVICE	
	Entered	Terminated
Treman, C. E.....	October 5, 1917	June 30, 1919
Tripp, Ralph W.	*December 1, 1917	.....
Trotter, William H.	*December 1, 1917	.....
Turrentine, Marion Lowell.....	*December 1, 1917	.....
Tyler, C. B. ....	.....	.....
Tyler, W. S.	March 7, 1918	March —, 1919
Van Hise, Dr. Chas. R. ....	.....	.....
Van Pelt, Undine	*December 1, 1917	.....
†Van Rensselaer, Miss Martha.....	December 26, 1917	January 1, 1919
†Van Scoy, A. T.	October 11, 1917	January —, 1919
Van Sicklen, F. D.	June 13, 1917	January —, 1918
†Van Winkle, Mrs. N. C.	August 15, 1917	January —, 1918
Vories, H. F.	December 20, 1917	February 1, 1919
Wagner, John L.	*December 1, 1917	.....
Walcott, F. C.	From beginning	February 1, 1919
Walker, Elinor G. ....	.....	.....
Wallschlaeger, F. O.	January 4, 1918	December 31, 1918
Walsh, Richard J. ....	.....	.....
Walters, Bestor R.	*December 1, 1917	.....
Ward, D. F.	June 6, 1918	December —, 1918
Wardwell, Miss Florence.....	August 15, 1917	January 1, 1919
Warfield, Joseph M.	September —, 1917	June 30, 1919
Warland, W. S.	October 17, 1917	January 21, 1918
Warmington, J. C.	October 29, 1917	November 27, 1918
Warren, Frank M.	November 11, 1917	.....
Warrington, G. A.	September 11, 1917	June 30, 1919
Wasney, Joseph S., Jr.	*December 1, 1917	.....
Wasser, Marie S.	*December 1, 1917	.....
†Waters, Dr. Henry J.	August 27, 1917	December 5, 1917
Watson, Elizabeth	*December 1, 1917	.....
†Wattles, G. W.	August 15, 1917	February 15, 1919
Weed, J. S.	April 2, 1918	July 1, 1918
Wehr, Walter L.	*December 1, 1917	.....
Weinstein, Kassel	*December 1, 1917	.....
†Wells, Judge F. D.	From beginning	August 15, 1917
Wheeler, Arthur J.	*December 1, 1917	.....
Wheeler, Harry A.	June 30, 1917	February 1, 1919
Wheeler, John C.	September 1, 1918	February 1, 1919
Whitcomb, Paul	June 27, 1918	December 21, 1918
White, Dorothy	*December 1, 1917	.....
White, Colonel E. B.	September 27, 1917	April 22, 1918
White, John Beaver.....	From beginning	June 30, 1919
†Whitmarsh, Theodore F.	August 16, 1917	June 30, 1919
Whitney, C. R.	July 1, 1917	February 28, 1918
Whitney, Richard	September 10, 1917	December 1, 1918
Whittington, Elmer M.	*December 1, 1917	.....
Wicker, Miss Katherine	August 6, 1917	January 15, 1919
Wichle, Agnes M.	*December 1, 1917	.....

† Deceased.

* Date of entering service unavailable. On yearly payroll or roster as of this date.

APPENDIX B

383

NAME	SERVICE	
	Entered	Terminated
Wieting, Charles .....	.....	.....
Wilbur, Dr. Ray Lyman.....	From beginning	June 30, 1919
Willard, Harley R.....	*December 1, 1917	.....
†Williams, Arthur	October 24, 1917	June 30, 1919
Williams, Honorable Hamp	August 24, 1917	February 15, 1919
Williams, Richard R., Jr.....	October 19, 1917	August —, 1918
Williamson, C. H.....	August —, 1917	June 30, 1919
Willis, Mrs. Katherine P. ....	.....	.....
Wilson, A. D.....	September 20, 1917	March 1, 1919
†Wilson, Clarence R.....	October 28, 1917	February 15, 1919
Winestine, Norman	*December 1, 1917	.....
†Winslow, C. R.....	November 7, 1917	December 14, 1918
Witkowsky, James	May 4, 1918	November 30, 1918
Wolfer, Henry	October 7, 1917	December 20, 1918
Wolff, O. M. ....	.....	.....
Woodbury, Helen T. (Mrs. Trell W. Yocum)	July 16, 1917	December 31, 1918
Woodbury, O. H.....	January 8, 1918	August 7, 1918
Woodman, E. F.....	August 15, 1917	December —, 1918
Woodward, Frederick	*December 1, 1917	.....
Woodward, Professor F. C.....	June —, 1917	January 1, 1918
Woodward, Frank L.....	October 1, 1917	March 15, 1919
Woolley, Clarence M. ....	.....	.....
Wren, Azel F.	*December 1, 1917	.....
Wrenn, J. E.....	December 17, 1917	February 1, 1919
Wright, John L.....	September —, 1917	.....
Wright, Robert M.	*December 1, 1917	.....
Wyman, Phillips	July 16, 1917	January 11, 1919
Yancey, C. E.....	April 1, 1918	January 31, 1919
Yocum, T. W.....	August 15, 1917	January 31, 1919
Young, C. C.....	August 15, 1917	May 15, 1918
Yznaga, Florence	*December 1, 1917	.....
Zabriskie, G. A.....	December 15, 1917	June 30, 1919
Zerwick, Ethel	*December 1, 1917	.....

† Deceased.

* Date of entering service unavailable. On yearly payroll as of this date.

INDEX

A

- Advertising, *see* Educational Division, advertising
- Agricultural Advisory Committee, 31-32
- Agricultural Appropriation Bill, vetoed, 138
- Agriculture, Department of, 23-24, 33, 51-52, 77, 81, 100, 138, 157, 176, 231, 236, 259, 264-65, 306, 318; duty to stimulate production, 9, 30; function in relation to food problem, 76; index on farm products and prices, 5
- Agriculture, increased production, 6, 7, 10
- Alabama, 284, 308
- Alaska, 71, 245-47, 274, 276-77, 344
- Alcohol, 108-9
- Allied buying agencies, 5, 21, 23, 30, 31, 32, 49, 323-27; *see also* Allied Provisions Export Commission; Exports; Wheat Executive; Wheat Export Company
- Allied food situation, *see* Food situation
- Allied Maritime Transport Council, 348
- Allied Provisions Export Commission, 325-27
- Allies, 3-9, 12, 14, 20-22, 24-32, 34-38, 40-41, 43, 47-50, 54, 58, 60, 62, 83, 87, 103, 106, 110, 116-21, 124, 128, 129, 132, 136-37, 142-43, 168-69, 171, 178-79, 184, 186, 256-57, 259-60, 262-63, 268-69, 274, 299
- America, v, 3-4, 6-7, 11-13, 20-21, 32, 35, 38-39, 48, 59, 62, 88, 97, 103, 116, 118, 119, 122, 124, 142, 145, 170, 172, 174, 178, 185, 190, 194, 221, 300, 301, 304, 312, 314, 323, 336, 348, 350
- American Bankers Association, 40
- American Expeditionary Force, 49, 157, 281, 344; *see also* Army (United States)
- American Friends Service Committee, 40
- American National Red Cross, *see* Red Cross
- American Refiners' Committee, 183
- American Relief Administration, 40, 269
- American Relief Administration European Children's Fund, 40
- American Steamship Association, 96
- American Sugar Refining Company, 173
- Ammonia:
 - Control ceased with Armistice, 307
 - Importance in war, 306
 - Interdepartmental committee formed, 306
 - Manufacturers, agreement for allocation by Food Administration, 306; agreement for maximum price, 306; campaign for conservation and increased production, 306-7; rules and regulations, 306-7
 - Results of war control, 307
- Anderson, Sydney, 57-58
- Appeal to women and food dealers for conservation and elimination of waste, 54
- Appreciation of service, 43
- Arbuckle Brothers, sugar refiners, 173
- Argentina, 4, 26, 31, 34, 35, 47, 107, 121, 266
- Armenian relief, 40, 42
- Armistice, v, 3, 29, 31-32, 35, 37, 184, 186, 187-88, 229, 267-68, 287, 293, 300, 303, 307-9, 311, 338-39, 350
- Army (United States), 55, 62, 116, 241, 243, 256, 263, 264, 300-301, 324, 330-31; contribution in winning the war, 41; meat specifications changed, 34; typhus campaign organized by medical corps of, 40; *see also* American Expeditionary Force
- Arsenic, conservation conferences, 309; demands for, increased by war, 310-11; export controlled by War Trade Board, 310; importance in war, 309; increased production of, 309; standard of purity established, 310; use and restrictions, 309-11; white, 309, 310
- Arsenic industry, licensed, 309; license control removed, 311; rules and regulations, 309
- Association of Dining Car Superintendents organized for conservation, 96

Atlantic seaboard, 11, 96, 111, 245-46, 290
 Attorney General, decision on purchase and sale of foods and feeds, 62; decision on voluntary agreements, 61
 Australia, 4, 26, 35, 47, 107, 121, 136
 Austria, 40, 168, 184, 300; food and relief delivered to, 42; use of merchant marine for relief, 37
 Austria-Hungary, 184

B

Bakers and baking, 69, 159-66, 199, 202; Federal Trade Commission, investigation and report on baking industry, 159-60, 164; license regulations, 160-62; margins fixed, 25; restrictions and results in saving, 105-7; substitutes, 106; War Emergency Council of Baking Industry, 159; *see also* Bread and breadstuffs; Cereals; Flour; Grain Corporation; Wheat
 Baltic States, 40; *see also* Estonia; Finland; Latvia; Lithuania
 Baltimore, 76, 149, 150
 Bank deposits, commercial, increase 1914-19, 14
 Barley shipments, 214; *see also* Feeding stuffs
 Barnes, Julius H., President of the Grain Corporation, 124, 130
 Baruch, Bernard M., 324
 Beans, 34, 300-302; dealers licensed, 214; effect of Armistice on program, 300; effect of war on production and price, 300; exports, 41; imports from Manchuria and Japan, 300; purchased by Grain Corporation, 301; used in European relief programs, 300-301; Pinto crop purchased, 301
 Beef, 253-58; exports increased, 34; exports too small to influence prices seriously, 33; prewar exports, 1917-19, 13, 48; *see also* Meat; Packers; Pork and pork products
 Beer, *see* Brewing; Liquor trade
 Belgium, v, 41-42, 51, 167, 168, 184, 236, 330, 331, 332; *see also* Commission for Relief in Belgium
 Blockade, demand to relax for sale of fats to neutrals and Germany, 32; demand to remove, 36; evaded through neutral buying, 5; neutral shipping into Allied service forced by, 20-21; tightened through embargo on exports, 20
 Boards of Trade, 34, 124
 Brazil, 168, 303-5
 Bread and breadstuffs, 5-6; carryover to 1917, 5, 24; exports 1916-18, 120; exports to Allies 1916-18, 120; importance in diet, 159; percentage obtained from bakeries, 159; prices, 25, 163-66; standard loaf, 164; *see also* Bakers and baking; Cereals; Flour; Grain Corporation; Wheat
 Brewing, 108-10
 Brewing and temperance, 109
 British East Africa, 312
 British Government, *see* United Kingdom
 British Guiana, 168
 British Ministry of Shipping, 342
 British West Indies, 168, 187
 Brookings, Robert S., 324
 Buffalo, 141
 Bulgaria, 4, 42, 47, 184
 Butter, 239-41; cold storage, 240-41; price agreement, 240; prices and maximum margins, 240-41; rules and regulations, 240

C

Calcutta, 316
 California, 62, 76, 149-50, 170, 175, 177, 232, 274-77, 298, 299, 300
 California & Hawaiian, sugar refiners, 173
 Canada, 124, 128, 136, 167, 184, 190, 243, 310, 349
 Canadian Food Control, 244
 Canadian Relations Division, 349
 Canned Goods Division, 69, 270
 Cannery and canned food, 270-81; conferences, 270; cost statements, 272-73; future contracts not prohibited, 271; importance in food supply, 270; licensed, 214, 270-71; maximum margins allowed, 272-73; preliminary arrangements for Army and Navy buying, 324; problems of industry, 271; prices, 276-79; profits increased, 1917, 270; profits regulated, 271; refunds, 341; requirements, 327-28; voluntary co-operation, 270, 273
 Canning industry, *see* Cannery and canned food

- Canning trades, *see* Cannery and canned food
- Car Service Commission, 344
- Cattle associations, co-operation to secure changes in Army specifications, 34
- Central Europe, coal production and distribution, 37; commodity exchanges arranged, 37; communications re-established, 36-37; economic control during Armistice, 36-38; situation at Armistice, 36-37
- Central and Eastern Europe, 36, 37, 38, 39, 67, 300, 304; children fed during the Armistice, 38
- Central Powers, 183
- Cereals, exports, 6, 13; other than wheat and rye, 13, 48; *see also* Bread and breadstuffs; Flour; Grain Corporation; Wheat
- Chain stores, 220
- Cheese, cold-storage regulations, 242; cost-basis rule prescribed, 241-42; manufacturers, importers, and distributors licensed, 241; types manufactured, 242
- Chemical Warfare Division, 310
- Chemistry Bureau, 243
- Chicago, 25, 30, 32, 76, 122, 128, 138, 141, 149, 150, 154, 170, 235, 238, 239, 240, 263
- Chicago Board of Trade, action on future trading, 124
- China, 4
- Churches, enlisted for conservation, 94
- Claxton, P. P., Commissioner of Education, 92
- Clothing, exports, 1914-24, 41
- Clubs, enlisted for conservation, 97
- Coal production and distribution in Europe organized, 37
- Coarse grains, 288-94; conservation through prohibition of use in brewing, 108; defined, 288; dealers licensed, 288-89; marginal limitation and middlemen's profits, 290-91; *see also* Barley; Corn; Feeding stuffs; Oats; Rye
- Coarse Grains Division, problems and powers, 288; restores dealing in futures on the exchanges, 290; weekly reports from coarse grains millers, 292
- Cocoa, exports, 1914-24, 41
- Coffee, 4, 303-5; consignments of mild coffee for sale, 304-5; control, effect on price, 305; control removed January 10, 1919, 304; dealers licensed, 200, 303; dealers margins limited, 214, 303; prices, 303-5; profiteering in shipping, 304; rules and regulations, 303; shipping rates established by Shipping Board, 304
- Coffee Exchange, 66, 303
- Cold storage, 16, 18, 25, 34, 226; demand for increased by, 251; importance in food distribution, 250; loans on stored goods, 250-51; maximum rates prescribed for different commodities, 251; opportunities for speculation, 250; regulations, 251-52; warehousemen licensed, 197-200, 251; *see also* Perishables
- Collateral commodities, 306; *see also* Ammonia; Arsenic; Fats and oils; Ice; Jute bags; Sisal and binder twine; Tin plate
- Colonial Sugars Company, 173
- Colorado, 76, 170, 176, 177, 300, 301
- Comisión Reguladora (Yucatan), 312-15
- Commerce, Department of, 52, 79, 96, 309, 324
- Commission for Relief in Belgium, 38-39, 325, 330
- Commission merchants, margins fixed, 25
- Committee on Supplies of the Council of National Defense, 323
- Commodities licensed, October 8, 1917, 195-200
- Commonwealth Fund, 40
- Congress, 51; debate on Food Control Bill, 51-56
- Conservation, 12, 54, 80-120; food dealers pledged to, 12; most typical work of Food Administration, 80; organization dissolved, 351; personal pledge campaign results, 12, 86-87; results of, 117-20; started before passage of Food Control Law, 53; statement of the problem, 81-83; *see also* Educational Division; Home card; Home Conservation Division; Window card; *and under commodities*, e.g., Sugar, Arsenic, etc.
- Consumption, decrease in, 7, 12, 81-82

Co-operation with other governments, 347-49

Co-ordination of government purchasing, 23, 323-31

Co-ordination of Purchase Division, canned foods requirements, 327-28; functions, 325-26; methods of purchase, 327; neutrals purchases, 327; purchasers and value of business approved, May-December, 1918, 330-31; value of purchases approved May-December, 1918, 328; volume of business transacted, by commodities, May-December, 1918, 328

Corn, canned, 278; failure to mature 1917, 7, 288; licensed shipments, 214; millers' marginal limitations, 292; price of, in relation to price of hogs, 31-32, 260, 264-67; price slump at Armistice, 31; prices, 265-66; prices at Chicago, 1913-18, 261; use for alcohol prohibited, 108

Corn grits, exports 1914-24, 41

Cost-basis rule, 128, 206-7, 241, 289, 296

Cottonseed and cottonseed products, 34, 282-87; control ended May 1919, 35; control of 1918 crop urged by industry, 286-87; importance in food and feed trades, 282; licensed, 283; maximum margins for oil and lard substitutes, 285-86; price agreements, 284-85; postwar control, 287; rules and regulations, 283-84; speculation in industry, 282; Texas Crushing Mills' voluntary price agreement on meal, 284

Council of National Defense, 244, 270, 323

Credit inflation, *see* Inflation

Cuba, 9, 11, 27, 28, 48, 168, 170, 174, 175, 177, 178, 179, 180, 185, 187, 189, 191, 192, 193

Czechoslovakia, 40; total food and relief delivered to, 42

D

Dairy products, 236-42; decreased for Allies, 6, 236; effect of war, 236; exported prewar, 1917-19, 13, 48, 236; licensed, 202; *see also* Butter; Cheese; Milk

Dairy Products Division, 69

Danube River, opened for traffic, 37

Danzig Free State, food and relief delivered to, 42

Dehydration, 226

Delaware, 179

Deming, E. B., 277

Denmark, 184, 188, 243; food and relief delivered to, 42

Dining cars, enlisted for conservation, 96

Distillation of liquor stopped, 108

District of Columbia, *see* Washington, D.C.

Dried fruits, agreements with producers, 299; license rules and regulations, 214, 299; maximum prices agreed for producers and packers, 299

Drought, in Texas, 284; in wheat areas, 7

Duluth, 141, 149, 150

E

East Indies, 6, 28, 167-68

Education Bureau, 92-93

Educational Division:

Advertising, cost to Food Administration, 88; estimated value, 89-90; importance in food conservation, 88; in trade journals, 89

Advertising Section, 88; advertising, medium for conservation appeal, 88-90

Conservation appeal, through plate service, illustrations, charts, etc., 85

Library Section, 99

Motion picture, 90-91

Posters in conservation appeal, 88-90

Press-Clipping Section, 86

Purpose, 84-86

Retail Stores Section, 98-99; co-operation in conservation through advertising, window displays, etc., 98

School and Collegiate Section, 91-92, 101; President Wilson's appeal to school officers, 92; publications, 92-93

Speakers Section, 91

Eggs, *see* Poultry and eggs

Elbe River, opened for traffic, 37

Embargo Acts (June 15 and October 6, 1917), 8

Enforcement Division, 18-19, 333-41; action with households, 336; activities included flour-milling and flour-jobbing, 147-48; administrative proced-

ure, 334; canners refunds to, 341; Cereal Enforcement Section, 148; created October 1917, 333; Field Supervision Section, 338, 340; litigation, 340; penalties, 18-19, 333-36; work carried out by state administrators, 333; work relating to milling and feed, 337; work with shipments of food products, 336-37
 England, 47, 167-68; *see also* United Kingdom
 Espionage Act, embargo provisions, 325
 Esthonia, food and relief delivered to, 42
 Europe, v, 3-4, 13, 21, 32-34, 36-40, 43, 47-48, 52, 67, 103, 118, 121, 168, 171, 172, 184-85, 190-91, 268-69, 279, 300, 304, 349-51; Food Administration representatives in, 21; *see also* Central Europe; Central and Eastern Europe
 European countries relieved by Congressional Fund, 37-38
 European relief in 1920, 39-40
 Executive Order, *see* Presidential Executive Order
 Exports, 13, 41, 328-30; control removed, 21-22; embargo on, 18-22; increase due to Allied buying, 5; minimum necessities to July 1918, 6; prewar, 13; resulting from conservation, 117-20; *see also* Allied buying agencies, and under commodities
 Exports and Imports Division, 69

F

Fair-price committee (to determine the price of wheat), *see* Wheat, prices
 Fair-price committees, *see* Prices, retail
 Fair-price publication, *see* Prices, retail
 Far East, 35, 300
 Farm products, estimated value, 1915-19, 318
 Farmer's price for wheat, *see* Wheat, prices
 Farmer's returns versus wholesale food prices, 16
 Fats and oils:
 Animal, 6, 30, 32
 Exports to neutrals restricted, 117
 Restrictions on use in baking, 117
 Vegetable, 4; assured price, 11; exports prewar and 1917-19, 13; survey, 117
See also Cottonseed and cottonseed

products; Dairy products; Oleomargarine; Palm oil; Pork and pork products
 Federal Reserve Board, 231
 Federal Sugar Refining Company, 173
 Federal Trade Commission, 23, 52, 78, 165, 258, 270, 274, 278; investigation and report on baking industry, 159-60, 164; investigation of costs in canned foods, 272
 Feeding stuffs, 6, 31; dealers licensed, 202, 289; effect of reduced imports on Allied meat and dairy products, 6; exports 1914-24, 41; maximum margins, 293-94; neutral imports for enemy use, 20; price effect on wheat feeds, 146; *see also* Coarse grains; Corn
 Finland, 40, 184; food and relief delivered to, 42
 Fish, 69, 243-49
 Distributors licensed, 202
 Fresh and frozen, distribution control, 246-49; distributors licensed, 244, 247; prices, 247; storage, 247-49
 Fresh-water, 242-44
 Restrictions on littoral fishing suspended, 11-12
 Supply reduced by war, 11-12
 Fisheries Bureau, 243
 Fishermen, salt-water: licensed, 245-46; rules and regulations, 245-46; restrictions by states, 245-46
 Fishing industry, effect of war on, 243-44
 Florida, 308
 Flour, exports to Allies from 1917 crop, 25; exports 1914-24, 41; imports from Canada and Australia, 136; price per barrel, 24-25; supplied on credit to Europe, 1920, 40; wheat, to be sold only with substitutes, 105; versus wheat, produced by months, 1917-19, 157; *see also* Bakers and baking; Bread and breadstuffs; Grain Corporation; Millers; Wheat
 Flying Squadron, 76
 Food, cost of principal foods per capita, wholesale and retail, average and war period, 320; exports, 1914-24, 41; use in manufacturing trades restricted, 12
 Food Administration, appointment of Herbert Hoover as Food Administra-

- tor, 56; appreciation of Mr. Hoover for co-operation and service, 42-43; appropriation expired, June 30, 1919, 354; businesses licensed under, 197-200; control continued post-Armistice on hogs, cottonseed and cottonseed products, rice, and sugar, 354; co-operation with other governments, 347-49; cost and expenditures, 9, 355-56; demobilization, 34-35, 350-53; duty at Armistice, 35; duty to Allies and United States, 3, 48-50; headquarters transferred to Europe, 36; license control, principles and problems, 63-66; licenses released and regulations cancelled, 351-53; organization, 8-9, 66-76; period of activity, 3; personnel, 8-9, 357; personnel reduced, 351; powers under the Food Control Act, 3-4, 30, 60-63; problems, 7, 57-60; program based on voluntary service and co-operation, 60; program stated, May 1917, 51; representatives in Allied countries, 348; representatives in European neutral countries and South America, 21, 349; representatives on Allied program committees, 348; results weighed against problem, 4; rules and regulations, 64; set up by Executive Order, 56; state and county organization, 70-76; state administrators listed, 359; to mobilize the spirit of self-denial and self-sacrifice to reduce waste, 52-53; voluntary service essential, 66-67; *see also* Conservation; Food Administrator; Food Control Act
- Food Administration Grain Corporation, *see* Grain Corporation
- Food Administrator, v, 3, 66, 69, 70, 78, 94, 95, 96, 121, 125, 129, 133, 150, 152, 159, 169, 179, 182, 208, 209, 210, 211, 212, 238, 243, 260, 270, 289, 298, 301, 309, 316, 323, 324, 334, 339, 342, 354; agreement with jute bag manufacturers, 316; Allied agreement on pork purchases, 263; Allied food purchases supervised and co-ordinated by, 323; announcement of plans for control of wheat, flour, and bread, 126-27; appeal to sugar-beet farmers, 175; appointment of, 56; authorized, legally, to make agreements with producers, dis-tributors, etc., 61; bean and pork orders to fulfil Allied contracts urged by, 300-301; belief in democracy and voluntary effort, 80, 225; on brewing and temperance, 109; conference with representatives groups on conservation, 82; on co-operation with the trades, 64; on expansion of packing industry, 257-58; first embargo issued at request of, 19; Food Controllers' Conference, London, 1918, to determine Allied programs, attended by, 348; Food Purchase Board organized at suggestion of, 324; food situation with press weekly reviewed by, 84; forecast of sugar situation, 185-86; on function of trade specialists, 68; on future work of Food Administration, 350; on general licensing rules, 203; "hopes of the Food Administration are threefold," 59; no power to fix the price of milk, 237; not dictator or controller, 52; organized staff, 67; on profiteering in food trades, 208; report to President on results of conservation for fiscal year, 117-19; represented on War Trade Board by two men, 78, 325; telegram to Louisiana sugar producers, 173-74; *see also* Food Administration; Hoover, Herbert
- Food and the War*, 93
- Food contribution in winning the war, 41
- Food control abroad, 52
- Food Control Act (Lever law), 8, 9, 25, 30-31, 53-57, 350-51; debate in Congress, 55; effect of delay in passage of, 126; legislation, 52-56, 350-51; no price-fixing power, 61; powers and limitations, 3-4, 60-66
- Food Controllers, London conference, July-August, 1918, 348
- Food dealers, conferences on voluntary action, 54-55; pledged to conservation, 12
- Food distribution, controlled, 18; firms 99 per cent honest, 19; problems, 3, 18
- Food exchanges controlled, 66
- Food Guide for War Service at Home*, 93
- Food News Notes*, 99

Food Purchase Board, 23, 324, 327, 328;
composition and purpose, 325-26
Food remittances for Europe organized,
40
Food Saving and Sharing, 93
Food situation, 4-7, 12, 14, 20, 47; at
Armistice, 35; effect of Allied and
neutral buying on, 5, 49; effect of
submarine campaign on, 47
Food Survey Act (August 10, 1917), 8
Food trades, action before passage of
food law, 54-55; uncertain position of,
before passage of food law, 54-55
Formosa, 187, 190
France, 47, 91, 110, 111, 160, 167, 168,
181, 183, 184, 190, 191, 234, 330, 331,
347, 348; relief operations, 38-39, 42
Fraternal organizations, enlisted for con-
servation, 94-95
Freight rates, increased, 151
Fruits and vegetables, 228; dealers li-
censed, 202, 214; exported prewar and
1917-19, 13, 48; rules and regulations,
228-29
Fuel Administration, 350
Future trading limited, 17, 18, 214

G

Garbage utilization, 101-3; hog feed,
102; reduction plants, 102; results,
102-3
Georgia, 284, 308
Germany, 6, 7, 47, 111, 119, 167, 168, 184,
350; blockade removal urged, 32;
cause of collapse, 35-36; children fed
by American Friends Service Com-
mittee, 40; food and relief delivered
to, 42; food control, 52; imports from
neutrals, 20; use of merchant marine
for relief, 37
Glasgow, William A., Jr., director,
Sugar Equalization Board, 179
Glycerine, 306
Grain, *see* Barley shipments; Bread and
breadstuffs; Cereals; Corn; Grain ex-
ports; Oats; Rice; Rye; Wheat
Grain Corporation, 9, 19, 23, 25, 26, 27,
40, 105, 107, 130, 131, 133-40, 142-43,
145, 148-54, 178, 288, 301, 316, 329,
331-32; agreement with country ele-
vators, 135, 151-52; creation of, 9, 25,
130; flour supplied on credit to Eu-
rope, 1920, 40; grain dust explosion

and fire prevention campaign, 27;
Grain Threshing Division, 107; in-
surance not carried, 27; operating
expenses, to June 30, 1919, 27; organi-
zation, 130-32; profits, 26, 27, 356;
purchases and sales, 332; threshing
machine efficiency campaign, 27, 81;
traffic division, 139-44; value and
commodities purchased and sold to
June 30, 1919, 332; wheat and flour
exported to Allies, 1917, 25; wheat
turnover, 1918, 26
Grain dealers, licensed, 195-98
Grain Division, 69
Grain Exchanges, Council of, suggests
control plan, 124-25; futures dealing
restored for coarse grains, 290
Grain exports, 1914-24, 41
Grain Standards Act, 138, 149
Grain trade resolution of appreciation
of service, 132
Great Britain, *see* United Kingdom
Great Lakes, 96, 136, 141
Greece, 184; food and relief delivered
to, 42
Guerrier, Edith, *We Pledged Allegiance*,
99

H

Haiti, 168
Hawaii, 71, 170, 175, 178, 185, 245
Henderson, William, sugar refiner, 173
"High cost of living," 48
Hoarding, 18, 212-13, 228, 333, 336
Hogs, control abolished, 269; decreased
production, 5, 260; exports, 33; in-
creased production, 6, 30, 264-66; in-
spected slaughter, 1911-18, 265; mar-
keting, 1917-18, 264-67; minimum
price maintained, 256; number reduced
through Allied buying, 5, 33; price per
100 pounds, 32; price ratio to corn,
30-32, 260, 264-67; prices at Chicago,
30, 32, 261; prices stabilized, 10, 30,
31-32, 261-69; production, 33; slaugh-
tered, 1916-19, 10; *see also* Pork and
pork products
Holland, *see* Netherlands
Home card, 86-87
Home Conservation Division, 12, 100-
101; experimental kitchen, 101; pur-
pose, organization, and work, 100-101

Hoover, Herbert: appointed as United States Food Administrator, 56; chairman of the Commission for Relief in Belgium, 51; chairman of Sugar Equalization Board, 179; on food control, 50, 350-51; on four great branches of the Food Administration, 58; millers committee appointed by, 125; not on committee to determine wheat price, 129; on procedure in food administration, 64-65; proposed that government should buy wheat, 126; on purposes and principles of food control, 59-60; report to President on conservation results, 1917-18, 117-19; resignation as Food Administrator, 354; sent to Europe to direct relief measures, 351; on state organization, 70; statement to canners, 270; suggested formation of Sugar Equalization Board, 178; on voluntary service, 52, 66-67

Hotels and restaurants, enlisted for conservation, 12, 95-97; first to observe wheatless and meatless days, 96; results in wheat, meat, and sugar saved, 97

Hungary, food and relief delivered to, 42

I

Ice, effect of ammonia shortage on, 307-8; plants closed in winter to conserve ammonia, 307; problem handled locally, 308; problem in Southern states adjusted by conference, 308; results of control, 308-9; harvesting and storage of natural, 307

Idaho, 177

Illinois Food Administrator, price publication plan originated by, 223

Imperial Sugar Refining Company, 173

Imports, effect of shipping shortage on, 22; prices of food commodities, 22

India, 47, 121, 187, 190, 316

Inflation, 4, 13, 14, 19

Inland Traffic Division, 342-45; cattle and wheat moved, 345; conservation of foodstuffs in transit, 343; conservation of transportation by minimum carloads, 343; food containers, canning machinery and supplies, refrigerating machinery, etc., handled by, 343; food containers moved, 344; food

and feed shortages relieved, 343; food substitutes moved, 344; function, 23, 342; salt shortage in south relieved by, 344; seasonal investigations of crops, etc., for future freight made by, 342; storage-in-transit privileges, 344; study of class of food containers for governing licensees' shipments made by, 343; transportation of foodstuffs for Allies handled by, 342-43; *see also* Car Service Commission; Marine transportation

Insurance, none carried on Grain Corporation stocks, 27

Inter-Allied Scientific Food Commission, 349

Interior, Department of the, 306

Italy, 167, 168, 181, 183, 184, 190-91, 330, 331, 347, 348; food and relief delivered to, 1914-24, 42

J

Japan, 187, 190, 300

Java, 168, 184-86, 188, 190

Jewish Joint Distribution Committee, 40

Jobbers, licensed, 206-14; margins fixed, 25, 211-14

Jugoslavia, 4, 40, 184, 236; total food and relief delivered to, 42

Justice, Department of, 79

Jute bags, agreement with manufacturers on price and supply, 316

K

Kansas City, 76, 149, 150, 154

Knights of Columbus, 110, 330-31

L

Labor, Department of, 79, 318-19; average of wholesale commodities in 1917 86 per cent above prewar normal, 25; price indices on farmers' returns, 16

Latvia, food and relief delivered to, 42

Legislation, *see* Congress; Food Administration, powers, problems; Food Control Act; President; Attorney General

Lessons in Community and National Life, 92

Lever, Hon. Asbury F., 53; *see also* Food Control Act

Lever Act (August 10, 1917), *see* Food Control Act

Libraries, *see* Educational Division
 Licenses, commodities and businesses included, 195-200; general proclamation of October 8, 1917, 195; General Rule 17 amended, 218, 222; number issued, 200-201; rules and regulations, 201-5, 206-15
 Licensing, the basis of commodity control, 63
 Liquor trade, 108-10
 Lithuania, food and relief delivered to, 42
 Livestock exchanges' voluntary agreement, 30, 31; *see also* Hogs
 Live Stock Sub-Committee of the Agricultural Advisory Board, 267
 Louisiana, 114, 170, 173, 174, 175, 177, 178, 182, 187, 190, 284, 308
 Lovett, Robert S., 324

M

McCahan, W. J., sugar refiner, 173
 McGowan, Rear Admiral Samuel, chairman of Food Purchase Board, 325
 Mail-order houses, 220
 Maine, 274, 275, 277
 Manchuria, 300
 Margin limitation, *see* Middlemen; Licenses
 Marine Transportation Division, function and work, 22, 346
 Mauritius, 168, 184
 Meat, 6, 29-34; conservation measures, 115-17; "meatless days," 115-16; "meatless Tuesdays," 115; restrictions on mutton and lamb modified, 115; substitution of pork for beef, 116-17; *see also* Beef; Fats and oils; Hogs; Packers; Pork and pork products
 Meat packers, *see* Beef; Hogs; Packers; Pork and pork products
 Medical supplies, exports, 1919-24, 41
 Mexican Relations Division, 349
 Mexico, 312, 349
 Michigan, 170, 177, 300
 Middlemen, displaced by Grain Corporation in wheat distribution, 131; costs and profits of, reduced, 350; of non-perishable commodities, 206; profits of, 14, 16, 17, 25-27, 32-36, 126
 Milk:
 Canned, exports increased, prewar to 1919, 279, 281; manufacturers and

 distributors licensed, 279; rules and regulations, 279, 281
 Commissions, appointment of, to study problems, 238-39; Chicago agreement, 239; New England district, 239
 Cost, of distribution, 238; of production, 238
 Exports, 1914-24, 41; 1911-19, 280
 Importance as food, 236
 Pearson formula for determining price, 239
 Problems of industry, 237
 Millers:
 Agreements, regulating the industry, 133-35
 Control of transportation, buying, and price urged by, 125
 Of corn, marginal limitations, 292
 Licensing regulations, 132
 Necessity of a national Food Administration urged by, 125
 Profits of, 19, 26, 145-58; control plan for 1918-19 season, 152; differentials, 146, 152; effect on price of flour, 145; evasion of regulations, 147; evasion of regulation, penalties, 148; excess profits and income taxes, 147; limitation by license regulations, 152; regulations, 105; regulations on wheat mill feed, 146
 Restricted sales, 105
 Milling industry, *see* Millers
 Minerals Control Act, 310
 Minneapolis, 149, 150, 152, 154-55
 Mississippi, 308
 Mississippi Valley markets, 32
 Molasses and syrups, licensed and controlled, 202, 215
 Moving pictures, *see* Educational Division
 Munn, John R., 275, 277

N

National Bakers Service Board, 163
 National Education Association, lessons on food conservation requested by, 93
 National Poultry, Butter and Egg Association, 232
 National Research Council, 309
 National Sugar Refining Company, 173
 Navy (United States), 18, 55, 62, 241, 256, 263-64, 300-301, 324, 330-31;

- deep-sea fishing trawlers and crews commandeered by, 11, 243; contribution in winning the war, 41
 Navy Department, 244, 306
 Near beer, *see* Brewing; Liquor trade
 Near East Relief, 40
 Nebraska, 176, 177
 Netherlands, 42, 167, 168, 184, 188; food and relief delivered to, 42
 Neutrals, 5, 9, 20, 40; profits from neutral trade, 27; rationed, 21; to purchase through Division of Co-ordination of Purchase, 327
 New England, 232, 238, 239, 339, 344
 New Hampshire, 100
 New Mexico, pinto bean production encouraged in, 301
 New Orleans, 149, 150, 296, 313
 New York, 76, 96, 97, 130, 141, 142, 149, 150, 168, 181, 191, 235, 238, 239, 240, 288, 300, 303, 313, 339
 New York Coffee and Sugar Exchange, 303
 New Zealand hemp, 312
 Newport News, 149, 150
 North America, 4, 48, 122, 136, 185, 186
 North Carolina, cottonseed price, 284
 North Dakota, 139
 Norway, 184, 188, 243
 Nutritional importance of various foods, 15
- O**
- Oats, licensed shipments, 214; *see also* Feeding stuffs
 Ohio, 177, 238
 Oleomargarine, price controlled, 215
 Oregon, 140, 141, 274, 276, 277
- P**
- Pacific coast wheat, 140
 Pacific Northwest wheat, 140-41
 Packers, agreement on hog purchases, 30, 267; business divided into three classes, 254-55, 258; Food Administration statement, 253-54; licensed, 254; problems of industry, 253-54; profits, 30-31; profits regulated and limited, 255-57; versus war food strategy, 256-58
 Packing industry, by-products, 254-55; report, 33
 Palm oil, import arranged, 316-17
 Pan-American countries, Cuban sugar sales to, 172
 Paris Conference, 1917, 347
 Patriotic societies, enlisted for conservation, 95
 Pearson formula, 239
 Peas, canned, maximum margins announced, 278; dealers licensed, 214; exports, 1914-24, 41
 Pennsylvania, no enforcement inspection service needed, 339
 Pennsylvania Sugar Company, 173
 Perishables, defined and listed, 226; fluctuation of price, supply, quality, 226; importance as substitutes, 226; marketing, 227; movement and spoilage, 226-27; objects of control, 288; price for eggs, butter, cheese, and poultry determined by cold storage, 227-28; price for eggs and butter voluntary agreement reached, 228; *see also* Butter; Cheese; Dairy products; Fruit and vegetables; Milk; Potatoes; Poultry and eggs
 Perishables Division, 69
 Peru, 168
 Philadelphia, 76, 149, 150, 181
 Philippines, 174, 184, 185, 187, 312
 Poland, 236; food and relief delivered to, 42; typhus campaign organized, 40
 Pork and pork products, Allies' agreement to purchase, 263; Allies' refusal to continue purchases, 32, 36, 268; consumption, United States, 33; control abolished, 35, 269; exports, 1914-24, 41; exports, prewar and 1917-19, 13, 48, 259; increased production, 30; storage provided, 31
 Pork market, effect of Armistice on, 268
 Portland, Oregon, 141, 149, 150
 Porto Rico, 71, 170, 174, 175, 185, 187, 188, 191, 245
 Porto Rican case, 340
 Portugal, 184, 243
 Posters, 88-90
 Potatoes, acreage increased, 1917, 229; consumption urged, 232; crop injury, 230; grading and packing standards of Department of Agriculture, 231; growers and shippers associations, 230; loans upon warehouse receipts discounted by Federal Reserve Banks,

- 231; municipal storage houses, 231; potato-storage houses, 231; pound measurement instituted, 230; transportation, 230
- Poultry and eggs, 232; cold-storage stocks, 233-34; conditions affecting supply, 233; conference with trades, 232-33; dealers licensed, 202; regulations and General Rule 6, 204, 234-36; storage stocks, 233-36
- President of the United States, v, 36, 51, 54, 56, 61, 63, 69, 77, 92, 104, 117, 129, 153, 193, 351; beginning of Food Administration authorized by, 53-54; commission to determine the price of wheat appointed by, 25, 127-29; Federal Food Administrators appointed by, 70-71; guaranteed price for the 1918 wheat crop announced by, 149; Sugar Equalization Board set up by, 178-79
- Presidential Executive Order, appointing Herbert Hoover as Food Administrator, 56; creating the Food Administration Grain Corporation, 130; defining a "just, reasonable and fair profit," 209; establishing the Food Administration, 56; transferring Sections 15-16 of Food Control Act to Treasury Department, 108
- Presidential Proclamation, announcing general licenses, 195; establishing the price for the 1918 wheat crop, 138; licensing arsenic industry, 309; licensing bakers, 160-61, 197; licensing feeding stuffs and canners, 197; licensing green coffee importers and distributors, 197, 303; licensing manufacturers of near beer, etc., 197; licensing mills, 132; licensing packers, 254; licensing packers of canned fish, etc., 197; licensing salt-water fishermen, 245; limiting foodstuffs to brewers and reducing alcoholic content of beer to 2¾ per cent, 109; prohibiting the use of food or feed, except malt already manufactured, for malt liquors, 110; releasing arsenic licenses, 311; releasing control of pork products, 354; releasing cottonseed licenses, 354; releasing licensees, 352-53; releasing licensees of poultry and eggs, 236; releasing rice millers from license, 354
- Press, conservation material supplied by Educational Director to, 84-85; full co-operation given in conservation, 83; educational appeals for conservation, 82; food situation reviewed weekly by Food Administrator, 84; used for daily communication of information, 82
- Price fixing, 10, 11, 13, 14, 25-26, 61-62; *see also under commodities*, e.g., Sugar, Wheat, etc.
- Price Interpreting Board, 223-25
- Prices, control of, a stimulant to production, 259; fair price, 19, 222-25, 235; fair-price list origin in Illinois, 223; farm increased while wholesale decreased, 350; fluctuation of, 13, 321; index numbers of 24 food commodities, 320; interdependence of food, 15; Price Interpreting Board, 223-25; retail, 222-25, 235, 320, 322; stabilization of, 10, 13-17, 25-26, 318-21; of staple foods, 1917-18, 322; wholesale, 1917-18, of farm products, food, clothing, 319; *see also under commodities*, e.g., Sugar, Wheat, etc.
- Proclamation, *see* Presidential Proclamation
- Production increase, 14
- Profiteering, 5, 7, 9, 18, 19, 21, 216, 304, 316, 318, 350
- Profits, 5, 9, 19; "reasonable" and unreasonable, 209; *see also* Middlemen; Prices
- Prohibition, 108-9, 187, 190; *see also* Brewing
- Public information, *see* Educational Division
- Publicity Section of Distribution Division, statement on retailers' pledge campaign, 221
- Puget Sound, 141, 277

R

- Railroad Administration, 78
- Railway co-operation, *see* Inland Traffic Division
- Railway Transport Division, 23
- Railways in Europe rehabilitated, 37
- Rangoon, 300

- Rationing, of neutrals, 21; effect of, on Germany, 20; unnecessary in United States, 12; *see also* Conservation; Waste
- Reclamation Service, 231
- Red Cross, 18, 40, 48, 110, 118, 263-64, 325, 330, 335
- Religious organizations, enlisted for conservation, 94-95
- Resales within the trade, *see* Wholesalers
- Retail stores, *see* Educational Division
- Retail Stores Section, *see* Educational Division
- Retailers (unlicensed), 216-25; chiefly exempted from license, 216; controlled through General Rule 17, 204, 217; controlled through publicity and source of supply, 217; pledge campaign, 220-22; resolutions on co-operation, 218-20; weakness of Food Control Act in dealing with, 216
- Reunion, 184
- Revere Sugar Refining Company, 173
- Rhondda, Lord, appeal for wheat, 103
- Rice, exported, 1914-24, 41; Grading and Classifying Committees, 298; imported, contracts control, 215; production, 1916-20, 11; production and consumption, prewar and 1913-17, 295
- Rice dealers, licensed 1917, 296; rules and regulations, 1917, 296
- Rice millers, agreement on prices, 1918, 297-98; agreement on prices, 1918, canceled, 298; maximum milling margin, 1918, 298
- Rice Millers Association, 296
- Rickard, Edgar, Acting Food Administrator, 351
- Rolph, George M., president, Sugar Equalization Board, 179
- Royal Commission on the Sugar Supply, 171-72, 183, 190
- Rumania, 47, 184; exports to, 42
- Russia, 4, 38, 42, 47, 128, 184, 330, 331; food and relief delivered to, 42
- Rye, price affected by wheat guaranty, 10; production, 1916-19, 10; *see also* Coarse grains; Wheat and rye
- S**
- St. Louis, 149, 150, 154
- St. Louis case, 340
- Salvation Army, 330
- San Domingo, 168
- San Francisco, 76, 149, 150, 238
- Salmon (canned), committee's recommendations on maximum prices adopted, 274; prices, 276-77; profits, 1917, 273-74
- São Paulo, 303
- Sardines:
- California-canned, maximum prices agreed, 275, 277-78
 - Maine-canned, agreement with packers on maximum price, 1917, 274-75, 277; maximum prices agreed, 1918, 275, 277
- Savannah Sugar Refining Company, 173
- Scotland, 244
- Seattle, 149, 150
- Serbia, *see* Yugoslavia
- Sheppard, Senator Morris, 109
- Shipping, cost, 9; neutral, forced into Allied service, 20-21
- Shipping Board, 78, 141, 192, 304, 345; control committee to allocate tonnage to lift import programs, 346
- Shipping Division, *see* Marine Transportation Division
- Shipping shortage, 6, 22
- Sisal and binder twine, agreement with Comisión Reguladora on price and supply, 1917, 312-13; amount purchased, 313-14; contract between Food Administration and Comisión Reguladora, 314; manufacturers agree to purchase through Food Administration, 313; prices, 312-15; source and production, 312; terms and results of agreement between manufacturers and Sisal Committee, 314-16; use in harvest, 311-12
- Smith, Leslie C., 308
- Soap, exports, 1914-24, 41
- South Africa, 266
- South America, 347, 349; Food Administration representatives in, 21
- South Carolina, cottonseed price, 284
- Spain, 172, 184
- Speakers Section, 91
- Speculation, 3, 5, 7, 8, 13, 14, 16, 17, 18, 19, 21-26, 48, 49, 50, 59, 60, 64-65, 124, 127, 129, 174, 228, 250, 261, 284, 288, 303, 304, 316, 350-51

- Standards Bureau, 309
 State, Department of, 349
 States Administration Division, 69, 73-76
 Statistical Division, 69; compilations on prices, 224
 Steamship Division, organized for conservation, 96
 Storage, *see* Cold storage; Perishables
 Straus, Oscar, appointed to investigate cost of refining sugar, 179
 Strikes, marine, 188, 191-92
 Sugar, agreements, 171-73, 182; Allied supply, 6, 28, 167-69; American Refiners' Committee, 183; assured price for Cuban and domestic sugars, 11, 28; certificates, 72, 111, 112-14; conservation measures and results, 29, 110-15; consumption, 1914-19, 114-15; consumption during control period, 29; consumption increase, 110, 187-88; control absorbed by Equalization Board, 35; control policy, 28, 29; control problem, 169-75; crop (beet), United States, 170; crop decrease, 187, 190; Cuban, 9, 11, 13, 27, 28, 29, 48, 111, 168, 170, 174-75, 177-80, 185, 187, 189, 192-93; exports, 1914-24, 41; exports embargo, 1917, 169; exports, prewar and 1917-19, 6, 13, 48; increased allotment per capita, 114; International Committee, 171-73; Javan exports, 1918-19, 186-88; Louisiana agreement, 1917, 173-75, 182; Louisiana crop, 170; manufacturers and refiners licensed, 202, 214; prices, 28, 29, 168, 169, 173-81; problems of distribution and conservation impossible in 1917, 28; production, 1915-19, 11; rations, 28, 168; refined for Allied export, 183-84; refiners proportion of distribution, 172-73; restrictions on manufacturers to 80 per cent of previous use, 111; restrictions on sales, 110-14; restrictions removed, 114; shortage, 1919, 188-93; Sugar Equalization Board measures to cope with shortage, 191-93; supply at Armistice, 184-86; supply increased, 169; supply, 1919, 185-86; United Kingdom prewar supply, 167-68; West Indian, 6, 11
 Sugar Distributing Committee, 182
 Sugar Division, 69, 171
 Sugar Equalization Board, 9, 23, 35, 174-75, 178-84, 186, 188-93, 354; agreement with producers and refiners, 181-83; organized, 9, 28, 178-79; prices for raw sugar, 179-82; prices for refined sugar, 180-83; prices, Louisiana, 182; profits, 29; purchase Cuban crop of 1918, 28; refiners' margins, 180; restrictions relaxed, 186; results of, 193; sales, 29
 Supply and demand, law of, 65-66
 Supreme Economic Council, 37
 Supreme War Council, 36
 Sweden, 184, 188, 243
 Swine-producers' associations, 31
 Swine-producers' report, 262, 264
 Switzerland, 184
- T**
- Tariff Commission, 78, 176-77
 Taussig, F. W., director, Sugar Equalization Board, 179
 Telegraph and telephone communication in Europe organized, 37
Ten Lessons in Food Conservation, 93
 Terminal markets, 131
 Texas, 284
 Thirty Years' War, 38
 Tin plate, Canning Division encouraged production and importation of, 316; production increased by conservation, 317
 Tomatoes, canned, maximum margins announced, 279
 Trading with the Enemy Act, 325
 Traffic Executive, 325
 Transportation, 22, 342-43, 346
 Traveling salesmen (of wholesalers), 221-22
 Treasury Department, 108
 Tuna, canned, maximum price established, 275-76
 Turkey, 4; food and relief delivered to, 42
- U**
- United Kingdom, 40, 42, 110, 160, 167-68, 181, 183-84, 191, 243, 246, 330-31, 347; food and relief delivered to, 42; sugar, prewar supply, 167-68
 United States, 5, 6, 9, 11, 20, 28-29, 36, 41, 47-49, 51-53, 56, 60, 65, 80-81, 83,

87, 91, 95, 99, 102-4, 110, 117, 119, 121, 122, 124, 127-28, 130, 131, 143, 149, 159, 167-73, 177-79, 181-85, 187, 189-95, 200, 216, 219, 220, 225, 236, 242, 245, 255, 257-58, 260, 262-63, 268, 274, 279, 282, 289, 295, 300, 301, 303-4, 309-10, 312-14, 320, 324, 342, 346, 348, 351, 356; food and relief delivered, 1914-24, 41
 United States Grain Corporation, *see* Grain Corporation
 United States Railroad Administration, *see* Railroad Administration
 United States Shipping Board, *see* Shipping Board
 United States Sugar Equalization Board, *see* Sugar Equalization Board
 Utah, 177

V

Vegetables, *see* Corn; Fruits and vegetables; Potatoes; Tomatoes
 Vistula River opened for traffic, 37
 Voluntary service, 8, 10, 12, 16, 66-67

W

War Department, 244, 306, 307, 310-11
 War Industries Board, 78, 108, 306, 317, 350
 War organizations, urged to demobilize, 351
 War Service Council of Cannerymen, 270
 War Trade Board, 20-21, 35, 60, 78, 96, 117, 191, 268-69, 287, 304, 310-11, 325-26, 349-50, 354
 Warehousemen, cold storage, licensed, 202; of nonperishables, licensed, 199
 Warner Sugar Refining Company, 173
 Warren, Frank M., 277
 Warren, George F., 239
 Washington, D.C., v, 32, 54, 56, 71, 73, 74, 85-86, 91, 96, 99, 100, 101, 124, 132, 163, 174, 223, 244, 270, 275, 288, 308, 313, 324, 333-35, 339, 349-51, 355
 Washington (state), 140, 141, 274, 276, 277
 Waste, 7, 12, 54, 59, 60, 65, 80, 81
 West Indies sugar, 6, 11
 Western Hemisphere, 6, 168, 184
 Western Sugar Refining Company, 173
 Wheat, basic varieties, 150; Canadian surplus, 136; conservation measures, 103-10; control transferred to Wheat

Director, 35; crops, 7, 24, 26, 121, 157; discount varieties, 151; distribution to mills, 135; effect of "fair price," 137; effect of wheat price on rye, 10; exports, 13, 20, 24, 25, 26, 123; fair price fixed, 10, 25, 26, 128-29, 149-50; farm marketing, 1917-19, 136-37, 140; farmer and consumer prices, 25, 321; farmer versus wholesale prices, 154-56; farmer's prices, 5, 10, 13, 16, 25, 26, 321; formal government price guaranty, 151; grading and inspection, 138; harvest subnormal in 1917, 7; importance as food, 121; imported from Australia, 136; measures to maintain price guaranty, 153-54; movement by "permit system," 144; premium varieties, 151; prices, 5, 10, 13, 16, 24, 25, 26, 122-23, 128-29, 149-50, 151, 153-56, 321; production, 1916-19, 10; speculation in, 24, 124; storage problem, 1918, 143; supply, January 1918, 103; threshing-machine efficiency campaign, 27, 81; voluntary agreements of 1917 crop canceled, 151; "Wheatless Wednesdays," 115
 Wheat and flour control, 121-34; policies and plan of operation, 131
 Wheat and rye, exported prewar and 1917-19, 13, 48
 Wheat Director, 35
 Wheat Executive, composition and function, 347
 Wheat Export Company, 126
 Wheat guaranty, 10, 25, 26, 128-29, 149-54
 Wheat marketing, Great Lakes, 141; Pacific Northwest, 140-41
 Wheat substitutes, 105-7
 Wheatless days, 104, 115
 Whitmarsh, Theodore F., director, Sugar Equalization Board, 179
 Wholesale and Retail Distributors Division, 69
 Wholesalers, "cost basis rule," 206-7; exceptions and penalties, 213; margins fixed, 25, 211-12; maximum margins over delivered cost, 211; resales within the trade, 213, 234
 Wilson, Woodrow, *see* President of the United States
 Window card, 86
 Wines, 108-9

- Wisconsin, 177
- Women, appeal to, for conservation and elimination of waste, 54; co-operation of, in wheat saving, 25; urged to save food, 12; work in conservation increased exports, 33
- Women's Committees of the Council of National Defense, aided in conservation campaign, 86
- Women's societies of churches, in conservation, 94
- Woolley, Clarence, director, Sugar Equalization Board, 179
- Y**
- Y.M.C.A., 110, 330
- Yucatan, 312-14
- Z**
- Zabriskie, George A., director, Sugar Equalization Board, 179