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Colorado Agricultural College

EXTENSION SERVICE

Fort Collins, Colorado

H. T. FRENCH, Director

CO-OPERATIVE MARKETING OF LIVE STOCK

By

R. W. CLARK



CO-OPERATIVE EXTENSION SERVICE IN AGRICULTURE AND HOME
ECONOMICS—COLORADO AGRICULTURAL COLLEGE AND U. S.
DEPARTMENT OF AGRICULTURE CO-OPERATING

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CO-OPERATIVE MARKETING OF LIVESTOCK

By R. W. CLARK

Co-operative marketing of livestock is not new to the United States. For many years it has been practiced in the Eastern states. As long ago as fifteen years, Minnesota and Wisconsin had many livestock co-operative shipping associations. All farmers' co-operative associations have for a long time done more or less co-operative marketing, but it has not been one of the regular functions of these associations and therefore has been much neglected. During late years, this work has taken on an organization of its own, with a paid manager. This is all outlined in succeeding pages. The advantages of this system of marketing are as follows:

1. *It furnishes a market at all times and stimulates production.*—Feed is so high that if the farmer cannot sell his stock when it is ready for market, he will produce very little, if any. Under this co-operative system, the farmer can sell a calf, a cow, a hog, a steer, or a sheep, almost any time and receive its full market value.

2. *It is educational.*—The farmer learns market conditions and requirements by direct contact. He learns the market value of good animals, the value of good sires, the value of finishing for market and the value of sorting before placing his stock on the market. He becomes interested in market reports and every factor that influences prices.

3. *Increases profits.*—The farmer gets all that the market gives and thereby increases his profits. The middleman's profit, which in some localities amounts to \$2.00 or \$3.00 a hundred, is eliminated:

4. *It brings the farmers together,* interests them as nothing else will, and teaches them, in a most convincing way, the value of co-operation.

5. *No capital is required.*—A competent manager is employed, placed under bond and the business turned over to him. No capital is required for organization, buildings are not needed, and there is no storage problem. It is purely a shipping movement and it is strange that farmers have waited so long before they adopted so simple, inexpensive and satisfactory a method of marketing.

CO-OPERATIVE MARKETING ECONOMICAL

The space between producer and consumer is reduced, which means more profit for the former and a lower cost of living for the latter. Nearly every railroad town supports one or more buyers who make their living by speculating in livestock. This means that the farmers of the community are supporting several families where, under the co-operative system, it is necessary to support only one family. In the working of this system, the manager need spend only a part of his time with movement of livestock. Under this system no traveling in the country is necessary.

SYSTEM IMPROVES LIVESTOCK

Wherever the system is used, there is a rapid improvement in the quality of livestock. The farmers get all they are entitled to, and consequently, they are willing to introduce better sires, better methods of feeding, or do anything else that will increase their net return.

THE MANAGER

The selection of the manager is most important. He must be honest, capable, possess a knowledge of livestock, know how to sell his shipments in order to secure highest prices, and understand business principles. He must be a hustler and always ready to take advantage of any condition favorable to his employers' interest. A man who has been a local buyer is sometimes preferable. He understands the situation and can be of great help in making the organization a success. A manager who understands livestock and who keeps constantly encouraging farmers to produce more and better stock can be of tremendous value to a community, and at the same time make himself a very satisfactory income.

GETTING READY TO SHIP

One day a week may be set aside for the shipping of the livestock. If enough has not been reported to fill a car on this day, the shipment may be deferred until enough has been reported. The farmers, when ready to sell, notify the manager, who makes a record of the reports and when enough stock has been reported to fill a car, the farmers are notified by the manager when and where to deliver their stock.

The manager receives the stock and gives the farmer a receipt showing the number of animals, their weight, and the mark used. All receipts should be made in duplicate and the original given to the farmer. By this method any mistake made by the manager is likely to be noted and corrected.

MARKING THE STOCK

Each shipper's stock is marked separately so that he will re-

ceive exactly the amount the stock brings the day it is sold. He is given a Roman numeral for his exclusive use, and this is clipped on the hips of his cattle with a pair of scissors when they are weighed and before they are loaded for shipment. If a cow with a calf at foot is to be sold as a milch cow and not as a killer, this can be indicated by clipping the mark on the left shoulder of both cow and calf. This indicates to the commission man what she is to be sold for. Sheep are usually marked with wool paint of different colors and applied in different places. It should not be applied where it will be rubbed off. Hogs can be marked, but are sometimes graded according to weight. However, it is better to mark them. Notes should be made of stags, sows with pig, etc.

The manager will probably figure out a system of marking that will suit him best. Whatever it be, it should be thoroughly understood by the commission man, and be reliable. A system for marking that leads to confusion should never be used, for it endangers the life and usefulness of the association. The farmer should get exactly what his stock brings the day it is sold. This must be clearly understood by the officers of the association before business begins.

NEED NOT GO WITH STOCK

It is a good plan for the manager to accompany the first shipment or two to market. He gets personally acquainted with the commission men, is present to explain anything that he may need to, and learns a lot about conditions that he otherwise would not know. But when everything gets to going smoothly, it is not necessary to accompany the stock to market. When loading, tack up in the car a card listing its contents, the number of all animals and the marks distinguishing the separate shipments. The commission man will receive this when the stock arrives, check up and report on conditions to the manager.

PAY FOR STOCK AFTER BEING SOLD

The manager makes no payment to the farmer when he receives the stock, but gives the farmer a receipt made in duplicate showing the number, kind, and weight of animals received, and mark used. When the returns from each car have been received, then the manager gives the farmer a complete statement giving exact weights and prices, itemizing and deducting all expenses and accompanies the statement with a check. The itemized statement must show in detail all receipts and expenses and full transaction at terminal markets. The manager, as he is under bond, should make all transactions in duplicate, so that mistakes may be located and corrected. A full and careful accounting to the farmer main-

tains his confidence and tends to build up the business of the association.

SINKING FUND

A few cents a hundred, three or four, should be set aside for a sinking fund, out of which all losses occurring in shipping should be paid. Animals will die in transit, due to no fault of the owner, manager or railroad.

UNITED STATES DEPARTMENT OF AGRICULTURE OFFERS ASSISTANCE

Any association desiring assistance on the Denver market should notify by wire the U. S. Livestock Bureau of Markets, Union Stock Yards, Denver. This notice should be given a day or two before the shipment goes forward. The parties now in charge of the office understand this system of marketing and can render valuable help in many ways.

SUGGESTED FORM OF CONSTITUTION FOR THE ORGANIZATION OF FARMERS' CO-OPERATIVE SHIPPING ASSOCIATION

Article 1. Name.—The name of this organization shall be

Article 2. Place.—The place of the operation shall be in and vicinity, and all regular and special meetings shall be held in as prescribed in the by-laws.

Article 3. Time.—The time over which this organization shall extend shall be indefinite.

Article 4. Purpose.—The purpose of this organization shall be to obtain reasonable prices, and to secure the best possible results in the marketing of livestock and farm produce.

Article 5. Membership.—Any person making use of the shipping facilities of this association shall be entitled to membership by paying a membership fee of

Article 6. Officers.—The officers of this association shall be a president, vice-president, and a board of directors, who shall be elected at the annual meeting, and in case of a vacancy from resignation or otherwise, the board of directors shall appoint a successor, who shall hold office until the next annual meeting, or until his successor has been elected and qualified. All officers shall hold office for one year or until their successors have been elected and qualified. The board of directors shall appoint a manager who shall act as secretary and treasurer of this association.

Article 7. Management.—This organization shall be managed by a board of directors, composed of five members of the association, who shall be elected at every annual meeting; the president,

and secretary and treasurer shall be members of this board, and said officers shall occupy the same position in the board as in the organization. In the case of vacancy in the membership of the board caused by resignation or otherwise, the same shall be filled by the remaining members of the board, and the members so elected shall hold office for the unexpired term, or until the members so elected shall have qualified.

Article 8. Amendments.—Amendments to this constitution may be made at any regular meeting, by a two-thirds vote, when 30 days' notice of the same has been given by announcement to the members.

Article 9. Quorum.—A majority of members of the board shall constitute a quorum, and may do any business that may properly come before said board.

Article 10. By-Laws.—By-laws and rules covering the operation of this association may be made from time to time in the manner prescribed for the amendments to this constitution.

SUGGESTED BY-LAWS FOR THE ORGANIZATION OF FARMERS' CO-OPERATIVE SHIPPING ASSOCIATIONS

Chapter 1.—The shipments of stock in this association shall be made regardless of membership, and the delivery of stock to the manager and the acceptance thereof by him binds the shipper to the rules and by-laws of this association. All who desire to ship stock with the association shall report to the manager the kind of stock, the number of each kind, and the approximate weight of each when it is ready to be marketed. When a sufficient amount of livestock has been reported to be ready for shipment to make a full carload, the manager shall order a car for making the shipment and shall notify each party having stock listed, and state at what time the stock is to be delivered for loading.

Chapter 2.—Section 1.—Duties of Manager.—The manager shall be at the yard on the day the shipment is to be made, unless he shall have secured a competent substitute, and shall receive all the stock, and weigh, mark, and load the same on the car. He shall have charge of and direct the sale of all shipments, and receive all money therefor, and pay the same to the shippers, less his commission and all other expenses incurred in making the shipment, or when so directed, send the money by mail to the shippers. He shall furnish a statement to every shipper, showing net weight, price received, and expenses of shipment. He shall keep on file a complete statement of settlement, together with returns from commission firm selling the livestock for the association. In a book kept for that purpose, he shall keep a record showing the num-

ber of cars shipped, and the amount of stock in such cars, during the year. He shall also keep an account of all disbursements and receipts for the association. At the annual meeting, he shall furnish a detailed statement of all business done during the year.

Section 2.—The manager shall receive as compensation for his services the amount of cents per hundred pounds, and no other compensation from the association, except that he shall have the right to charge for any outlay for materials needed in making partitions to separate the stock in the car and for bedding, said amount to be charged to the expense of the shipment for which it was incurred.

Section 3.—The manager shall furnish a satisfactory bond, which shall be approved by the board of directors. Said bond shall be for the faithful discharge of his duties.

Chapter 3.—Section 1.—Protection Fund.—There shall be deducted on every hundred pounds of weight of hogs and sheep, cents, and for every hundred pounds in weight of cattle, cents, and the same shall be placed in the sinking fund, to be used for the paying of losses that may occur to any stock from the time it comes in the hands of the manager until final disposition of same is made.

Section 2.—Losses. How Paid.—Any shipper whose stock has been damaged by injury while in the hands of the manager, shall receive the full amount for same as though the stock had not been injured, but shall be subject to the same ratio of expense on the shipment. The payment of the damage shall be based on a statement made by the commission firm having charge of the shipment which statement shall show the amount received for the injured animal, the amount, in their opinion, it would have brought had it not been injured. This statement shall be the final basis for the settlement. No damage shall be paid for an animal which was not in a healthy condition when received at the local yards by the manager.

Chapter 4.—Section 1.—Unhealthy Stock.—All stock which must be sold subject to inspection, except such as has been injured while in a healthy condition and in charge of the manager, or any diseased animal, shall be received at the owner's risk, and he shall receive payment therefor as is received by the commission firm, less all expenses figured pro rata on the shipment.

SUCCESSFUL ASSOCIATION FOUND IN LA SALLE COUNTY, ILLINOIS

The following article, taken from The Orange Judd Farmer for July 13, 1918, is so good it is given in full:

"One hundred members strong, all active workers, and a steadily increasing membership, is the record of the Serena Co-operative Live Stock Shipping Association, with headquarters at Serena, La Salle County, Illinois. Within seven months after organization, its membership roster has passed the one hundred mark, and during the same period there were 37 cars of livestock shipped to market for the account of its members. This record is outstanding for so young an organization.

"The association was formed to benefit the owners of small lots of livestock. At the start it was confined to farmers and feeders in the vicinity of Serena, but since then, livestock owners in neighboring towns have joined, so they could ship with the association, thereby increasing the livestock loading from the station at Serena. 'What benefits do the members derive from the organization?' the writer asked H. T. Marshall, president of the association.

"Reasons for the Association

"'In the first place,' said Mr. Marshall, 'A man with one, two or any small number of livestock can ship his own stock to market and receive the benefit of a whole carload shipment. It removes the necessity of selling to the local livestock buyer. The owner thereby makes for himself the profit that is generally made by the local buyer and when shipping with the association, the feeder has no more bother than if he sold his stock right on the farm. When shipping co-operatively, each owner delivers his stock to the loading station. With hogs, this has been the rule when sold to a buyer, while most times, the local shipper would pick up the cattle himself. Many times the owner of a small number of animals has really been at the mercy of the livestock buyer. If the owner asked a price too high, he could not sell them, and at the same time, not enough stock is on hand to justify the ordering of a car. Thus through the association, a man can ship almost whenever he pleases, because shipments are made regularly and instead of taking the local buyer's price, where he has no competition, he receives the full value paid at the market, and only pays his pro rata share of the expenses on the carload.'

"Mr. Marshall is an enthusiastic worker for betterment of farm conditions and a firm believer in co-operative shipping as the means of helping the small feeder or farmer who does not handle much stock in a season.

"There are no dues connected with the association. A member pays \$2.50 to join, and only when he ships, is any fee charged him. No salaries are paid, keeping the expenses down to a minimum. A levy of 1 cent per 100 pounds is made on all shipments, which goes to the association for expenses.

"How the Business Is Handled

"The manager of the association does all the detail work at time of shipping. The stock is delivered to him at the loading point and is in his charge until sold. A fee of 10 cents per 100 pounds is charged to pay for the work of the manager. His principal work is to keep the proper records of the stock. When the stock is delivered to him at the loading station, each animal in the lot is marked and a tally sheet kept, for reference

at the market, so each lot can be weighed separately. Most times the manager accompanies the stock to market. Here he refers to his tally sheet and assists in the sorting of the lots. If he does not go to market, he mails a copy of the various lots and the names of their owners to the commission firm, or else attaches it to the way-bill, and it is delivered to the seller at the market.

"Keeping the Shipments Separate

"It remains for the manager to get the shipments together, but he does not have to canvass the territory to see when the stock is to be shipped. When an owner has stock ready for market, he telephones the manager, who makes his headquarters in the town. The number and kind of stock is recorded. It is kept on record there until others notify him and as soon as a carload has been reported, the owners are notified to have their stock at the loading point at a certain day and hour and the shipment is made up.

"As soon as the stock is delivered to the loading point each animal is marked. A slash is clipped in the hair as a means of identification. The cattle are clipped as they go on the scales, while the hogs are marked in the wagons. Numerous ways of marking make many lots possible. Some are clipped on the left or right hip, the ribs on either side, and hogs can be clipped on the back. This gives a mark that cannot be erased or changed, thereby eliminating all chance of mixes or changing of animals. As soon as the animals are marked, the owner's name is recorded: For instance, John Smith owns six hogs with clip on back, John Johnson owns seven clipped on right hip, and so on through the whole lot and by changing the position of the clips, many owners can use one car. Mr. Marshall recalled a shipment of a single carload of cattle that contained 16 owners and, since organization, there has not been a single claim of lost or mixed stock.

"Mr. Marshall claims the system of clipping the hair in different places is superior to painting, as a means of identification. When paint is used, there is a chance of changing the marks, or the cattle rubbing together and making the brands indistinct and the owners doubtful. It is the intention of the association to build a pen or rack to be used especially for marking the stock, which will greatly facilitate the work at loading time. The scales at the loading point are privately owned and a charge of \$1 per carload is made, but the proposition is now pending whereby the organization will purchase the scales and save this fee to the shippers, and derive a little profit from other users.

"Covering Possible Losses

"Not being licensed, the association cannot handle insurance, but they have a system of protecting members, which applies to the mortality of hogs in transit. A levy of 3 cents per 100 pounds is made on hogs. This money is placed in a sinking fund. In case a hog dies en route, the owner is reimbursed, receiving the difference between the proceeds of the dead animal and what it would have sold for on the regular market. The hogs must be in good health, to come under this ruling. Claims will not

be paid where any disease is prevalent or where the railroad is at fault, because the handler is expected to settle in the latter case.

"Upon arrival at the stock yards, the stock is sorted to make it most attractive. If the loads are even enough, they can be sold in one lot. Then they are sorted and each owner's animals weighed separately. Each separate lot, with the owner's name, shows on the account sales. The expense on the entire shipment is figured and then each man's amount pro-rated according to the weight he had in the car. A notation is made of each lot and the amount of the expenses on the whole bill, also the portion to be stood by each individual owner. The proceeds of the entire shipment are sent to the home bank, with a record of how it is to be divided, and the bank credits the account of each party interested in the load. This eliminates the splitting up of the money among the members. The commissions, freight, feed, and other items are all pro-rated at the stock yards, where men experienced in that line do the figuring and it is all proven up on the general account sales.

"This association has been patronizing the same firm at the market since its organization. It has found that by being acquainted with the sellers, better service is had and after handling a few shipments the firm knows how to handle the different lots, making the work more satisfactory.

"One clause of the by-laws states that no stock shall be fed or watered at least 12 hours prior to shipping. This is to put all owners on the same basis at the market. In cases where a fee is levied, the Chicago weights are considered. By having a limit on the feeding and watering prior to shipping, each owner's stock is figured to shrink the same en route and take on the same fill at the market, making his tax fair in point of weights.

"The manager of the association is not allowed to buy stock from a member, but he is expected to advise them to ship through the organization and sell his own stock on the market.

"No regular meetings are held, except the annual meeting, when the officers are elected. When some question arises for discussion, the president calls a meeting and the business is transacted. The board of directors and the manager handle the business of the association."

The writer of this bulletin thinks that it is better for the commission firm to send the proceeds of sales to the manager rather than to a bank. If this is not done there will be delays, mistakes and all kinds of confusion, and the manager cannot be held responsible. And further, if this is not done, only one commission firm and one bank should be used.

The following business forms were taken from Minnesota Farmers' Institute Annual, No. 26:

COLORADO AGRICULTURAL COLLEGE

P. O. Date Aug. 23, 1913

Received from	Mark Used
..... 4..... Hogs ... 850 lbs.	
..... 1..... Sow ... 420 lbs.	
..... 1..... Cows ... 1100 lbs.	X
..... 1..... Heifers .. 900 lbs.	X
..... 2..... Steers ... 2200 lbs.	X
..... 3..... Veals ... 480 lbs.	X
..... 5..... Sheep ... 620 lbs.	Red Head

Forty pounds off on piggy sows, 80 lbs. off on stags, 1 cent per pound off on cripples.

FARMERS' SHIPPING ASSOCIATION.
..... Manager.

The above is a form of receipt made in duplicate by the manager to each patron, when stock is delivered, showing the number, kind and weight of animals received, and mark used. One copy is retained by the manager and the other given to the patron.

STATEMENT TO EACH PATRON

M. 191....
.....

In Account With
FARMERS' SHIPPING ASSOCIATION
..... Manager

Animals	No.	Home Weigh	Shr.	Net	Price	\$	Cts.
Hogs							
Cows							
Steers							
Veals							
Sheep							

Total received for your stock, \$.....

EXPENSES

Animals No.	Freight, other expenses and Mgr's. Com.	Denver Yardage Com.	Total Expenses
Hogs			
Cows			
Steers			
Veals			
Sheep			

Total Expenses on your stock....\$.....

Balance due you\$.....

The above is a form of a statement used by the manager accompanied by a check, in making returns to the patrons after the returns for each shipment are received. The items, "Freight," "Selling Commission," and "Incidental Expenses" may be combined in one item if desired.

LIVE STOCK RECEIVED

Date

Mark	Name	No. of Hd.	Wt.	Kind
I.	A. Olson	8	9400	Cattle
II.	O. Ryan	1	1100	"
III.	H. Hanson	2	2000	"
IV.	R. Anderson	3	2735	"
V.	C. Larson	2	2250	"
VI.	R. Wilson	1	1400	"
VII.				
VIII.				
IX.				
X.				
XI.				
XII.				
XIII.				
XIV.				
XV.				
XVI.				
XVII.				
XVIII.				
XIX.				
XX.				

Cards used by the manager to record the numbers, weight, and mark of stock as received from each patron, in order to avoid duplicating numbers

Statement
FARMERS' SHIPPING ASSOCIATION

Car No.	Freight.....
R. R.	Mgr's Com.
Date.....	Incidental Ex.
.....Colorado	Yardage.....
	Selling Com.
	Gain or Loss.....

No.	Weight	Shrinking	Net Wt.	Price Amt.	Exp.	To
					Fr.	Bal.
					Com.	Acct.

Form of Statement used and retained by the manager as a permanent record of each car shipped.

List of Available Extension Bulletins

These bulletins are free. If you desire a copy of any of them, order by number and title, addressing THE EXTENSION SERVICE, COLORADO AGRICULTURAL COLLEGE, Fort Collins, Colorado.

Bulletin
Number

- 104 **Dry Farming in the Plains Region**, by Alvin Kezer, J. W. Adams, W. E. Vaplon, and R. McCann. 16 pages.
Includes short articles on the following subjects: "Some Principles of Soil Moisture Under Dry-Farming Conditions," "The Construction of Pit Silos at the Plains Substation," "Poultry on the Plains," "Going into Dairying."
- 105 **Household Exhibits at Fairs**, by Inga M. K. Allison. 16 pages.
Includes suggestions on the transportation, preparation and entering of exhibits, and presents specimen score cards for the different classifications.
- 107 **Silos and Silage**, by R. W. Clark and Chas. I. Bray. 12 pages.
Part I consists of an article by Mr. Clark upon the advantages of the silo, including two valuable tables on silo capacities and the relation of the herd to the diameter of the silo, as well as tables of silo rations. The construction of pit silos is explained by Mr. Bray, the discussion being illustrated with photographs.
- 108 **Domestic Water Supply**. 11 pages.
Explains in detail, system for installing running water in the farm home, from the most inexpensive to the more elaborate, including drawings and directions from which systems may be installed without the aid of an expert or plumber.
- 113 **Books for the Farmer's Wife**, by Charlotte A. Baker. 12 pages.
A comprehensive list of books upon administration of the home, planning, furnishing and care of the home, conservation of health, the selection, preparation and use of foods, the clothing problem, the social life of the home, how science affects the home, woman out of doors, together with the publisher's name and price and including miscellaneous and free publications.
- 115 **Growing Corn in Colorado**, by Alvin Kezer. 20 pages.
Deals with corn as a grain crop, as a forage crop, corn soil, location for corn, manure, preparation of the seed bed, planting, cultivation, harvesting, a discussion of varieties and of seed selection.
- 117 **Prevention of Smut in Oats**, by Harvey E. Vasey. 8 pages.
Discusses cause of smut, kinds of smut, method of treating seed to prevent smut.
- 118 **Fighting Grasshoppers**, by Chas. R. Jones. 12 pages.
Includes the results of a campaign against grasshoppers conducted in 1916, and suggestions for the control of the pests.
- 120 **Preservation of Fruits and Vegetables by Drying**, by H. W. Allinger. 16 pages.
Commercial evaporators, sun drying, sulphuring, home drying, sweating, storing dried products, fruit drying, vegetable drying, grading and packing are discussed.
- 121 **Farm Storage of Apples and Potatoes**, by James L. McGinnis. 19 pages.
Describes in detail construction of storage cellar, including plan, and discusses important points of management; a brief section is also devoted to storage of potatoes in pits.

- 122 **Harvesting and Storing Vegetables for Home Use**, by J. J. Gardner. 7 pages.
Tells how vegetables to be stored should be harvested, and discusses different methods of storage, including out-of-door pits and the home cellar.
- 123 **Trees for Non-Irrigated Regions in Eastern Colorado**, by W. J. Morrill. 20 pages.
Contains lists of trees, shrubs and vines adapted to the plains region, together with a description of each, and instructions on how to plant, where to plant, and how to care for the trees. Three or four pages are devoted to illustrations of planting operations.
- 125 **Wheat Growing in Colorado**, by Alvin Kezer. 7 pages.
Discusses varieties, preparation of the soil, seeding, seed treatment, cultivation, manuring and harvesting.
- 126 **The Poultry House**, by W. E. Vaplon. 7 pages.
Gives a discussion of the foundations and floors, ventilation and light, arrangement of fixtures, the underground house, roosts, nests, and includes photographs and drawings.
- 127 **Management of the Dairy Herd**, by R. W. Clark. 13 pages.
The barn, pasture, feeding, selecting, health, raising the dairy calf and breeding, are discussed and the bulletin is well illustrated.
- 128 **Meat and Meat Cookery**, by Miriam M. Haynes. 20 pages.
Complete and comprehensive discussion of the subject, including illustrations with cuts of beef, veal, lamb and mutton; the principles of cooking meat, degrees of cooking, a good list of recipes, including sauces, suggestions for combinations for meats and vegetables and for the use of left-over meat.
- 130 **Poultry Management**, by W. E. Vaplon. 8 pages.
Deals with markets, feeds, and the importance of book-keeping; for use in boys' and girls' poultry clubs, but contains valuable information for the poultry raiser.
- 134 **The Prevention of Smut in Grain by Seed Treatment**, by H. E. Vasey. 4 pages.
Deals generally with cereal smuts and their prevention by the soaking method, the sprinkling method, and the spraying method.
- 135 **Hints on the Conservation of Food**, by Miriam M. Haynes. 4 pages.
Contains brief suggestions on the saving of money in buying, the saving of food by proper storage, careful preparation, careful cooking and the proper use of "left-overs."
- 136 **Potato Diseases and Methods of Control**, by H. E. Vasey. 4 pages.
Gives discussion of Black Leg, Dry Stem Rot, Wilt and Tuber Dry Rot, Common scab, and their control.
- 137 **Incubation and Feeding of Little Chicks**, by P. F. Schowengerdt. 12 pages.
A practical bulletin upon selection of eggs and care of chicks for hatching, artificial incubation, natural incubation, artificial brooding, and natural brooding.
- 139 **Water Hemlock, A Poisonous Plant**, by W. W. Robbins. 4 pages.
Designed especially to give warning to school teachers and others regarding the deadly nature of these poisonous plants, the roots of which are sometimes eaten by children with fatal results. Also gives description of the plant, its distribution and habitat, its eradication, the symptoms of poisoning in humans and animals, and treatment in both cases.

- 140 **Prevention of Blackleg**, by Geo. H. Glover. 4 pages.
Describes in brief form the different means of immunizing calves against blackleg. Including the attenuated virus, tissue filtrate, culture filtrate, serum, serum-and-virus.
- 142 **Poisoning by Larkspur**, by Geo. H. Glover. 4 pages.
Designed to inform stockmen regarding the dangerous nature of this plant, the symptoms of its poisoning, the animals which are liable to be poisoned, conditions of poisoning, and prevention and treatment.
- 143 **Emmer Flour—A Substitute for Wheat Flour**, by W. P. Headden. 4 pages.
Gives results of baking tests in which Emmer flour was substituted for wheat flour in proportions of 25, 50, and 75 percent; discusses yields and milling.
- 145 **Storing Vegetables for Home Use**, by R. A. McGinty. 4 pages. (Reprint of Bulletin No. 131.)
Directions for storing common garden vegetables so the products of the garden may be preserved for use during the winter.
- 147 **Eradicate Common Barberry**, by W. W. Robbins and H. E. Vasey. 8 pages.
Shows loss in wheat yield suffered in Colorado because of wheat rust harbored by common barberry, reviews state law covering eradication of such pests, describes life history of stem rust of wheat, describes common and Japanese barberry, and gives method of eradication.