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A Poultry Survey of Jackson County

F. S. Jacoby

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A POULTRY SURVEY
OF
JACKSON COUNTY

BY
F. S. JACOBY

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A POULTRY SURVEY OF JACKSON COUNTY

By F. S. Jacoby
Special Poultry Investigator

Jackson County is the greatest poultry producing county in the State of West Virginia. In order to ascertain the exact conditions under which poultry was raised and poultry products were marketed in Jackson County, a survey of 299 farms and 74 country merchants was taken. No effort was made to visit any particular section of the county, but the northern and eastern sections were given more attention because of the fact that Ravenswood was selected as a working base, and farms in that part of the county were more accessible. The farmers or their wives were asked questions which would present the information called for by the following blank form:

Farmer's name ..... Date.....
Address .....
Size of farm ..... Type of farming.....
No. fowls ..... Breed and variety .....
Number, sizes, and kinds of poultry houses .....
.....
.....
.....

Feed	Total bushels grown
Corn	.....
Oats	.....
Wheat	.....
Rye	.....

Other Feed Purchased:

Kinds

.....
.....
Method of feeding .....
.....
Eggs sold at .....to.....Distance.....
How often marketed .....
Price—Summer ..... Winter .....
Cash or trade ..... Total value of eggs sold.....
Estimated or actual production of eggs a week during: Spring.....
..... Summer..... Total.....
Old fowls sold: Where ..... When..... Price.....
Young fowls sold: Where ..... When..... Price.....
Total value of fowls sold .....
Who cares for fowls .....

Method of raising chicks .....
.....
.....
Remarks (observations): Care and management; perches; nests; chick coops; manure; litter; dead fowls; feeding; watering; grit; shell; age of fowls; etc. .....

JACKSON COUNTY.

General Statistics.

Jackson County is located in the western part of West Virginia. It is bounded on the west by the Ohio River, on the north by Wood and Wirt counties, on the east by Roane County, and on the south by Kanawha, Putnam and

A typical Jackson County hill farm. The greatest interest in poultry is shown by the farmers living in the "Runs" and "Forks."

Mason counties. It comprises an area of 461 square miles and has a population of 20,956, or 45.5 persons per square mile. The population is almost entirely Protestant and white, the entire county having only 26 negroes. There are 841 illiterate persons over 9 years of age, or 5.5% of the total population of that age. The families are of good size, as indicated by the fact that there are only 4,143 families in the county. The towns are few and small—Ravenswood,

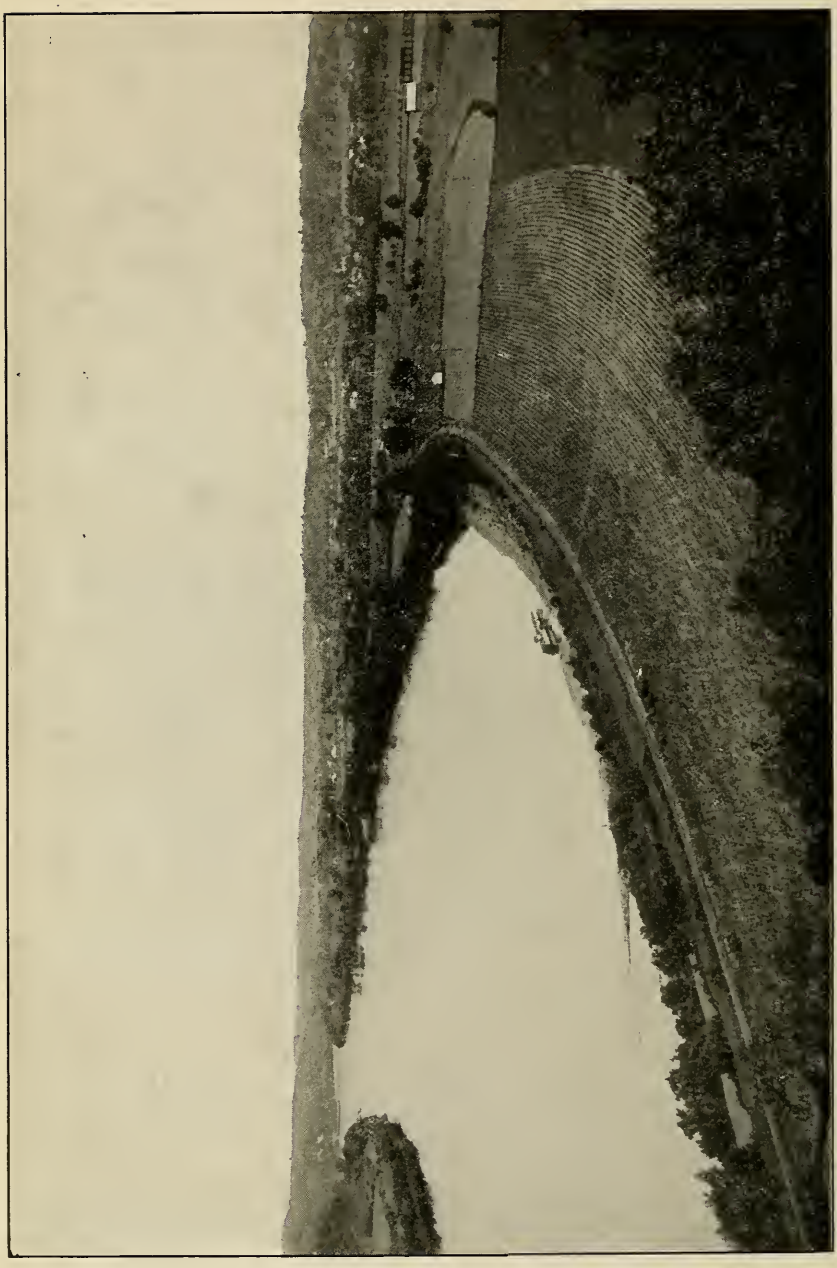
with a population of 1,081, being the largest, with Ripley, Millwood, Sandyville, Cottageville, Given, Duncan, and Frozen Camp the only other places worthy of mention.

Transportation.

The Baltimore and Ohio Railroad is the most important means of transportation in the county. The Parkersburg and Kenova division follows the Ohio River along the western border of the county, passing through Lone Cedar, Murraysville, Sherman, Ravenswood, and Millwood. At Ravenswood, a branch line, known as the R. S. & G., extends eastward through Silverton, Sandyville, Duncan and Liverpool, to Spencer. At Millwood, a branch line, known as the Ripley and Mill Creek Valley, extends eastward through Cottageville, Angerona and Evans, to Ripley, the county seat of Jackson County.

Agriculture.

Jackson County contains 3,145 farms, ranging in size from 3 to 1,000 acres. It is significant that 2,111 farms contain less than 100 acres, while 1,034 farms exceed 100 acres in size. The average value of the land is $16 per acre. Practically all farms report domestic animals. Cattle, horses, sheep, swine and poultry are all given considerable attention. From an agricultural standpoint, the county may be divided into certain arbitrary divisions. The section of the county lying west of a line drawn from Medina to Sandyville to Ripley to Given may be described as diversified in its farming operations, with more or less attention to poultry. East of this line, cattle raising constitutes the main source of revenue and poultry is secondary. Along the Ohio River from Muse's Bottom south to Schoolhouse, truck farming is given attention and poultry raising is not encouraged. The country lying south of Ravenswood and northeast of Cottageville is known as a poultry section and here one finds a number of farms on which poultry raising is the main source of income. As a general rule, the farmers paying the most attention to poultry are those living in the western half of the county and particularly those whose farms lie in small "runs" or "forks." The farms lying in the Mill Creek and



Along the Ohio River at Ravenswood.

Sandy Creek valleys are adapted to certain crops which preclude any interest in poultry. The country south of Mill Creek produces the bulk of the turkeys raised in Jackson County. Each farm has a flock of from 25 to 100 turkeys. The rough hillside land of that section is the natural home of the turkey and the farmers are more or less successful in raising them.

Poultry.

There are 151,658 fowls valued at $82,105 in the county, or an average of 48 fowls per farm. The average value of each fowl is .54, which means an investment of $26 in live fowls for each farm. In 1909, 168,413 fowls were raised in Jackson County, or an average of 53 per farm, and 967,324 dozens of eggs were produced, or an average of 307 dozens per farm. Based upon the above figures, the production per fowl would be about 76 eggs per year. The total value of poultry and eggs produced equals $264,323, or $84 per farm. Of this amount, $63 represents the income from the sale of poultry products, while the balance is consumed on the farm.

Poultry Survey.

Of the 299 farms, 288 were general farms on which diversified farming was practiced. There were 2 poultry farms, 3 dairy farms, 4 fruit farms, and 2 truck farms. The general farms were in most cases managed by the owner or his sons, but of the 288, there were 40 tenants. These tenants should possibly be called hired men as their opportunity to farm on their own account was limited. They usually lived in a small house with a still smaller barn and possessed some chickens and possibly a cow. Handicapped by a lack of feed and a poor poultry house, they do not keep very many fowls. They are also handicapped in getting their eggs to market, and consequestly use most of the product at home. The owners, on the other hand, take considerable interest in the poultry and appreciate its importance as an economic factor in the agriculture of the county.

Size of Farms and Size of Poultry Flocks.

The following table shows the relationship between the size of the farm and the number of fowls per farm:

No. of farms	Size of farms	Average Acreage	Average No. fowls per farm.
120	100 acres or more	166	96
147	99 acres or less	50	72
32	No report on size		97

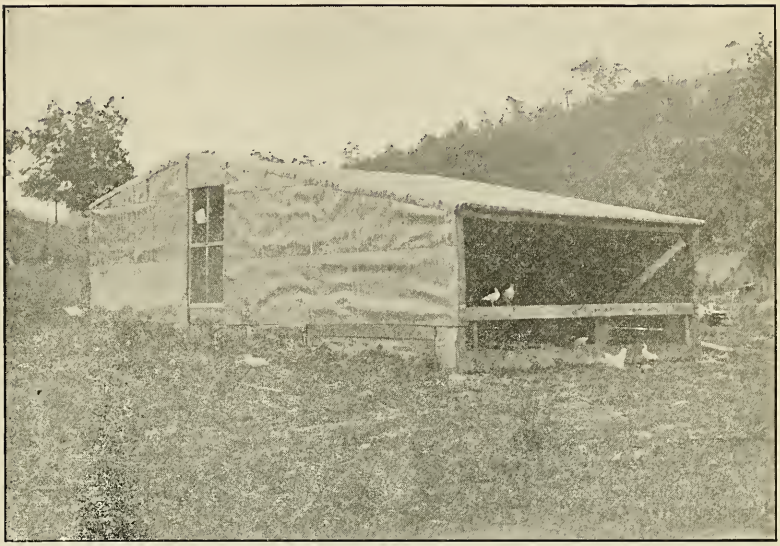
It will be noticed that the larger farms support more fowls, although the number is not necessarily in direct proportion to the size of the farm. The size of the farm flock seems to depend more upon the housing facilities and the initiative of the farmer's wife than upon the amount of land available.

Poultry Houses.

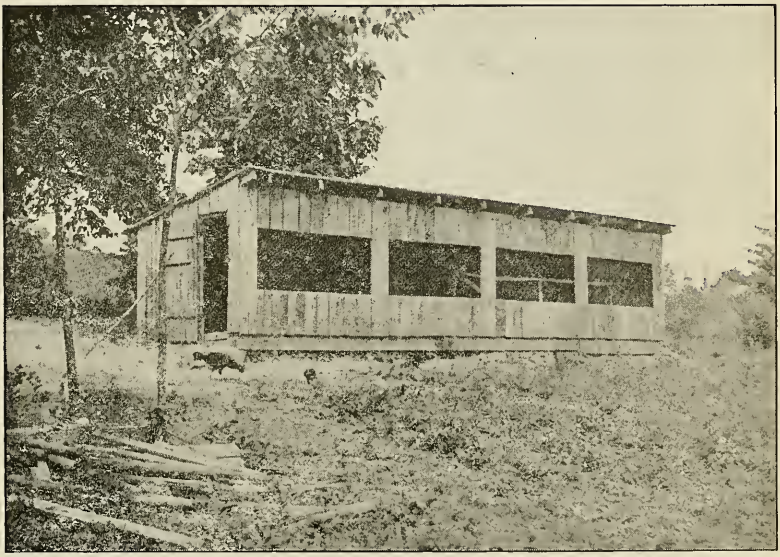
The poultry house has not received a great deal of attention. In many cases the house in use at the present time has served two or three generations. The following table gives a general classification of the poultry houses on 299 farms:

No. of farms	No. of poultry houses.	Size of poultry houses.
17	None	
45	1	less than 10′ x 12′.
143	1	larger than 10′ x 12′.
65	2	
24	3	
2	4	
1	6	
1	7	
1	9	
299		

When no poultry house is available, the farmer usually provides nests in the barn or sheds, so that the eggs can be gathered with some degree of certainty, but the hens must roost in the trees or on perches constructed beneath the trees. A few of the 17 farmers listed in the above expect to build poultry houses before winter. The farms, 45 in number, which have one house less than 10′ x 12′, keep only a small flock of fowls. These houses represent anything from a crude



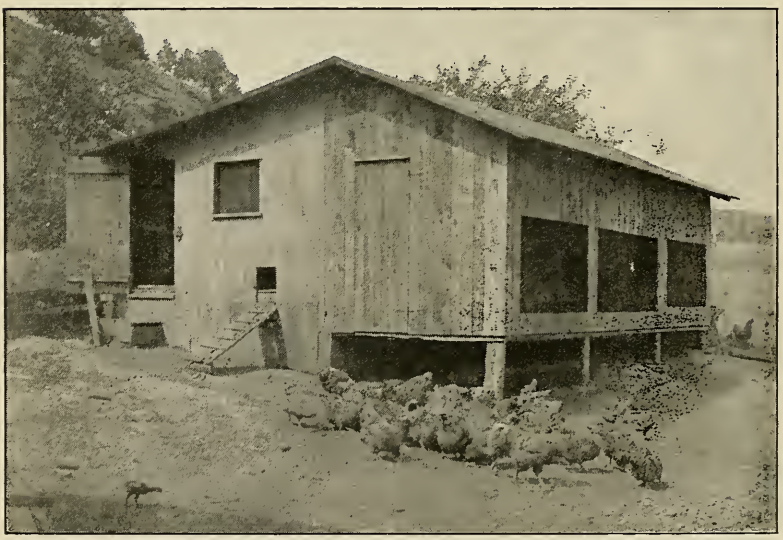
A Tolman type of poultry house. One of the three types best adapted to Jackson County.



A simple shed roof poultry house 7′ x 30′, with a paper roof and open front. Well adopted to Jackson County.

shelter to a neatly constructed building of the most approved type. The type of house in general use has a shingle gable roof, is 6 feet high at the eaves, 8 feet wide and 10 feet long. A few perches and nest boxes are the interior equipment. The walls are usually constructed of unmatched boards which have shrunk, thereby leaving large cracks and making the houses cold and unsanitary.

Three types of poultry houses have met with favor among a large number of farmers and appear to be well adapted to the county. These are (1) the Tolman house, as recommended by the West Virginia Experiment Station, (2) the



One hundred and fifty pure-bred Barred Rocks were housed here. The front part is a scratching shed, the rear a roosting room.

shed roof house, 10 to 14 feet deep, and (3) the gable roof house of the same dimensions. There is a tendency to use tin and metal instead of paper roofing. While the former are more lasting, they also have a tendency to make the house too warm in summer and too cold in winter. Another practice which is quite common is that of placing nests on the outside walls of the poultry house. In many cases these nests are exposed to the direct rays of the sun at some hour during the day. This practice undoubtedly originated through

a desire to provide a comfortable and cool place in which the hen might lay.

Practically no effort is being made by the majority of farmers to preserve and utilize the poultry manure. There is undoubtedly an enormous waste of valuable fertilizer, which could be prevented by the use of some good absorbent such as gypsum (land plaster), kainit or acid phosphate. The number of poultry houses having concrete floors is very small. This condition is due in a measure to the presence of sand in most parts of the county, which is used in poultry houses instead of straw.

Feeding Laying Hens.

The feeding of poultry is a subject that has not received very much attention from the farmers of Jackson County. The following summary gives a general idea of the methods of feeding the laying hens:

No. Farmers	Method of Feeding
54	Corn alone
3	Wheat alone.
82	Corn and wheat.
5	Corn and oats.
33	Corn, wheat and oats.
7	Corn, wheat and cane.
2	Corn, wheat and millet.
2	Commercial scratch feed.
107	One or more grains and a moist or dry mash.

It is worthy of notice that over one-third of the farmers are feeding a moist or dry mash. The remainder feed only grains. The most common mash mixture is known as "mill feed" and consists of bran and middlings. It is usually fed dry but 16 farmers are feeding milk, either in the mash or in addition to it. Inasmuch as meat scraps cost 4 cents a pound, the feeding of skimmed milk or butter-milk offers a cheaper and more convenient form of protein. Commercial poultry foods are too expensive and have no exceptional qualities to recommend them. Corn must be the basis of all poultry rations, with wheat and oats as supplementary grains. The fact that over one-third of the farmers feed a mash indicates that they appreciate the necessity of certain foods to balance the corn and wheat. Only one miller in the county is attempting to provide prepared poultry foods manufactured

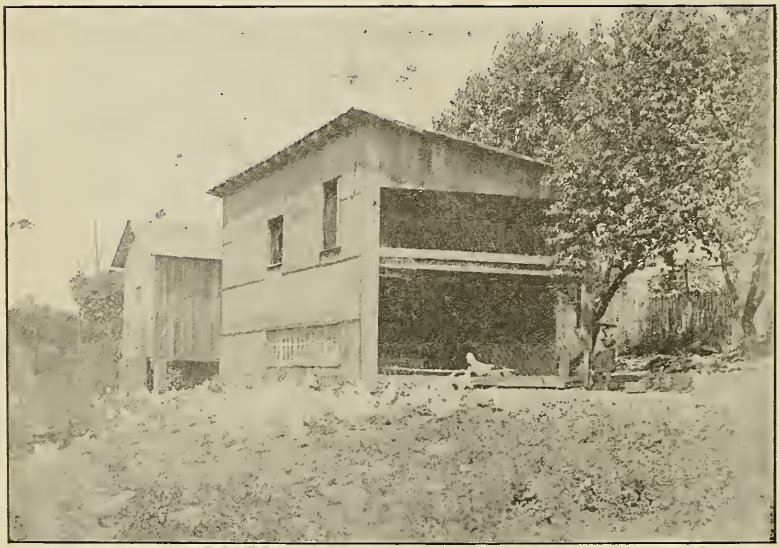
from home-grown grains and sold at a price comparable with the quality of the product. (See list of St. Dennis mill feeds.)

The following table which shows the limited variety of poultry feeds grown by the farmers, clearly indicates the necessity of purchasing certain feeds:

No. of Farmers	Feeds Grown.
91	Corn only.
2	Wheat only.
105	Corn and wheat.
12	Corn and oats.
62	Corn, wheat and oats.
1	Corn, oats and millet.
1	Corn, oats and cowpeas.
25	No crops grown.
299	

The purchased feed is largely mill feed but it is surprising how many farmers must purchase corn, wheat and oats.

No. of Farmers	Feed Purchased.
34	Grains, corn, wheat, oats, etc.
80	Mill feed, corn meal, meat scraps, etc.
46	Grains and mill feeds, etc.
139	None.
299	



A two-story poultry house worthy of being copied.

Thus, it will be noticed that over one-half of the farmers purchase some feed during the year. There are certain grains such as kafir, millet and sunflower seed, which could be grown at home with profit. The value and use of milk in poultry feeding is appreciated by only a few farmers. In making the survey, it was apparent that the farmers who were getting the most eggs were those who raised a variety of grains and fed mill feed and milk.

Information regarding the production of the farm flock was difficult to secure. Very few farmers could give accurate figures for the preceding months and the number of farmers who were keeping records of eggs produced and sold was comparatively small.

Egg Production.

On 265 farms, the average weekly production of eggs during the spring was 26 dozens, and during the summer about 13 dozens. These figures represent the production of a flock of 85 fowls, and indicate 52% production in the spring months and 26% production during the summer months. The cost of producing eggs in Jackson County under farm conditions is not definitely known, for no one, to the writer's knowledge, has ever kept accurate cost figures. Mr. Stone has perhaps the most accurate records. Although 33 farmers could give a record of eggs sold, not one had any record of feed consumed. As a result of the survey 134 farmers promised to keep a record for one year of all eggs produced and all fowls and eggs sold.

Marketing Eggs.

The eggs of the farming community are all marketed through the country stores. Only 6 farmers are making a practice of shipping eggs direct to distant points. These farmers are producing eggs which are uniform in color and are graded for size—a product far superior to the average. The additional value of such eggs compensates the shipper for the expense involved in packing and expressage. The following table gives the egg marketing situation in concise form:

No. of Farmers	How Often Marketed	No. of Farmers	How Taken to Market	No. of Farmers	Returns
1	Once in 2 weeks.	124	Buggy	177	Trade
239	Once in 1 week.	75	Carry	56	Cash
39	Twice in 1 week.	30	Wagon	61	Both
5	Thrice in 1 week.	13	Collected		
2	Daily.	2	Horseback		
3	Used eggs at home.				
289		244		294	

It will be seen from the above that the majority of farmers market their eggs once a week in a buggy or spring wagon and receive in groceries the value of their eggs. Of 244 farmers, 75 carry the eggs to the store. These farmers live near the store or else do not possess a horse. When a store is located within a mile of the farm, the farmer's wife usually carries the eggs to the store herself and does the trading. Only 56 farmers sell their eggs for cash alone, the remaining 238 trading part or all of the receipts for groceries. In practically all grocery stores in Jackson County, eggs are currency and the price is the same whether paid in cash or groceries. The only exceptions are Ravenswood and Ripley, where the produce houses pay one cent less than the groceries.

Marketing Live Poultry.

In the marketing of live poultry there seems to be no regularity or system. The fowls are caught and taken to market whenever convenient. Of 299 farms, 113 had sold old fowls sometime during the preceding six months, while only 73 had marketed any young chickens. The prices paid for old fowls are steady, being highest in the spring and lowest in the fall. Prices range from 15c to 10c. Broilers and "springs" fluctuate in price, ranging from 30c in April to 12c. in August. The drop from 25c to 15c. came this year about the first of July. There were thousands of "springs" marketed during July that should have been marketed in June at a much higher figure. When the price goes below 15c there are fewer "springs" sold for the cost of production prohibits their sale at a profit. They are then consumed on the farm. Live poultry is handled by the stores under the same conditions as the eggs.

Incubation and Brooding.

Hens are the universal incubators and brooders of Jackson County. Only 28 of a total of 299 farmers use incubators for hatching the eggs. Many of these use hens in addition to the incubators and brood the chicks under hens instead of in brooders. Incubators are found mostly on those farms that raise only Leghorns or a non-sitting breed. Very few farmers have made any effort to systematize the management of the sitting hens. In most cases they occupy nests in a secluded place but it is not uncommon to find the regular nests being used for this purpose. Brooding is done almost entirely with hens. The coops are cheaply constructed of old boxes or other waste lumber. This is a contributory cause of the large losses due to rats and other pests. The brooding equipment, wherever found in use, consisted of oil-heated brooders of the Universal and Cyphers types.

Feeding Chicks.

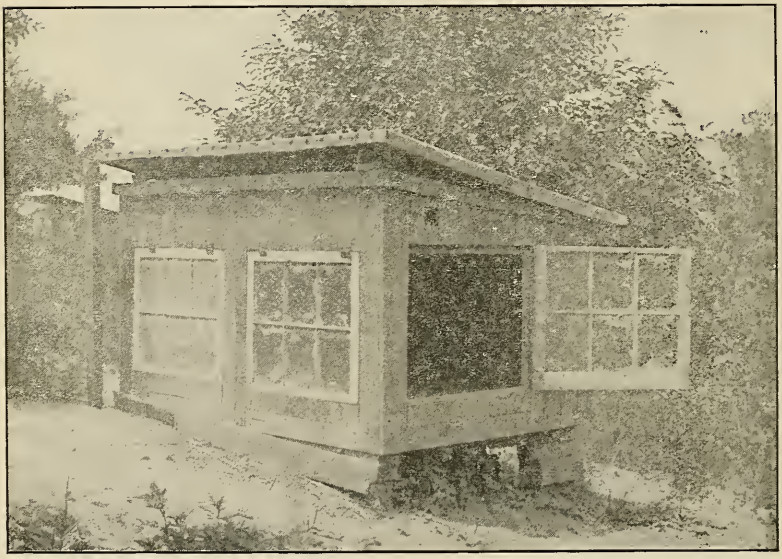
On 272 farms, an average of 116 chicks were hatched and raised last spring. As indicated in the preceding paragraph, most of these chicks were hatched under hens and, it might be added, were fed on cracked corn. The following table indicates the importance of cracked corn in the feeding of chicks:

No. of Farmers	Feeds given chicks.
98	Cracked corn, only.
121	Cracked corn and other grains.
43	Commercial chick feed.
262	

Nearly one-sixth of those reporting feed commercial chick feed. This is usually purchased at the grocery store in 10 and 25 pound lots. Its cost is too high and, if used at all, should be limited to the first week of the chick's life. Finely cracked corn and cracked wheat could be purchased at a much cheaper price at the mill in Ravenswood and the quality would be first class. There is need of more variety in the chick ration as it is fed on the average farm.

Breeding.

The relationship between breeding and production of poultry has not been appreciated in many sections of the county. Although 61 farmers claim pure-bred stock, several flocks show grade characteristics. Leghorn blood seems to predominate throughout the county, as shown by the fact that of the above 61 farmers, 38 breed S. C. White Leghorns, 6 breed Brown Leghorns, 8 breed Barred Plymouth Rocks, 5 breed Rhode Island Reds, and 4 farmers breed one each of the following: Black Leghorns, White Plymouth Rocks, Buff Leghorns and Buff Orpingtons. The number of flocks



A good type of colony brooder house. Size 4′ 8′.

of White Leghorns is steadily increasing, due to the fact that this breed is best adapted to the county. The Leghorn matures early, is easy to hatch and rear, is a good forager and the most economical producer of eggs. Other breeds are necessary to the county, however, for natural methods of incubation and brooding promise to prevail for some time.

Little attention has been paid to improving the size of the egg, or to the development of heavy laying strains. In certain sections, notably south and east of Ripley, the flocks

have been in-bred to such an extent that the eggs are noticeably smaller than those from other parts of the county. In addition to this, a party at Evans has introduced Silver Spangled Hamburg blood into many flocks, thereby decreasing the size of the offspring and giving an undesirable bluish color to the shanks of the fowls. The county needs pure-bred stock of the general purpose breeds and an educational campaign of the desirability of this stock. The influence of the Leghorn cockerels sent out by the West Virginia Experiment Station can be seen in certain localities where the farmers have kept the blood lines pure.

Management.

Although the majority of farmers admit the importance of poultry in contributing toward the farm income, comparatively few have undertaken to systematize the management of the flock. The following table shows to what extent the care of the flock depends upon the women of the farm:

No. of Farms	Care-taker of flock.
272	Woman.
22	Man.
5	Children.

Only 22 men care for the farm flock regularly, and in nearly every case these men care for large flocks that are beyond the strength of a woman. The 5 children who care for the poultry do so because of circumstances which have placed them in charge of the home. These are girls. In any event, the woman on the farm is the prime factor in any question concerning the poultry flock.

Diseases.

Cholera is the single disease which is feared among farmers more than any other disease. It is erroneously called limberneck in most sections of the county and this idea prevails because of the similarity of some of the symptoms of the two diseases. However, a study of the conditions involved, together with an occasional post-mortem, gave every indication that the disease is cholera. Fifteen farms were visited where this disease was responsible for the loss of part or all

of the flock. In two cases, the entire flocks, numbering a thousand fowls, had been completely wiped out. In July, an epidemic made its first appearance in Jackson Run. By the end of August nearly every farm in the Run was or had been affected by the disease. (See map.) This epidemic made its appearance after a certain rainfall. During the drought of May and June no cases were reported. The disease undoubtedly was carried down the Run by the small stream which flows only after heavy rains. Farm 249 had had this disease and the flock had partially recovered (loss, 64 fowls) when the disease made its appearance in an extremely virulent form in the poultry yards of Dr. Becktel, at Wilding. The farms visited were in an unsanitary condition and it is not strange that the disease made such rapid headway. The solution of this trouble is sanitation and preventive sub-cutaneous inoculations of 3 c. c. of a 5% solution of carbolic acid.

A STUDY OF MARKETING CONDITIONS IN JACKSON COUNTY.

The information contained in the following report was obtained by visiting 74 dealers and asking the questions suggested by the following blank form. These merchants comprised (1) hucksters, (2) country merchants and (3) produce dealers:

Survey of Sales of Poultry Products

By Country Store, Buyer or Commission Merchant

Name of dealer .....
City, Town or Village ..... Population.....
No. of Customers .....
How often marketed .....
Method of holding eggs .....
Method of candling or grading eggs .....
.....
Quality .....
Shipping to ..... Distance.....
Via ..... Rate per case .....
Price—Spring ..... Summer..... Fall..... Winter.....
Character of building and equipment for handling eggs.....
.....
Fowls sold ..... Shipping rate.....
Price:
Old fowls—Spring..... Summer..... Fall..... Winter.....
Young fowls—Spring..... Summer..... Fall..... Winter.....
Remarks: .....
.....

A huckster may be a country merchant, but anyone who buys poultry and eggs from the farmers, gathering the same by wagon and hauling to a produce dealer or shipping point, is known as a huckster.

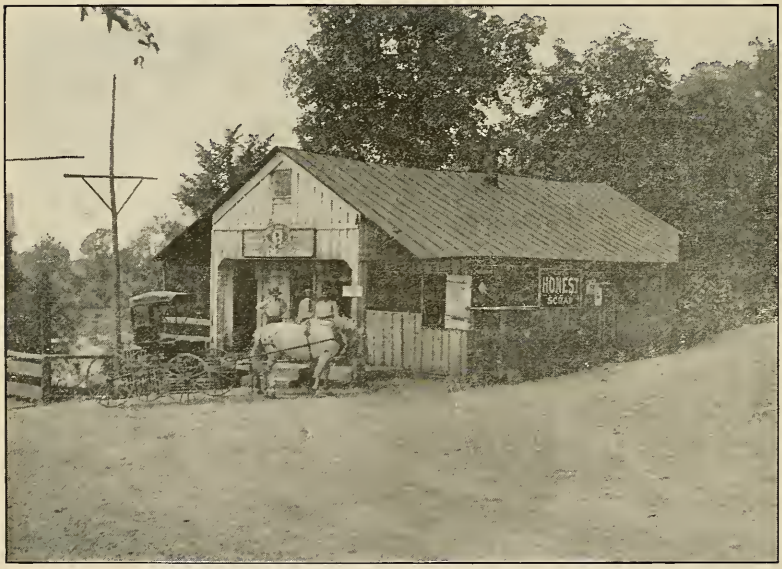
A county merchant may be a huckster, but those that are located on a railroad do not make a practice of sending out a wagon to buy produce.

A produce dealer is located at a convenient shipping point. He buys produce of all kinds in any quantity and markets the same in car-lots in a distant market.

In Jackson County there are 4 produce dealers of the first class and 3 produce dealers of the second class. Of those in the first class, two are located at Ravenswood and one at

Millwood. The fourth, located at Long Bottom, Ohio, buys considerable produce in the northern part of the county. These dealers ship in car-lots throughout the year and accompany their cars to Pittsburgh where the produce is sold. Of the dealers in the second class, two are located in Ripley and one in Sandyville. These parties ship in smaller lots and do not accompany their shipments to market. They also ship locally to larger dealers during certain seasons of the year.

Two hucksters carry on a small business in addition to farming. These are located near Millwood and Cottageville.



The country store collects the bulk of the eggs that are produced on the farm.

The remaining 65 dealers are known as country merchants and are scattered throughout the county. There are probably 15 merchants that were not visited.

The Country Store.

The bulk of Jackson County eggs pass through the country store. Eggs are regarded the same as currency and the price is the same whether paid in cash or trade. Practically all the stores are frame buildings. Three produce dealers have con-

crete block buildings which are appreciably cooler in summer than the wooden structures. A few stores have cellars but a large number have neither cellar nor cave. No one has endeavored to provide a special arrangement for the handling of eggs that would tend to curtail losses existing under the present arrangement.

Holding Eggs.

The first consideration affecting the quality of eggs is the method of holding the eggs in the store. Of 74 dealers, the following table gives a general idea of the method of holding the eggs:

Method	No. Dealers
In cases in store	65
In cases in house	3
In cases in cellar	3
In cases in dark room	1
In baskets in store	2
	74

It will be noticed that the most convenient way, putting the eggs in cases as they are received, is practiced by 65 dealers. As each farmer brings in his eggs, they are counted and put in a case. When a case is filled, it is nailed shut and placed at one side. These cases are kept under the counter, in the rear of the store, or on the floor in the middle of the store. Only three merchants make a practice of keeping the eggs in a cool place. One huckster claims that a darkened room is superior to a cellar as the light tends to decompose the eggs. Two merchants use baskets as a receptacle instead of egg cases, due to lack of cases rather than any preference for a basket. While the eggs are held in the country store there is a tendency towards deterioration. This deterioration is due to heat and age. The natural summer temperature is sufficiently high to cause the eggs to spoil without taking into consideration the jarring and exposure to the sun that is incidental to hauling the eggs to the store. In many cases eggs are held for a period of 10 days before being hauled or shipped to the market. Without a doubt, 90% of the deterioration that takes place in the country store is preventable. However, it is impossible to

expect the merchants to minimize the losses that are due to the farmers' neglect.

Shipping.

Practically all the merchants market their eggs once a week, usually Thursday or Friday. The eggs are shipped on these days so that they will reach the produce merchants in time to be candled before Saturday evening.

Taking the eggs to market. Note the absence of springs or other shock absorbing arrangement.

No. Dealers	Marketing.
64	Once a week
7	Twice a week.
1	Thrice a week.
2	Daily.
74	

Most of the country merchants use the railroads for shipping the eggs to the produce dealers. However, in certain sections of the county, particularly the northeast and southern portions, there are no railroad facilities. The merchants are obliged to haul their eggs for long distances over rough

country roads. In the southern part of the county four horses, or even six, are required to haul the heavy loads of eggs to the nearest shipping point (Evans or Ripley) in the spring of the year. The following table indicates the destination of shipments:

No. Dealers	Destination.
56	Local points.
16	Pittsburgh.
1	Marietta and Wheeling.
1	Parkersburg.
74	

Of the 16 dealers shipping to Pittsburgh, only 5 are consistent shippers throughout the year. The balance ship only during the spring months or when the output of the county is greatest. An analysis of the method of shipping or disposing of the eggs shows the lack of uniformity in handling the product throughout the county. This condition is brought about by location rather than choice. However, in a single community, where there are two or more merchants, it is not uncommon to find each with a distinct method of reaching their market.

No. Dealers	Method of Disposal.
24	Haul by wagon to a produce dealer.
4	Haul by wagon to a shipping point and then ship by local freight to a produce dealer.
20	Ship by local freight to a produce dealer.
8	Ship by express to a produce dealer.
6	Ship in carlots or by through freight to a distant produce dealer or market.
12	Sell their eggs at the store to a huckster or produce dealer and do not haul or ship.
74	

The hauling of eggs to the local shipping point is an important factor in the quality of the eggs. It is a noticeable fact that the eggs from the southern part of the county are inferior in quality to eggs from other sections, due largely to the haul from the country store to the shipping point. A haul of 8 to 18 miles over rough country roads in a springless wagon is almost certain to cause a large percentage of "watery" or "loose" eggs. These eggs deteriorate very

rapidly after reaching the produce house. The use of liberal quantities of straw in the bottom of the wagon would tend to overcome this loss but the dealers feel that this precaution is not necessary and would regard it as more or less trouble because of the fact that the wagon is loaded with freight on the return trip.

At certain buying points (such as Evans) the merchants haul the eggs directly to the track and unload in the car. The buyer pays cash for the produce. He loads the car, which is then closed tight, locked, and sent to the produce house (Ravenswood), where it arrives the following day. It is unloaded immediately upon arrival. An old freight car is generally used for this purpose. The eggs are candled at the produce house before shipping to Pittsburgh. The poultry is kept in the basement of the produce house where it is fed and watered until Saturday afternoon.

Produce Dealers.

The produce dealers, four of whom make a practice of candling eggs, are practically the only dealers that have an idea of the quality of the eggs they handle. Of 74 dealers, 7 grade eggs and 4 candle eggs. The others handle eggs without attempting to determine quality. The dealers who candle are located at Ravenswood (2), Sandyville, and Long Bottom, Ohio.

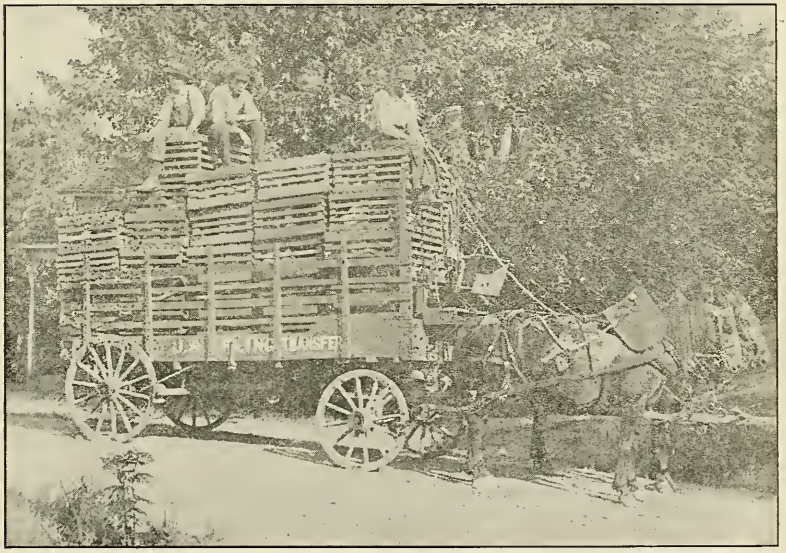
At Ravenswood, which is the concentrating point of the bulk of Jackson County eggs, the eggs are candled by means of electric candlers. One produce house (Beegle) has installed the candling device recommended by the Food Research Laboratory of the United States Bureau of Chemistry. The method of candling consists of holding the egg in front of a circle of light and giving it a slight turn. The contents are visible and when the turn is given, the yolk moves around in such a manner that the operator can definitely determine the quality of the egg. Young men do the candling. The eggs are graded into firsts, seconds and rots.

A "first" is a sound, medium or large egg, with clear contents, showing little or no effect of heat and with a small air space indicating freshness.

A "second" is a small, dirty or cracked egg, or one whose contents show the effect of heat and age. "Heavy floaters" and "watery" eggs are classed with seconds.

A "rot" is an egg showing the presence of blood or indications that incubation or decomposition has started.

The cases are opened, the eggs candled, repacked in the same cases and nailed shut. During the summer and fall months second-hand cases are used exclusively. These cases often become weakened from continuous use and result in



One week's shipment of chickens by one produce dealer of Ravenswood.

occasional broken eggs. Inasmuch as the Pittsburgh market accepts the eggs in these cases and will not pay more for new cases, the dealers are obliged to pack them in this manner.

After being candled, the cases are marked on the outside with the grade and stacked in the produce house. On Saturday afternoon the eggs are loaded directly into the refrigerator car. This car is iced in Parkersburg, so that when it arrives in Ravenswood it is thoroughly chilled. If, after loading the car with the warm eggs the temperature is dangerously high, the car may be re-iced in Parkersburg

en route to Pittsburgh. One refrigerator car is used by the two dealers at Ravenswood.

Quality of Eggs.

The two dealers at Ravenswood, who handle the majority of eggs shipped from Jackson County, candle all eggs from June 15 to September 15. From September to June, the quality of the eggs is such that candling is unnecessary. The following partial candling report of the two dealers shows average conditions:

H. E. Beegle ..... July 4 to Aug. 22.
No. 1, ... 41,460 doz.
No. 2, ... 5,160 doz.
Rots, ... 2,610 doz.
R. L. Varner ..... June 20 to Aug. 15.
No. 1 and 2.... 34,954 doz.
Rots, ... 1,816 doz.

The following list of customers of R. L. Varner gives an idea of the losses from rotten eggs. Period from June 20 to August 15:

Dealer Town	Method of Transportation	Receipts Dozens	Rots Dozens
Baker and Baker, Sandyville,...	Railroad	2,130	260½
Burke and Carney, Ripley,.....	Railroad	1,020	88
Hickman and Curry, Sandyville,	Railroad	1,020	46½
Reedy Produce Co., Reedy.....	Railroad	5,550	358
C. E. Mason, Leroy,.....	Railroad	4,740	157½
Hutchinson & Batten, Duncan,..	Railroad	5,610	260
Sam Utt, Meadowdale,.....	Railroad	300	16
C. & J. Carmichael, Silverton,..	Railroad	1,725	38
G. W. Harpold, Cottageville,....	Railroad	1,680	52½
Mason & Kettle, Garfield,.....	Haul & Railroad	2,700	147½
G. L. Knapp, Rock Castle,.....	Haul & Railroad	1,200	69½
Duke, Limestone Ridge,.....	Haul & Railroad	3,315	116
J. W. Miller, Odaville,.....	Haul & Railroad	1,620	84½
R. R. Pickens, Hemlock,.....	Haul	300	10
McBride, Nesselroad, ...	Haul	3,030	111½
		34,954	1,816

5.2% rotten eggs.
94.8% marketable eggs.

Both dealers show 5.2% loss from rotten eggs.

Handling Live Poultry.

The handling of live poultry is comparatively simple. All poultry in Jackson County is handled alive. Upon being received at the produce house, the fowls are weighed, paid for and turned loose in the basement. Here they are fed and watered until Saturday. They are not fed Saturday morning. In the afternoon they are caught and put in crates and given a liberal feeding of limestone grit. They eat readily of this grit, thereby adding considerable to their weight. They are also given some water. Late in the afternoon the crates are loaded in a ventilated car. This car is attached to the refrigerator car and accompanies it to Pittsburgh.

Ultimate Market.

Pittsburgh receives practically all the poultry and eggs produced in Jackson County. This is due to the fact that it is the nearest large city and can be reached directly by the Baltimore and Ohio Railroad. The cars leave Ravenswood late Saturday evening and are on track in the B. & O. freight yards, Pittsburgh, late Sunday evening. All the cars of poultry and eggs are placed together on the poultry siding. This siding consists of two tracks with a paved street between. The dealers open their own cars and usually stack the poultry outside the car. The buyers drive around, picking out coops wherever they choose. The eggs are not removed from the cars until sold. All goods are sold on one week's time. Poultry is all sold by the coop, eggs by the case. The buyers are largely Jewish merchants and butchers. They will usually pay more for the produce than can be obtained from the wholesalers. This is particularly true of the poorer grades. There is so much low grade produce in the Jackson County shipments that it is almost imperative to deal with this class of buyers during the summer and fall months. During the spring months the dealers can sell the eggs to a wider market as the quality is much better. This method of doing business requires the attendance of each dealer at his car in Pittsburgh every Monday morning. The dealers return to Ravenswood Monday evening. The cars are returned Friday.

Improvement of Marketing Conditions.

There is considerable room for improvement of the marketing methods of dealers in Jackson County. The first step in the improvement must necessarily begin with the farmer. As indicated in the first part of the report, the size and quality of the eggs produced are not in keeping with the importance of the county as an egg producing county. The following recommendations, if put into practice, will benefit the industry:

1. Improve the farm flock by careful breeding of egg-producing breeds and the elimination of inferior blood.

2. Produce infertile eggs during the summer months. In order to bring this about, an educational campaign during the winter and spring would be necessary. The produce dealers will co-operate to the extent of paying the same for cocks as for hens on a certain day to be specified as "Rooster Day."

3. Market eggs at least once a week, and preferably twice a week during the summer months.

Country merchants can also contribute largely toward the improvement of eggs:

1. By purchasing eggs according to quality and refusing to pay for rotten eggs. In order to do this the co-operation of every merchant in the county must be secured. It would mean that the merchant would have to candle the eggs as he receives them. A state law to this effect is desirable.

2. By providing a special place in which to store the eggs from the time received in the store until hauled to the shipping point or market.

3. By the use of a covered spring wagon, or if a springless wagon is used for hauling the eggs, liberal quantities of straw should be placed beneath the egg cases.

4. By using greater care in the selection of cases and eliminating cases that are noticeably weak.

The produce dealer can encourage the production of better eggs by:

1. Buying eggs on the "loss off" basis.

2. By paying a premium of 1 cent a dozen on even color, No. 1, eggs.

3. By furnishing better cases to the country stores.

4. By encouraging the keeping of pure-bred poultry, with a premium for live fowls of the general purpose breeds.

Price of Eggs as Obtained by Different Farmers in Jackson County.

Date 1913	C. D. Rice (54) Ravenswood	J. A. Cole (15) **N. Y. City	Date 1913	C. D. Rice (54) Ravenswood	J. A. Cole (15) **N. Y. City
Jan. 4	25c	30c	July 5	18c	19c
11	25c	28c	12	18c	20c
18	25c	26c	19	18c	20c
25	23c	24c	26	18c	20c
Feb. 1	22c	24c	Aug. 2	18c	20c
8	22c	26c	9	18c	20c
15	22c	23c	15	18c	21c
22	20c	20c	23	18c	23c
Mar. 1	19c	20c	30	18c	25c
8	19c	19c	Sep. 6	24c	26c
15	17c	18c	13	25c	27c
22	16c	18c	20	25c	28c
29	16c	16c	27	28c	29c
Apr. 4	15c	16c	Oct. 4	28c	30c
12	15c	16c	11	28c	30c
19	15c	16c	18	30c	32c
26	16c	18c	25	30c	35c
May 3	15c	18c	Nov. 1	32c	38c
10	16c	19c	8	40c	40c
17	16c	19c	15	40c	40c
24	18c	19c	22	45c	40c
31	18c	19c	29	45c	40c
June 7	18c	19c	Dec. 6	40c	40c
14	18c	18c	13	40c	40c
21	18c	19c	20	30c	37c
28	18c	19c	27	30c	37c

** The prices for N. Y. City and the prices for Ravenswood are net and are comparable.

RECOMMENDATIONS FOR POULTRY KEEPERS OF JACKSON COUNTY AND OTHER COUNTIES SIMILARLY LOCATED.

Stock.

The Single Comb White Leghorn is the breed and variety best adapted to the general farms of Jackson County and other counties similarly located. It has several distinct advantages. It is easy to breed true to color, it matures rapidly, it is the most economical producer of eggs and makes as marketable a broiler as any breed. The Leghorn is a good forager and because of its size consumes only two-thirds as much feed as the larger breeds.

The best general purpose breeds are the Rhode Island Red, Plymouth Rock and Wyandotte. These breeds make excellent roasters and are easily fattened for market. For the farmer who desires to raise chicks by the natural method these breeds are the most satisfactory.

There is no sound reason why the farmers of Jackson County should select for utility purposes any breeds other than those mentioned. Much can be accomplished by co-operation in breeding, through the exchange of stock, and this is only possible in communities where the majority of farmers favor one or two breeds to the exclusion of all others.

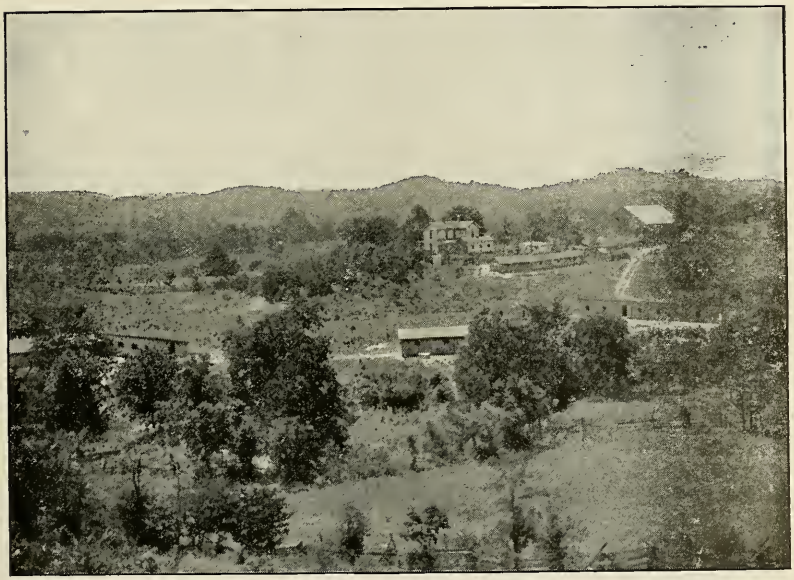
Houses.

Good stock must be properly housed. Locate the poultry house on well drained, porous soil, so that the floor in the house will not be damp and cold. Select a southern exposure on elevated ground. An orchard makes an ideal location for the poultry house as the trees afford necessary shade and the fowls devour injurious insects.

Construct a house that has proved successful in the community. The West Virginia open-front laying house, the shed roof open-front house or the gable roof house with straw loft are adapted to farm conditions. The essential points in a well constructed house are:

1. A tight roof.
2. The north, east and west sides perfectly tight.

3. Windows in the south side only.
   1 sq. ft. glass to each 20 sq. ft. floor space.
   1 sq. ft. cloth or open space to each 10 sq. ft. floor space.
   (Cloth or glass windows open during the day except during inclement weather.)
4. Interior walls whitewashed.
5. Ample perch room. Nests filled with clean straw. One nest to every five hens.
6. A deep litter of straw upon a substantial dry floor.



General view of the poultry farm of Mr. O. M. Stone, Cottageville, W. Va. The largest and most profitable poultry farm in Jackson County.

Management.

The farm flock should receive the same care and consideration accorded the balance of the livestock on the farm. Regularity in feeding, occasional cleaning and disinfecting, and selection of the breeding stock are important factors in the profitableness of the flock. Careful selection for vigor and vitality should be practiced from the day the chick is hatched until the pullet begins to lay. Select the best individuals for breeding purposes and mate these with the best

male obtainable and improvement will be possible. Breeding from the entire flock will not result in marked improvement, regardless of the superiority of the male birds. If the farmers in a certain community will keep the same breed, the products from that community will be more uniform in quality and will command a higher price.

Produce only infertile eggs after the hatching is completed. Remove the males from the flock and confine them, or kill them if they will not be needed the following year. The losses attributed to decomposition of fertile eggs amounts to thousands of dollars in Jackson County alone.

Keep a sufficiently large flock of fowls (100-300) so that they will be worthy of attention and the product worth marketing at regular intervals. Aim to renew one-third to one-half the flock each year and sell the old hens.

Keep a record of the eggs laid and feed consumed. Know for a certainty whether the hens are as profitable as the cows and pigs or more so.

Provide range for the fowls during the warmer months but keep them confined when there is snow on the ground or the weather is cold and damp.

Feeding Chicks.

Do not feed baby chicks until they are 48 hours old. Then, feed sparingly and often, at first, five times a day and later, three times a day. Feed sour milk in either a clean pan or in a moist mash. A variety of foods is better than a single grain ration. Cracked corn, cracked wheat, sifted ground oats, wheat bran, wheat middlings, sifted meat scraps and corn meal are the most digestible as well as economical chick foods. These are easily obtained. Locally prepared scratch feeds for chicks are more desirable than "shipped-in" feeds. The following ration may serve as a guide in arranging a ration to meet local conditions:

A GOOD CHICK RATION.

(Modified Cornell Ration.)

Mixture No. 1	Mixture No. 2
8 lbs. sifted ground oats.	3 lbs. wheat bran.
8 lbs. bread crumbs.	3 lbs. wheat middlings.

2 lbs. sifted meat scrap, (best grade).
1 lb. bone meal.

Mixture No. 3

Any good commercial chick feed.

3 lbs. corn meal.
3 lbs. ground oats (sifted).
3 lbs. meat scrap (best).
1 lb. bone meal.

Mixture No. 4

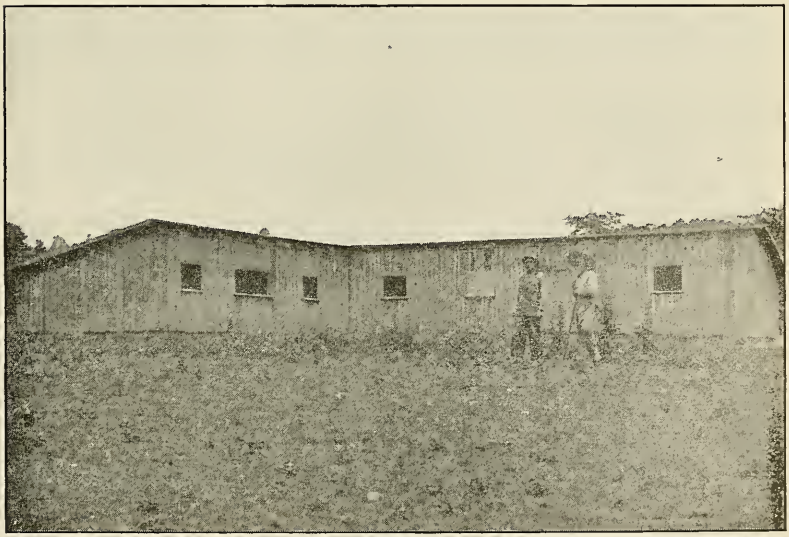
3 lbs. whole wheat.
3 lbs. cracked corn.

METHOD OF FEEDING.

First Week. Mixture No. 1 moistened with clabbered milk fed 4 or 5 times a day. Mixture No. 3 (dry) always available with a little of No. 2 and some finely shredded tender green food sprinkled over the top.

One to Four Weeks. Mixture No. 2 in litter twice a day until chicks can eat mixture No. 4. Mixture No. 3 (dry) always available and moistened twice a day with clabbered milk. Green food as above.

Four Weeks to Maturity. Gradually abolish the moist mash. Mixture No. 3 always available. Mixture No. 4 three times a day in litter. Clabbered milk to drink



Laying house No. 3 on Mr. Stone's poultry farm. Shapped like thte letter T.

Feeding Laying Hens.

Laying hens should be fed grains, mash, grit, succulent food and water.

The grain part of the ration should consist of two or more of the following:—corn, wheat, oats, barley, buckwheat and

sunflower seed. Feed the grain morning and evening in a deep litter.

The dry mash should be composed of corn meal, wheat bran and wheat middlings supplemented by one or more of the following:—Linseed oil meal, gluten feed, meat scraps, or alfalfa meal. Salt and charcoal should also be fed in limited quantities. Feed the dry mash in an open hopper.

Skimmed milk is one of the best meat foods for poultry and can be fed in place of meat scraps. It is best fed sour.

Crushed oyster shells and a good hard grit should be kept before the fowls in hoppers at all times.

When confined or when the pasture is poor, the fowls should receive succulent food once a day.

A large pan of water which is not allowed to become empty will be an important factor in maintaining egg production.

The following ration although simple is complete and will serve as a guide in making others:

Grain	Dry Mash
10 lbs. Corn.	¼ lb. Charcoal.
10 lbs. Wheat.	3 lbs. Corn meal.
5 lbs. Oats.	4 lbs. Bran.
	5 lbs. Middlings.
	1 lb. Ground Oats (sifted)
	4 lbs. Meat Scraps.—1 tablespoonful salt.
25	17¼

(In place of meat scraps, the fowls may be fed all the skimmed milk they will drink.)

Feed the grain in the litter, twice a day, morning and evening. Feed the mash in a hopper which is open all day for the lighter breeds and only during the afternoon for the heavier breeds. Green food once a day. Grit and shell in hoppers.

Diseases of Fowls.

The losses from disease in Jackson and other counties similarly located amount to thousands of dollars annually. Unsanitary surroundings are responsible for 90% of this loss which is preventable. Any contagious disease such as Cholera, Roup or Blackhead (of turkeys) can be checked by the following measures:

First, Isolate the sick birds and burn all dead ones.

Second, Drive all hens out of the poultry house and, after cleaning thoroughly, disinfect it with a 5% solution of creolin or zenoleum.

Third, Sprinkle lime on the ground about the poultry house for a distance of 100 feet in each direction.

Fourth, Put a deep litter of straw in the poultry house and feed the hens only in the house.

Fifth, Observe the hens closely at feeding time and immediately remove any hen that shows signs of cold in the head, diarrhoea, droppings bright emerald green, emaciation, very dark comb, or a desire to keep apart from the rest of the flock.

As a general rule, it does not pay to doctor sick birds and it is much better practice to prevent disease than to cure it. Regularity in cleaning and occasional disinfecting coupled with close observation will enable one to keep the flock reasonably free from disease. Good ventilation and sunshine are essential to health. Do not permit lice and mites to get a foothold among the fowls or in the house. Throw boiling water over the perches and nests, following this with a spray or wash of 5% zenoleum or creolin. Whitewash the interior of the house. Once or twice a year, pen up the entire flock and dust each fowl individually with a good lice powder.

An effective home-made lice powder can be made as follows:—Place 2½ pounds of plaster of Paris in a pan. Then mix together ¾ pint of gasoline and ¼ pint of cresol, or 95% crude carbolic acid. Stir the plaster of Paris while you add the liquid. When thoroughly mixed, the material is rather crumbly. It should then be dried and sifted and is ready for use. Keep in a tight can or jar.

Marketing.

Eggs and poultry should be uniform in quality in order to command the highest market price. Live poultry should be sold at the time when the market pays best. Broilers should be marketed before July 1, and old hens should not be held until November. The fowls should be well fattened before being sent to market. Confine them in a small pen and feed a mixture of 6 lbs. corn meal, 4 lbs. wheat middlings and 6

quarts of sour milk. Fowls of different breeds should not be shipped in the same coop.

Eggs should be marketed regularly, once a week in cool weather and twice a week in the summer months.

Haul the eggs to market in a spring wagon and keep them covered.

Use the small, cracked and dirty eggs at home.

Produce eggs of uniform color and, above all, produce infertile eggs.

One Method of Marketing Eggs.

LIST OF BREEDERS OF PURE-BRED POULTRY.

White Leghorn Breeders.

W. L. Ball, Ravenswood, also White Wyandottes.
J. W. Bibbee, Millwood, R. 2. also White Rocks
Harry Blackburn, Ravenswood, R. 2.
W F. Blackburn, Ravenswood, R. 2.
J. M. Boso, Murraysville, R. 1.
Eph. Brown, Ravenswood.
C. R. Browning, Silverton.
G. W. Casto, Evans, also Brown Leghorns.
A. L. Carmichael, Liverpool.
J. A. Cole, Ravenswood.
Joseph Carter, Cottageville, also Barred Rocks.
Charles Davis, Millwood, R. 1.
J. G. Fox, Ravenswood, R. 1.
J. J. Fall, Silverton.
G. B. Floyd, Ravenswood, R. 1.
Mrs. W. I. Gibbs, Ravenswood, R. 1.
S. J. Hudson, Ravenswood, R. 1.
T. J. Hartley, Liverpool.
Thomas Haselton, Murraysville, R. 1.
Dan Howell, Lone Cedar.
Chester Hager, Ravenswood, R. 2. also brown Leghorns.
J. P. Kay, Millwood, R. 1.
Warren Kays, Millwood, R. 1.
Will Lane, Murraysville, R. 1.
E. M. McGlothlin, Ravenswood, R. 2.
W. A. McMurray, Silverton.
Mrs. L. B. McGraw, Ravenswood, R. 3.
Henry Mahon, Cottageville, R. 2.
F. A. Morgan, Ravenswood, R. 1.
C. D. Rice, Ravenswood, R. 1.
J. Q. Rowley, Ravenswood, R. 2.
T. Sheppard, Muses Bottom.
H. Swain, Murraysville, R. 1, also Brown Leghorns.
U. S. Smith, Ravenswood, R. 1.
O. M. Stone, Cottageville
Isaac Starkey, Ravenswood, R. 1.
H. O. Taylor, Cottageville
J. J. Webb, Millwood, R. 2.

Barred Plymouth Rock Breeders.

Mrs. Andrew Click, Millwood.
Mrs. Dawkins, Sandyville, R. 2., Also Brown Leghorns.
Kenner Hutchinson, Meadowdale.
W. H. Melhorn, Murraysville, R. 1.
W. H. McKay, Willow Grove.
T. H. Snider, Ravenswood, R. 1.
B. F. Sheppard, Willow Grove.
J. W. Williamson, Willow Grove.

Brown Leghorn Breeders.

Mrs. W. L. Beckwith, Cottageville, R. 2., also Buff Leghorns.
J. J. Higgins, Silverton.
R. A. Hunt, Evans
C. W. Owens, Sandyville.
J. B. Riggs, Sandyville.
David Swain, Lone Cedar.

Rhode Island Red Breeders.

Mrs. U. R. Carmichael, Ravenswood.
E. H. Flinn, Ravenswood.
R. S. Michaels, Murraysville, R. 1.
Mrs. Martha Skeene, Kenna.
W. J. Thomas, Evans.

Black Leghorn Breeder.

D. O. Curry, Crow Summit.

Buff Leghorn Breeder.

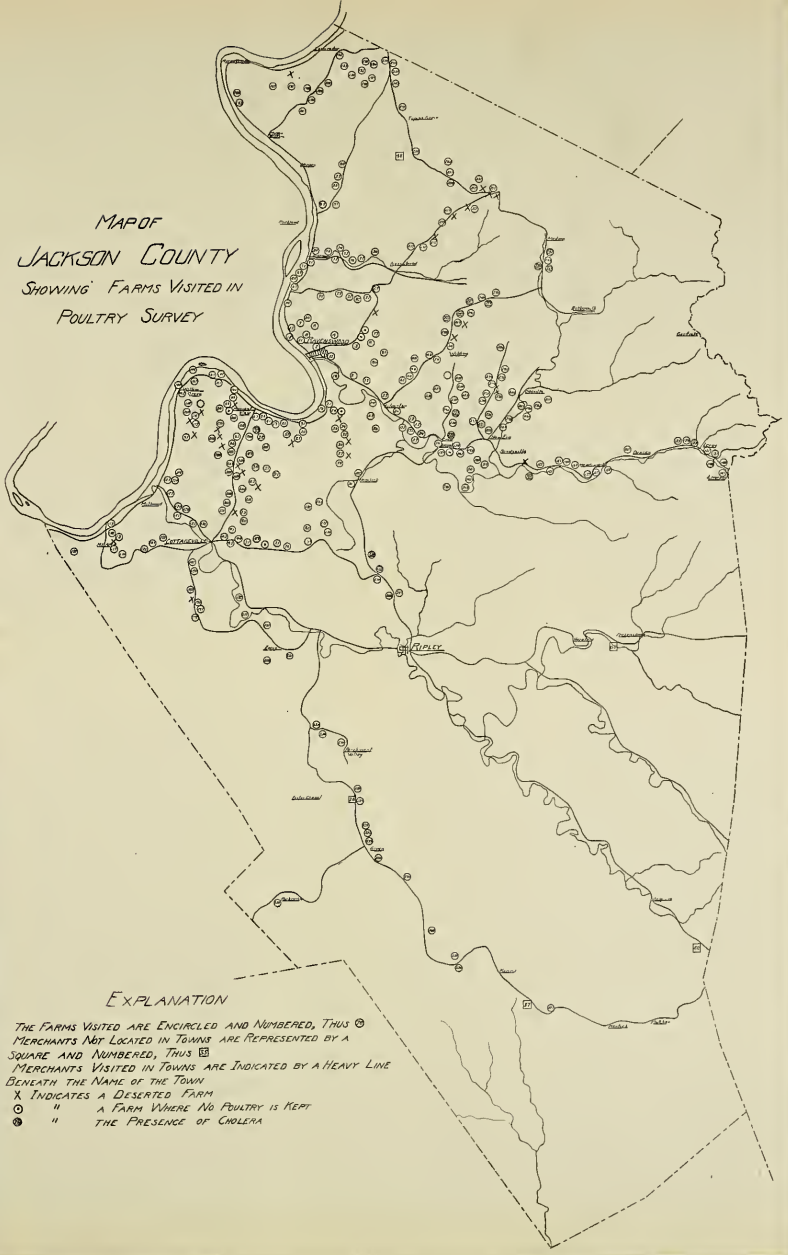
O. R. Lloyd, Cottageville, R. 2.

Buff Orpington and Buff Plymouth Rock Breeder.

C. W. Parsons, Millwood

White and Barred Plymouth Rock Breeder.

Everett Smith, Ravenswood, R. 3.


MAP OF
JACKSON COUNTY
SHOWING FARMS VISITED IN
POULTRY SURVEY
TIPLEY
EXPLANATION
THE FARMS VISITED ARE ENCIRCLED AND NUMBERED, THUS ⑯
MERCHANTS NOT LOCATED IN TOWNS ARE REPRESENTED BY A
SQUARE AND NUMBERED, THUS ⑫
MERCHANTS VISITED IN TOWNS ARE INDICATED BY A HEAVY LINE
BENEATH THE NAME OF THE TOWN
X INDICATES A DESERTED FARM
⊙ " A FARM WHERE NO POULTRY IS KEPT
⑯ " THE PRESENCE OF CHOLERA