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MICHAEL K. BOYER.

PROFITABLE POULTRY FARMING

Author of

{ "All About Broilers and Market Poultry Generally,"
Poultry Journalist and Editor. ~~~~~

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Profitable Poultry Farming.

BY MICHAEL K. BOYER.

AUTHOR OF "ALL ABOUT BROILERS AND MARKET POULTRY
GENERALLY;" POULTRY JOURNALIST AND EDITOR.

Price, 25 Cents.

HAMMONTON, N. J.
PUBLISHED AND FOR SALE BY THE AUTHOR.
1893.

PREFACE.

It is customary, in writing a book, to have a preface, and that is the only excuse I have for giving one. I have written this work for the purpose of assisting the novice who has taken on the "hen fever," and would like practical advice with the enthusiasm left off. If I succeed in my mission I am satisfied. I oppose gigantic ventures, as I see no money in the "thousand-hen farms." Some have succeeded, but many failed. I see no profit in a business that must depend upon hired help. This little work is written with the intention of showing how money can be made by SMALL FARMS, and the advantages in making poultry an adjunct with some other income. I give a number of experiences and plans, and let the reader do the selecting. To more properly conduct the work, I have visited large duck farms on Long Island, and prominent poultry establishments in different parts of the country; so that the instructions as given in

the book are those from my own personal experience, coupled with what I have seen in my rounds.

The advertising pages have been carefully edited, and I feel proud of the success of my efforts in that direction. Everything mentioned in the book is advertised by reliable parties, so that the reader will at once know where to apply.

In short, I have endeavored from beginning to end to give the reader a complete guide, and in this particular it will be seen that the well filled advertising pages are not the least important to the book.

Hoping that I have not labored in vain, I beg
leave to remain

THE AUTHOR.

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CHAPTER I.

THE GROWTH OF PRACTICAL POULTRY FARMING—THE REQUIREMENTS—THE BEST WAY TO BEGIN—THE VALUE OF CROSSES—THE USE OF THE THOROUGH-BRED—HOW TO HAVE HARDY AND PROSPEROUS STOCK.

Each year marks the wonderful growth of market poultry. The day has passed when the poultry farmer is to be sneered at. We have come to a time when it is necessary to raise fowls and eggs for table use, and the poultry world has acknowledged the fact, inasmuch as she has given way to it. A poultry paper today is incomplete without a series of practical articles; a show is not finished without a premium for the practical cause, and the new fowl is of no use unless it can be proven that for utility it is recommended. Egg farms, broiler farms, and general poultry farms, are springing up all over the country, while the once exclusive fancy ranches are diminishing. Today some of the largest fancy farms are resorting to market methods to get rid of their surplus eggs and fowls, and thus make ends meet. The farmer has at last found that poultry does pay, and he is making eggs and table birds an important branch of his business. The farm that ten years ago had one common flock of hens of all ages, today is ornamented with a comfortable house and a well selected flock. The one-grain diet has been dropped, and a regular bill-of-fare has been ordered, and the man that never had any eggs to sell in winter now brings them fresh to the door of the citizen. There are nine chances for success in market poultry where there is but one to the fancier.

There is nothing gilt-edged about the work, but there is a satisfaction of knowing that the demand is greater than the supply, and the man must be wide awake who wishes to cater to the markets. The work has grown to such an extent that epicures have become critics, and the best goods are eagerly sought after. It is just as important for the market man to send choice stock to the stalls, as it is for the fancier to ship high-scoring birds abroad. Eggs must be clean and attractive looking; fowls must be plump and choice—none others need apply.

But there is one thing left, and that is recognition from the state experimental stations and the Agricultural Department at Washington. All the poultry papers and books, all the poultry editors and writers, in influence are but as a drop in the bucket to the value that these powerful agencies can give to the cause by prompt recognition. Why all these bulletins on insects and fertilizers when the American hen is forgotten? Why all about the diseases of hogs, when the fowls of the country need medical skill? Why all about the market value of beef and pork when the cry is for eggs and chicken flesh? It is a sad mistake—this snubbing the American hen. Importing eggs every year when the money could be placed in the pockets of our farmers! It is hoped that something will soon be done.

But not every man is adapted for poultry work. There is no question about it. Is a man with the tastes and abilities for a profession cut out to steer a plow? Is the man that is a born farmer in a position to take up physics? We all have our talents. Yet I believe there are more men possessed with the talents for poultry than any other occupation. What are those requirements?

Well, first, he must be wide awake. Drones never succeed with hens. Lazy people only meet with failure. Tired people can not make hens lay. The man must have his wits about him. He must study the egg problem as

the broker watches the rise and fall in stocks. He must be ever on the alert for improvements.

Second. He must have pluck. "Pluck" seems a large word for the hen business, but it certainly is not too large for the risks to run. I say "risks," for I believe that every business has its risks, and the man who can meet reverses and hold on has pluck, and without it he is sure to fail. A man with pluck is energetic; he is not afraid to work.

Third. He must be experienced. Of course, I do not expect he must know it all when he starts. If such would be the case there would be no poultry farms. But he must be well booked, and then he must put his learning to a practical test.

Fourth. He must have a fondness for the work. He must be in love with it. If a man takes an interest in what he is doing he will do it all the better. But if he enters a scheme for the money that is in it, ten chances to one he will fail.

Fifth. He must be financially equipped. You can not build houses on promissory notes. You can not buy land on credit. You can not get hens on time—and you can not feed them on wind—and expect the first year or two to get out of debt. You should have enough cash to pay as you go, and until the farm begins to yield her fruits. Do not expect to embark on nothing. You can not in any other business; why should you expect it of poultry farming?

Recapitulation.—You must be up to the times. Never get the "blues." Be first a student, and then a practical worker. You must love the work, and you must have money. If you do not possess all these let your fingers off the industry.

As a rule the successful poultry farms are not made in a day. They are the outcome from small beginnings. By starting small there is a chance of gaining such experience that the books can not give. It is not reasonable to sup-

pose that book knowledge alone will afford a man a chance to carry on successful poultry farming, any more than it could be expected in any other line of business. In this particular the experience of A. F. Hunter, the editor of *Farm Poultry*, is worthy of note. The first year he found that he had but a profit of \$1.01, although in the account was an increase of the flock from nothing to about seventy-five laying pullets; "and," he adds, "if that increase were duly considered we made a good profit on our twenty-two fowls bought at the start." So it will be seen that Mr. Hunter started with but twenty-two fowls. From that small beginning he has crept to nearly three hundred, and the past year made a clear profit of \$1,349.38. I shall give more about this later on in the book.

In my opinion, the best way to start an egg farm is to get one or two hundred eggs of the heavy layers, like the Minorcas, Leghorns, etc., and either hatch these with hens (in most localities sitting hens can be purchased from farmers) or have some one put them in his incubator. This would be giving a nice flock of pullets, and which, if properly fed, would be brought into lay by fall. Each year the flocks could be enlarged, and a corresponding number of houses put up. Thus gradually while the experience was gained the number of birds and houses would also increase. There is much to learn, and the only way to gain the knowledge is to thus "creep before you walk."

As many of my readers know, I favor the cross-bred bird in poultry farming. I do not favor mongrelism, but I have by experience been taught to value the bird born from first crosses. I do not favor them so much for eggs as for the ideal points they give for table use. By judicious crossing it is possible to put quick growth and fine bodies on the offspring. Besides, the unity of two pure bloods gives a hardier bird than is so often the case in strictly pure bloods. I favor the cross-bred fowl on the same line that

the dairyman prefers the grade in cattle and the farmer the cross in hogs. I can get better results. But I have no use for cross-bred males.

I favor the thoroughbred for the making of these crosses, and when I want special yards for eggs only I keep none but strictly thoroughbred stock. I do not agree with some writers that certain crosses will give better layers than thoroughbreds. It has never yet been so in my experience, and I have tried the very crosses these parties recommended. But I do believe that by uniting a heavy laying breed with one noted for its grand carcass and excellent table qualities, we can get a general purpose fowl that will do remarkable work in both eggs and meat. I have found that to be the case by crossing the Black Minorca on the Black Langshan, and by crossing the Houdan on the Brahmas and Cochins. I have likewise had early layers and big bodies in the cross of Plymouth Rock and Langshan.

I am repeatedly asked which of the heavy layers I have found the best for egg farming. My preference is the Minorca, as they are layers of large eggs, and almost as prolific as the Leghorns. On my place the relative qualities of the heavy layers have been as follows: Minorcas, Spanish, Anconas, White Leghorns, Brown Leghorns, Andalusians, and Hamburgs. I classify, first, according to the size of the egg; second, to the quantity of eggs laid; and, third, to the hardiness of the fowls. Of the list there is no doubt but that the records of the Hamburgs will be as good as any in the list, but they are as a breed more delicate, and that I believe is one reason why they are not more generally kept.

I think outcrossing has much to do in keeping the stock healthy. It infuses new blood that is most valuable to them, and which seems to give renewed strength to the offspring. I have tried the plan of improving a flock of

Minorcas in this respect; or, I should have said, of making a *new* strain of Minorcas. It takes several years to do the work, but when once performed it gives excellent results. Take a flock of Black Langshans and cross a Black Minorca cock on them. The next year pick out those that show the best Minorca heads, and again cross a Minorca on them. Follow up the same plan the following year, each time using a new male bird, and in about three years of such work there will be a flock of fine bodies and grand constitutions, and the best poultry judges in the country could not tell that an outcross had ever been made. It may not be strictly "straight goods" for the fancy to follow, but as I am dealing with the market people, and as hardy and vigorous stock are of the first importance, the advice may be of some value. Other breeds can be dealt with in the same way. A flock of Pekin ducks can be greatly improved by outcrossing with Aylesbury. As inbreeding is one of the prime causes of ill health, it can readily be seen that this outcrossing is a safeguard.

CHAPTER II.

THE SUCCESS OF ARTIFICIAL INCUBATION—RUNNING AN
INCUBATOR AND BROODER ON THE FARM—BUILDING
AN INCUBATOR CELLAR—COLONIZING THE CHICKS—
R. G. WHITE'S METHODS OF FEEDING CHICKS.

The idea seems to be prevalent with some people that the incubator and brooder were invented to take the place of the old hen. In other words, that this machinery would in time entirely supplant the hen for hatching purposes, and that they could do better work than the old-time "Biddy." Such an idea is false. I do not believe that the abilities of the hen—in her season—can be beaten. I believe there are some matters about her way of doing business that invention can not grasp. But by the invention of artificial methods we are accomplishing something which seems entirely contrary to nature—the bringing out of chicks at a season of the year when there is not the least desire in the hen to become broody. Furthermore, we can now conduct the business on a wholesale plan, bringing out thousands in a season, where heretofore we had to content ourselves with a few hundred. The success of these inventions has boomed the broiler market, and we now, with an endless string of incubators and brooders, are unable to keep pace with the demand for frying chickens. It is a good idea to run the incubators and hens. Start the incubators as soon in the fall as possible, and keep on until the hens become broody, when the incubators can be stopped and the hens given the right of way.

Some poultry raisers run the incubators the entire year, also setting all the hens that wish to undertake the work.

The time is coming when every farm will run an incubator and brooder. Probably I should have said that every *enterprising* farmer will adopt the artificial methods in raising poultry. Above all people the farmer is best adapted for the business, and why he should be so slow at taking hold of the work I am puzzled to know. There is no fortune in sight for those who run the chicken business, but there is enough money in it to make it a most desirable farm crop. Buy a small incubator and brooder to start with, and after all the details are learned increase the capacity. In a few years quite a plant can thus be secured and an income added to the farm that will give a better margin than any other crop. I could point to a farm on which chickens and cows are kept. The product of both are sold. Milk, butter, eggs, and broilers go to market, and the eggs and broilers bring in two dollars to the milk and butter one. It requires less help to run the poultry branch than it does the dairy.

A cellar is of prime importance for running an incubator. It can be made any size. Dig out the ground and wall up with stone or brick, the same as you would for a dwelling, only let the wall extend above the surface of the ground two or three feet. On top of this wall place your roof. The floor of the cellar should be cemented. Incubators run in cellars keep a more uniform temperature and require less care.

I am not a friend to the large brooding system. I rather favor colonies of chicks. Having seen and experienced both plans, I am in favor of the latter. It gives a better chance for the youngsters to grow. I like to see these individual brooders scattered about as you would place the coops of the hen and her young. I don't want any fence. It is wonderful how soon each chick will know

its house. In the colonization plan there is less danger of a spread of disease, and the chicks always look brighter and grow better than when confined to close quarters. Harry Phillips, who has the largest brooding house in Hammonton, says if he had to do it over again he would have none other than the chicks in colonies. In the large houses it costs as much for fuel for a single pen as for a whole house full. In the colony plan, your cost is what your product makes it.

The following interview appeared in the *Farm-Poultry*, Boston, Massachusetts, and was part of the broiler articles I wrote for that excellent paper:

I made a visit to the broiler farm of Richard G. White, on Fairview Street, and when I left it I felt that I had a good share of practical knowledge for *Farm-Poultry* readers. Mr. White is a plain, hard-working man. He is in the fruit business in summer and the broiler business in winter, and he speaks very encouragingly of his occupation. He has no secrets, and does not flinch one bit in answering any and all queries that may be asked him. Last year he had a capacity for one thousand chicks, but this year he has increased to three thousand.

His system of brooding last year was the Packard bottom heat method; but this year he will use both the top and bottom heat, to fully satisfy himself which is best. Mr. White has a novel way of testing the heat in his brooders. He places a thermometer on a stand about two and a half inches from the floor, as he thinks this gives the best average temperature. He begins the heat at eighty degrees. This is the lowest temperature I have yet seen in starting young chicks, but the appearance of Mr. White's chicks would indicate that it is not a bit too low. There is more danger in getting the heat too high. One writer in particular uses one hundred degrees, but as I have never seen his chicks I am unable to say if they do well at such a heat.

However, Mr. White's product gives living testimony to a lower temperature.

In the matter of feeding Mr. White is also different from the rest of the broiler men of Hammonton. He makes a regular johnny-cake, but leaves out the vinegar and soda which a number of writers suggest, and this cake he feeds the youngsters until they are one week old. It might also be stated that he puts Animal Meal in the cake instead of the usual prepared meat. He likes the meal for several reasons, but principally on account of its fineness—the chicks are bound to eat it. After the first week he drops the johnny-cake and feeds a mash composed of equal parts of corn meal, bran, and middlings, with the usual amount of meat scraps. Now, as at this stage of the chick's growth bowel trouble is apt to show itself, he keeps a close watch, and regulates it with the middlings—lessening the quantity of middlings if the chicks become costive and increasing the amount if they have looseness of the bowels. After trying this method for several years, he says he finds no trouble in keeping the chicks in the right condition. He feeds wheat and cracked corn only as a relish. Several times during the day, between meals, he throws several handfuls of the grain to them, thus getting them to exercise in scratching and running about. Grit is constantly kept before them. He uses small, sharp gravel, and likes it better than oyster shells for the purpose. When the young chicks are put in the brooder a pan of ground charcoal is placed before them. After several days, if it is noticed that they do not eat any of it, charcoal is put in their cake and afterward in their mashes. "They must have charcoal," said Mr. White, "and I believe my success in raising chickens is principally due to the charcoal." But Mr. White does not stop here. He scatters oyster shell lime on the brooders every morning after he cleans up. They pick at it with a relish. And a pan of sifted coal

ashes is put fresh before them every morning. It serves a double purpose: both as a dust bath and a treat in various substances which they will pick out of the ashes.

"Had you good success last year in raising chickens?" I asked Mr. White.

"Very good," he replied. "My capacity was small, but out of fifteen hundred that I hatched, I only lost fifty, the balance I marketed, which my books will show," and Mr. White made an effort to get his books to verify his statement, but we assured him that was not necessary, as appearances at his place were enough to indicate prosperity.

"Why do not you raise your own eggs?" I asked.

"Well, I have two reasons. First, I do not have much faith in egg farms unless they can have a free range. I have not the ground to keep enough fowls on such a plan. So I do the next best thing by buying up my eggs from small flocks, and from birds that have my personal supervision. That is, they are mated and composed of such bloods as will give good broilers."

I tried to show him that the hens would be profitable in limited ranges if properly fed and taken care of. But Mr. White's opinion did not coincide with mine, and as he had such an excellent arrangement to get eggs, I did not use any further argument on that score.

The size of the "mother" (brooder) in Mr. White's pens is three feet square; the brooder floor is four feet six inches; the yard inside the pen is four feet six inches by five feet; and the outside yard is four feet six inches by sixteen feet. One of these pens he reserves for a hospital in which are put cripples, a dozen or more of which are apt to show themselves every season. The house of last year contained ten pens, and in which nine of them (one being counted out for the aforesaid hospital) Mr. White was compelled to crowd fifteen hundred chicks.

"Was that not a dangerous move?" I asked.

"Decidedly so," he replied, "but I could not help it. I had contracted for the eggs, had to take them, and, of course, was compelled to put them in the incubators. The eggs were remarkably fertile, and my incubators never worked better. Out came the chicks and I had to care for them."

Considering the crowded condition of Mr. White's house last year, and the remarkable success he had in raising his chicks, I deem his method of feeding worthy of attention. He, however, will make one change this year, and that will be in the feed the first week. Instead of the johnny cake he will make a cake from the recipe used by Mr. Howe, and which I have given in a former article in *Farm-Poultry*. Only instead of the meat scraps he will use Animal Meal, as he likes that better for young chicks.

"What do you consider the proper number of chicks for your brooders, to avoid crowding?" I asked.

"I always aim," he said, "to have not over 150 in the brooder the first week, although 200 could be managed. When they run to three-quarters of a pound I thin down to one hundred. After that as a chance offers I take a few out, until only seventy-five are in by the time they reach the marketable size."

"Have you ever tried summer hatching?" I asked.

"About two years ago I gave it a trial, and met with very good success, never getting less than twenty-five cents a pound, and, in most cases, thirty cents. As there was not much cost in raising them, I felt highly encouraged in the results. It was my intention to keep on hatching last summer, but putting up the new buildings and other work prevented me from doing so, but I shall keep right ahead from now on."

"Well, now, Mr. White," I concluded, "what is your candid opinion of the chicken business in all its branches, compared with farm work?"

"I have tried farming in all its branches, and have been fairly successful, but for capital invested, and the amount of real solid work, I can make more money out of the chicken business than I can out of any and all the other branches of farm life. I am not an enthusiast, but practical results tell; but I find broiler raising the most profitable of all the branches in the chicken business."

CHAPTER III.

POULTRY AS AN ADJUNCT—A BUTTER AND EGG FARM—
SIZE OF HEN YARDS FOR SUCCESS—BUILDING HEN
HOUSES FOR COMFORT AS WELL AS PROFIT—FEED-
ING FOR EGGS—MR. HUNTER'S METHODS OF EGG
FARMING.

Poultry pays best as an adjunct. There is no question about that. During the past few years I have been studying all the branches more than I ever did, and I have yet to find one that could be depended upon as an exclusive branch. The farmer can make poultry the most successful crop on his farm, if he will only give the matter the proper care. But where are hens so much neglected as on the average farm? The hogs, cows, and all the crops grown have the proper attention given them, but when it comes to the fowls they seem of such little importance that they are seldom noticed. But when you find a farmer that does take care of his hens, you find one that will say they are profitable. Combine either egg raising or chicken growing with any other income and the one helps the other.

One of the most successful farmers I know of combines butter making with egg raising. He keeps a dozen Jersey cows and three hundred early pullets. He keeps one breeding yard, and from that each year he hatches his pullets, getting them out in April. They are of the Single Comb Brown Leghorn breed. They begin laying in the fall, and they furnish eggs right through the winter and

early spring, just at the time when eggs are high. His Jersey cows give him a good lot of rich milk, which he turns into a very good article of butter.

Both butter and eggs being staple articles there is no trouble about finding a ready cash sale. I might add this man has a retail custom. Twice a week he goes out with his wagon to a nearby city and delivers to private custom. He furnishes the best of butter and strictly fresh eggs, and that is why he carries the best trade.

I know of another man who conducts the business on a different scale. He, too, keeps poultry and cows. But he uses his eggs for broilers and roasting fowls, and he sells the milk. He makes a good income. It is hard to say which of the two methods pays the best. In labor they are about equally divided. The one saves labor by marketing his eggs and not turning them into broilers, while the other saves labor by selling his milk and not turning it into butter.

There seems to be a general impression that unless a fowl has the run of a whole farm it will not thrive. It is not acreage that a fowl wants so much as the quality of the soil upon which it is turned. A yard 50x100 feet, sown to grass, can not be entirely destroyed by a pen of eleven fowls, and this pasture will afford them as much if not more benefit than a farm of weeds would. I get more eggs from my fowls—and they are confined to yards—than my neighbors do who allow their poultry to go where they please. I more fully explain this later on in this chapter.

I am so often asked to give plans for a model poultry house. What is meant by these writers for a model house I can not understand. They may have reference to architecture more than comfort. I am the reverse. In my estimation a model house is one regardless of outside appearance, perfect on the interior. I want the house warm in winter and cool in summer. I want it well ventilated.

I want it kept perfectly clean. For styles and other arrangements I would advise the reader to send for the book entitled, "Lee's Ideas," advertised in this work. Mr. Lee's ideas are practical, and no poultryman should fail to buy a copy.

I herewith give an article I wrote for the Germantown (Pa.) *Telegraph*, on the subject of eggs in winter, which gives my methods, and which I think will be of some value:

"Green food and meat are acknowledged to be the proper feed, along with the mashes and grain, for eggs in winter. To get eggs when the prices are high is not such a great trick as some people would suppose; and the fact that eggs are scarce during the cold months does not show that it is impossible for the hens to lay, but that their keepers are not so well booked in the science. If hens and pullets receive the proper food and attention they will lay even though the snow be a foot deep on the ground. This may sound like a big undertaking, but I can assure my readers that my hens are now in full lay, and that last winter they gave us eggs right along, and even through the spring and summer, up to the moulting season. I think I can lay some claims to the methods I have adopted. As I hold no secrets, I will give my plan: Such scraps as potato parings, turnip parings, cabbage leaves, and what refuse there is generally in the vegetable line, I cook each day, and add to the soft feed in the morning. The last thing I do at night is to take equal parts of bran, middlings, ground oats, and cornmeal, and scald them in buckets, leaving them steam until morning, when they and the vegetables are thoroughly mixed and fed to the fowls in a crumbly state. Twice a week I put a little condition powder in the mixture, to stimulate the egg organs. (I use Sheridan's Powder, as with me it has given the best results.) And every other morning I add a pint of beef scraps to a buck-

etful of the mixture. A pinch of salt is daily added to a bucket of feed to give it the proper seasoning. At noon I bury wheat in litter in the scratching pens, which at once puts the fowls to active work, and which they keep up, more or less, until supper time, when I give them a feed of oats. If the weather is very cold I give whole corn—not for eggs—but as a warmth to the body, as corn is slower in digestion. Fowls with full crops never freeze or mind the cold so readily. A cabbage head always hangs up in the hen house, and this not only gives them good greens, but affords considerable exercise in their efforts to pick off pieces. All my fowls are in yards; about in a space of one hundred by fifty feet, where they are kept the entire year, excepting that on alternate days each yard is allowed the run of about two acres sown in rye. During the entire winter they are thus given green food, and when in spring the rye has grown high enough to be mowed down, I cut it off and plow up the land and sow wheat, and when that has become too tall I follow with oats. Then I begin over again with rye, and so on. Thus it will be readily seen that the fowls are always supplied with greens of some kind. Sharp grit and ground oyster shells are constantly before them, and I have the satisfaction of knowing that my fowls are continually in good health, and are profitable.

“So much for feed. But there are other conditions that must not be neglected, and which go far towards maintaining good health and profit. Each pen is provided with a scratching pen; here the birds can busy themselves during rainy weather or when the snow is on the ground. They also seek this shelter during heavy wind storms, and to these pens I give the credit of warding off much sickness. Exposure has caused more disease among fowls than anything else, unless it be filth, and I would never think of erecting a hen house without having a scratching pen adjoining it. My houses are also warm. They are built of

matched boards, and lined with heavy lining paper. The roofs are shingled. I take great care in keeping the houses clean, never allowing the manure to accumulate, and as I have a platform erected below each row of roosts the droppings are readily caught. After I have gathered the manure I scatter air slacked lime over the platform. Every now and then I pour kerosene over the perches, and thus I keep down the stench so common in many poultry houses on the farm, and my fowls are comparatively free from lice. This is a great point in poultry keeping. A lousy hen can never be a profitable laying hen, and very often disease of some sort or other is doctored for, when in reality nothing more is wrong than the life being gradually sucked out of the fowls by lice. And fresh water in perfectly clean fountains must be given. I keep the fountains sweet by occasionally scalding them out with hot water to which is added a small lump of washing soda about the size of a hazlenut.

“So much for general care; now for the stock. I have mentioned feed first because I deem it the most important. I followed with general care because in my estimation it comes next. And the matter of stock is mentioned last, not that I consider it the least of them, but from the fact that it matters very little what breeds of fowls you keep so long as you give them the proper feed and care. By that I do not mean that one breed will do as well as another, for such a claim would not be reliable. We have breeds that are built for egg production, and we have breeds for meat. Just the same as we have a difference in the breeds of cows. But I do mean to say the best layers in the country will not respond to indifferent treatment. I knew a flock of Light Brahmas that laid more eggs in a season than a corresponding number of Brown Leghorns owned by another party. The reason was plain; the Brahma man knew how to make hens lay. Yet I would not advise any one to buy Brahmas for an egg farm. Minorcas, Leghorns, Andalusians,

Anconas, and Spanish are best adapted for that work, and if handled rightly produce large records. I have now special reference to egg farming, where the product is to be marketed. At present I have Black Minorcas and Brown and White Leghorns for eggs and these I hatch out in April and May, from which hatches I select the finest pullets for laying in the fall. I never keep hens after they are two years old, but depend principally upon my pullets and two-year old hens for my eggs. I find there is more money in fattening and marketing the two-year old fowls than to continue them in the yards with their records annually decreasing. Thus I have outlined my methods, and give them for what they are worth. I do not by any means wish to imply that they are perfect, but that they are so far doing well with me, I can assure those who are interested."

In connection with my methods as given above, it might be profitable to give those of Editor A. F. Hunter, of *Farm-Poultry*. The following extracts are taken from that journal:

"We can make a fowl pay us a net profit of \$2.50 to \$3 a year, and so can Mr. C. (or anybody else) who will go to work right. The whole secret lies in that oft repeated rule: 'Hatch the chicks in April, keep them growing so the pullets will lay by October, and then keep them laying.' There's no magic about it, no 'sleight of hand,' but that plain simple rule lived up to and *everything* made to bend to it or revolve around it. It doesn't do to let the hatching go till May or June because other work needs to be done. If other work runs up against the hatching season or chicken work so much the worse for the other work, for 'chickens have the right of way.' An important item in our creed is that the old stock be sold off each summer and pullets raised to take its place. By doing this the price received for the old stock swells the total receipts, as the pullets

cost nothing to raise—the cockerels hatched with them sell for enough to pay for the food of both themselves and the pullets.

“Five mornings in the week we feed a mash made up of about a third cooked vegetables mashed fine, or cut clover cooked by being brought to a boiling heat in water, an equal amount of boiling hot water added, a heaping teaspoonful of salt to a bucketful; a heaping teaspoonful of Sheridan’s Condition Powder two days, then cayenne one day, Condition Powder two days, then powdered charcoal one; and into this is stirred mixed-meal until the mash is as stiff as a strong arm can make it.

“This mixed-meal with us consists of one part each corn meal, fine middlings, bran, ground oats, and Animal Meal, a scoop or dipper of each being dipped in turn into a bag and poured from the bag into the meal barrel from which it is dipped into the mash. We consider the thorough mixing of these meals a considerable factor in making a good mash.

“When we have cut fresh bone in abundance we omit the Animal Meal from the mixture; ordinarily we have only about half-rations of cut bone to go round, so use, regularly, half the amount of Animal Meal to make up the deficiency.

“The foundation of the mash is the cooked vegetables, which may be refuse potatoes, beets, carrots, turnips, onions (anything in the vegetable line), and into the pot goes the table waste, potato parings, etc., and the potato, squash, and apple parings from the kitchen. The potatoes, or beets, etc., are washed before putting on to cook, and the mess when boiled is sweet and savory.

“This mash, our readers will notice, contains a great variety of food elements, and this *variety* is a quite important factor. A fowl needs a variety of food to supply her various physical needs, and give her a surplus out of which to make eggs, and this ‘variety’ of foods we believe we can

best attain in the manner described above. An additional advantage is that a tonic or stimulant can be added if desired; we sometimes substitute a teaspoonful of tincture of iron for the condiment, and sometimes add a handful of linseed meal or cottonseed meal; but the latter are somewhat fattening (as well as stimulating), and those who feed their fowls *well* must beware of too fattening foods.

“This morning mash is fed in troughs large enough so that *all* of the fifteen fowls in a pen can get about it at one time; another important factor, because if the trough is small some of the birds have to stand back and wait for second table, and when their chance does come there's nothing left for them. With a trough 4 feet long by 6 inches wide, there is plenty of room, and if a biddy is driven away from one place she runs around and goes to eating at another, and thus all get a share.

“Our fowls have exercise ground in summer in yards 125 x 12 feet, which gives them a grass-run (with growing grass always in the growing season), and they will take ample exercise in pleasant weather. To keep them out of doors the noon feed of whole barley (or buckwheat) and night feed (before sunset) of what is scattered upon a graveled space immediately in front of the houses. Each family of fifteen has a pen within the house 12 feet square, or 144 square feet of floor-space, which gives about 10 square feet per fowl. The floor is the earth, covered about six inches deep with screened gravel. On the gravel the grain is scattered in stormy weather in spring, summer and early fall, when we want the birds to stay in-doors. When cold weather approaches, exercise must be stimulated, and we cover the pen-floors three or four inches deep with chopped meadow-hay, or chopped straw, into which the grain is scattered, and the biddies have to dig it out. Some poultrymen use dry leaves for pen-litter; chaff from a threshing mill would be most excellent (nothing could be bet-

ter), and we have found one or two cases where common cornstalks were used. With us straw or meadow-hay is most easily obtained, and we use that. *What* the scratching material is is of far less importance than that the scratching material is there.

“Whole wheat is *the best* grain-food for fowls, whole barley is the next best, and buckwheat next. We make barley or buckwheat the noon feed five days in the week, and wheat the night feed five or six days in the week. We do not make the mash on Sunday, because we want to reduce the work to its lowest terms on that day, doing no more than the regular feedings and waterings, and collecting the eggs.

“Monday we feed oats (or barley), wheat, whole corn.

“Tuesday we feed mash, barley (or buckwheat), wheat.

“Wednesday we feed mash, cut bone, wheat.

“Thursday we feed oats, barley, wheat (or corn.)

“Friday we feed mash, barley, wheat.

“Saturday we feed mash, cut bone, wheat.

“Sunday we feed mash, barley (or buckwheat), wheat.

“Two feeds of cut bone each week, one or two of whole oats, and one or two of whole corn (according to the season), give variety to our ration, and to that is added whole cabbages hung in the pens in cold weather to tempt picking them to get green food; or turnips, or beets, or carrots are split in halves and placed in pens to be picked in pieces and eaten.

“Ground oyster shells are always accessible, and fresh water, replenished three times a day (warm in winter), and the water-pans are carefully rinsed every day.

“One variation from this program we purpose making this winter, and that is a slightly lighter feed of mash in the morning, making it a breakfast rather than a full meal, and then scatter barley or buckwheat in the scratching material about mid forenoon (and the last feed mid

afternoon), to induce even more scratching exercise. To search and scratch for seeds, grains, insects, etc., is the fowl's normal method of feeding, and the nearer we approximate to nature's way the better; hence the greatest possible amount of exercise should be compelled."

CHAPTER IV.

HOW TO TEST EGGS—POULTRY AND FRUIT—BROILERS AND BERRIES—HOW THE SCHEME WORKS IN HAMMONTON—SPECIALTIES IN VEGETABLES—A GENERAL POULTRY FARM.

Eggs should always be tested on the seventh and fourteenth days, whether they are set in an incubator or under the hen. By testing you make room, and can use the eggs that will not hatch for feeding purposes. I break them up raw in the morning mash, and believe they are beneficial to the fowls. Of course, too many of them might not be well. I generally count about one egg to two fowls.

The illustrations in this issue show how the testing is done, how the germ looks on the seventh day, and the appearance of the egg when there is sufficient moisture. The illustrations are accurate, and were kindly loaned by the Prairie State Incubator Company. It will be seen that the egg on the seventh day presents a "regular spider," and proves that the germ is strong, and under the proper conditions will hatch a strong chick. If any of the germs die, it can be seen by a distinct red line in the form of a circle, about the size of a silver dollar. These, as well as those perfectly clear, should be removed at once, which

will prevent the foul odor in the machine, so common when the eggs are not tested. Each day of incubation the eggs become darker and darker, until the fourteenth day the chick can be seen to move. If any should die after the first test, they will be noticed to float when the eggs is turned, and no veins will be seen.

By referring to the illustration of two eggs, lines will be seen with figures on the side of the egg to show the size of the air cell on the days indicated. The smallest egg represents a hen's egg, and the figures show the size of the air cell on the fifth, tenth, fifteenth and nineteenth days. The larger egg is that of a duck, and the air cell is shown on the first, seventh, thirteenth, twenty and twenty-sixth days. In their book of instruction, the Prairie State Company says "to increase the size of air cells, open the ventilators and run with little or no water. To retard development, give full pan surface of water, and close ventilators, but not enough to interfere with ventilation. The egg tester will show the size of the air cell at any time."

Poultry and fruit make a good combination, and those who follow it generally keep the poultry for eggs only, and plant the trees in among the fowls. That it is profitable to both fowls and trees, to have this combination, I will make a few selections:

The *Poultry Guide* says: "We have sixteen apple trees, now seven years old, standing in and around our poultry yards. Some of these, standing directly in the run of the fowls, have had as many apples as any five of the trees on the outside. This is conclusive evidence that the one is beneficial to the other. . . . Some have been literally hanging with nice apples, and so heavily laden that we were compelled to keep the limbs well propped to keep them from breaking down. . . . We at the same time get the needed shade while we get a beautiful supply of delicious fruit."

The *Mirror and Farmer* says: "Those engaged in fruit growing do not keep many animals, hence are not so busy in the winter season as the stock raisers. There is no reason why fruit growers should not make poultry a specialty in winter. An orchard is certainly not injured by fowls, and if observation is made, it will be found that the hens

are of assistance in many ways. The broiler raisers of New Jersey pay no attention to poultry from April to October, but after the fruit is harvested they are as busy as bees hatching chicks with incubators. But for the winter pursuit of broiler raising, they would be idle for five months in the year. The farms are small, ranging from five to ten acres, yet the fruit growers make larger profits than are secured on some farms of a hundred or more acres. They raise fruit in the summer and poultry in the winter."

The *American Cultivator* says: "If the hen house is built in the orchard the fowls will do good work in keeping down the insect pests that destroy every year so much of our finest fruit. They do this both by scratching about the trees and by eating the imperfect fruit that falls, thus destroying the grub before it is time to burrow in the ground."

The *Poultryman* says: "Your birds need shade as well as sun. Set out a few plum-trees in the yard and the hens will destroy the grub and enrich the soil, so that by little trouble and expense you can raise some of the most delicious fruit."

The *Fanciers' Journal* says: "Poultry raising and fruit culture go hand in hand, and may be combined on the same ground. An orchard is much benefited by allowing fowls free range, as the crop of harmful insects is kept down."

Farm-Poultry says: "Fruit is a considerable source of income on the farm of A. C. Hawkins, Lancaster, Massachusetts, he having set several thousand plum-trees in his poultry yards, where they furnish needed shade from the hot summer sun and draw nourishment for tremendous crops of this luscious fruit, of which he shipped over one thousand bushels to market last season."

George J. Nissly, proprietor of the Michigan Poultry Farm, Saline, Michigan, says: "We combine fruit grow-

ing with our poultry business, and find that, if properly managed, no two branches of business go more profitably and nicely together than these. Each helps the other, and we virtually get two crops from the same ground. In our yards we plant plum, pear, and quince-trees; while on our grounds used for growing young stock we also grow large quantities of raspberries, blackberries, grapes, and strawberries. These fruit grounds make a splendid place for the chicks, it only being necessary to exclude them from the strawberry grounds a short time during the ripening season."

In the town of Hammonton, nearly every broiler raiser is a fruit grower. Strawberries, raspberries, and blackberries are raised in large quantities during the summer and broilers in the winter. It is a profitable combination with the Hammontonians, and it would be hard to get them to depart from their plan.

Some do not make a specialty of fruit, but engage in vegetable growing to some extent. Specialties are often used, such as the growing of onions, lima beans, and sweet potatoes. All these notions may be profitable to the man who wishes to make up a combination he may like best.

The question has been asked me, What is a general poultry farm? Answers to that question may differ. To my idea the best general poultry farm would be one that would combine egg and fruit growing with the raising of broilers, roasters, and ducklings. Keep the April and May pullets for eggs, grow the fruits in the poultry runs, raise the broilers when the prices of eggs decline, sell off annually all the two year old fowls for roasters, and hatch the ducklings during their season. By a little management in this plan a steady income could be secured, and there would be a big profit. I merely give these combination hints to show what can be done; the reader must make his own decisions, and in his energies lie all the means of success.

CHAPTER V.

THE ATLANTIC DUCK FARM — DUCK CULTURE FOR PROFIT—
SIZE OF HOUSES—HOW THE BREEDING DUCKS ARE
FED—HOW THE DUCKLINGS ARE FED—HOW TO DRESS
DUCKLINGS FOR MARKET—OTHER USEFUL POINTS.

Last fall I paid a visit to the duck farms of Long Island, which I consider one of the most profitable trips I ever made, inasmuch as I witnessed the industry in successful operation. The following description I wrote for *Farm-Poultry*, of Boston, Massachusetts, and to which journal I am indebted for its reproduction here:

“When, in 1858, the late W. W. Hallock inaugurated duck culture at Speonk, Long Island, beginning on a small scale, little did he expect that from his small beginning such large proportions would be assumed as are now apparent on the present Atlantic Farm. The venture was at first made as an experiment, and hens employed to do the hatching and brooding, but the plant grew steadily. Later on, Mr. Hallock’s son-in-law, Mr. S. B. Wilcox, was taken into partnership, and Mr. A. J. Hallock (the present proprietor) was installed in the position of ‘feeder.’ After the son-in-law withdrew from the firm to start a farm of his own, the son (Mr. A. J. Hallock) was taken in, and the firm name changed to W. W. Hallock & Son. Under this management the business prospered and the capacity increased each year. Last year the senior member of the

firm died, and the business passed into the hands of the present owner, who is doing his very best to make it second to no other duck farm in the United States. There is a world of enterprise in Mr. Hallock, who, although a young man yet, possesses a wonderful business ability, which, combined with the thorough knowledge of the business, fits him admirably for the work. One thousand breeding ducks are kept, and these are the cream selected from between twenty and twenty-five thousand ducklings hatched. Ducks weighing twelve pounds each are common, while some reach more than that weight. A number were picked up at random, and weighed and examined, showing that Mr. Hallock's aim to have the best specimens, both regarding weight and other characteristics, has been well carried out. In order to secure birds of such qualities, no particular strains have been adopted, but the choicest selections have, from time to time, been made from breeders all over the country.

"Each pen is supplied with large ponds of water, and it is a beautiful sight to watch the birds darting in the water, flapping their wings, and perform all sorts of interesting antics. Notwithstanding all former claims that ducks do as well without bathing water as with it, the fact was clearly demonstrated on this visit, that bathing water stimulates exercise and keeps them in a healthier and more desirable condition. Some of the farms on the Island do not adopt the water plan, but a careful comparison showed that those birds kept in the natural state have a great advantage, to say nothing about the labor saved in supplying them with water to drink. Mr. Hallock also informed your correspondent that by having bathing water supplied each pen, a less number of drakes are necessary in a flock. From seven to nine ducks are given a drake in the beginning of the season, and as the season draws to a close as many as twelve are allowed. Another

point in the argument is that ducks supplied with bathing water save the process of washing before dressing for market. As the feathers must be perfectly clean before they can be marketed, it is necessary to carefully wash all land ducks before they are dressed, which consumes considerable time, and which can not be performed as thoroughly as when the birds are given an opportunity of doing the work themselves. Aside from these advantages, however, Mr. Hallock thinks there is no difference regarding weights, that ducks confined to land can be made as heavy as those given water, and *vice versa*.

"The houses for the breeding-pens measure 13x13 feet, and the runs 26x125 feet, of which 26x36 feet is water. In each of these pens about thirty-five ducks are kept. The floors of the houses are earth, bedded with salt hay. An elevated railway is being constructed for the purpose of conveying the feed to the birds. This will be the means of saving much labor.

"The incubator cellar is certainly the most systematic arrangement I ever saw. It is built of brick, and the earth banked up on the sides and ends. It measures 24x50 feet, and will hold thirty-three large sized machines. The floor is cemented. In order to make the building still more serviceable for incubating, the walls are double, with a four-inch space between them. The ventilation of the building is very good, and consists of flues on each end of the room.

"Three large brooding houses are employed, each with a capacity of two thousand. Top heat is furnished by hot water pipes, the Spence heaters being used.

"The breeding ducks are fed a mixture made up as follows: Four pails cornmeal, two pails bran, one pail middlings, one pail oats, and one pail wheat. These are mixed with two bushels chopped grass or greens—chopped clover hay being substituted when green stuff is scarce.

The grass used is what is known as eel or creek grass, taken from the bottoms of the creeks and brought ashore on floats. It is chopped up fine when fed. One hundred and thirty-five eggs a year Mr. Hallock claims as an average in his flocks, and these show remarkable fertility, which speaks well for his system of feeding.

"For ducklings the food for first week is as follows: Equal parts cornmeal, middlings, and crackers or stale bread, and green food. A small handful of sand is mixed with every quart of the food. Bread soaked with milk is sometimes given for a change. No milk is given to drink, as they get it in their feathers, which makes them sticky and easily pulled out. The second week the following composition is given: Four parts cornmeal, two parts bran, two parts middlings, one part beef scraps, and about the same quantity of sand as is given the first week. The above is mixed with about one-third of the quantity of green stuff. At about six weeks of age the ducklings are put into the fattening pens and fed two-thirds meal, and the balance one-third of bran, middlings, and greens. About one-seventh or one-eighth the amount of meat scraps. The ducklings are marketed when about five pounds in weight. Last year forty-five cents per pound was realized in April, and as the season advanced the price decreased, until in August it reached seventeen cents. The loss is variously estimated at from five to ten per cent.

"The picking is done mostly by women. As soon as the birds are stabbed they are placed in a convenient place and scalded, the water for that purpose being just brought to a boil. The plan of operation is so minutely described by G. A. McFetridge, in his book on poultry, that I will make a few extracts from that, by his permission. Mr. McFetridge has charge of the incubators on the Atlantic Farm:

"Two posts are planted in the ground about ten feet apart. The posts are either mortised or a notch sawed in

them near the top, five feet from the ground. A rail is then spiked in these notches, and strings fastened to the rail with loops to hold the feet of the ducks. As many pegs are driven in the ground underneath the rail to correspond with the number of strings. To these are fastened a short piece of wire, the top of which is bent in the shape of a hook, which is fastened into the duck's nose. This prevents the duck from swinging its head around and soiling its feathers with blood.

“In dressing, the breast feathers are removed as soon as possible. The feathers on the head, a few on the neck, the flights in the wings, and the tail feathers are left on. Duck feathers bring about forty cents per pound, which about pays for the picking.’

“In addition to the one thousand breeding ducks that Mr. Hallock keeps, he also has about five hundred laying hens. Outside of the duck season he utilizes the eggs in the incubators for broilers, and when duck eggs claim the machines the eggs are marketed. As the duck season only opens in February, and closes about the latter part of September, the broilers can be gotten out and marketed at the very season when prices are at their best. Mr. Hallock's combination is certainly a good one. Eggs for hatching are also sold from this farm, and Mr. Hallock informed me that the past season he disposed of twenty thousand eggs from his advertisement in *Farm-Poultry*.

“Aside from the above farm there are a score or more of prominent ranches in this immediate section of the island. Mr. Hallock's is the largest, and that of E. O. Wilcox probably comes next. Mr. Wilcox's house for his breeders is two stories high. On the first floors are pens 13x17 feet. On the second floor are kept hens for eggs.

“On the farm of S. B. Wilcox, at Centre Moriches, are kept about six hundred breeders, and twenty-three incubators are run during the season. A noticeable feature in

the picker house on this farm is a running stream of ice cold water, which is valuable in plumping the birds after they are dressed.

"The Pekin duck is exclusively kept on the Island. In the early days of the business the Muscovy was the only available breed, but since the Pekin has been introduced into this country the Muscovy has been crowded out. A man with four hundred Pekins makes a good living, and several instances were shown where even such a small flock as one hundred ducks give a handsome return. Of course, there is considerable work attached to the business, but when properly managed the Long Islanders claim there is more profit in duck culture than broiler raising.

"Of incubators the most prominent are the Prairie State, Monarch, Thermostatic, and Pineland. For brooding, the Spence, Gurney, and Bramhall heaters are the most used. The partitions in the brooding houses are less expensive than in broiler houses, as a one-foot board uprighted is sufficient to separate each pen.

"The experience gleaned from this visit, coupled with what Mr. James Rankin has repeatedly assured us, shows that duck culture as an industry can be made a most profitable one. And if the branches of practical farming, duck culture, broiler and egg raising are combined, there is a good living assured, providing the man and the accommodations are equal. If proper care is given the work the loss is considerably less than with broilers—the latter runs at first from forty to fifty per cent, while the former is from five to ten per cent."

REVIEW OF OUR ADVERTISERS.

MANY USEFUL THINGS INVENTED, AND WHICH ARE RELIABLE GOODS FROM RELIABLE PARTIES.

The large amount of advertising in this work should not be a drawback, for the object of the work is to supply the reader with all the information that could be given in this narrow scope. Besides knowing what to do, the beginner wishes to know where he can buy what he needs, and I am proud to say that I have gathered about me a good array of reliable goods from reliable parties. The comments I herewith give are honest, and I know my readers will be dealt with in a business manner.

Sheridan's Condition Powder is no new preparation. It has been on the market for years, and is an excellent article. I should not think of being without it, and the longer I use it the better do I like it. For years I have been opposed to condition powders, and while I still believe there are more worthless preparations on the market than good ones, I have become convinced that for keeping fowls in a healthy and laying condition, Sheridan's Powder stands alone.

I am now making experiments with the Invincible Incubator, and I regret that I am unable to give the result in this notice, but this much I can say, I am more than pleased with what experience I have had with the machine, and shall gladly give my opinion to all inquirers after the season is over. The brooder advertised by the same party is a practical one.

I am also making experiments with the Monitor Incubator. A visitor at my place the other day remarked that he

has been running the machine for some time, and he only knows of one improvement in it, and that is, an attachment to fill the lamp with oil, and he believed the machine would do all the work itself. It works to a nicety, keeps uniform heat, and gives excellent results.

The Pineland Incubator is substantially built, and is practical all the way through. I know of grand hatches made by it, and have never heard of a complaint against it. The Pineland Brooders are unexcelled. I use a complete Pineland system on my farm, and would not do without it. For brooding ducks I find it better than any brooder I ever used.

Geo. H. Stahl, the manufacturer of the Excelsior Incubator, has greatly improved his machine this season, and it is now made of the very best parts of thirty-eight different patents, among them being the Thermostatic, Perfect Hatcher, Halstead Centennial, Andrews, White Mountain, and Success; together with the best parts of the old Excelsior.

The Hammonton Incubators and Brooders are plain but practical. There are large broiler farms in Hammonton that will use no other. The machines are well made, and do excellent work. By these incubators and brooders, the broiler business was successfully started here.

The "Peep O'Day" brooder is a common sense mother for the young chicks, and as it comes highly endorsed by Editor Hunter there is very little left for me to say in its favor.

Jas. E. Warner, who advertises incubator supplies, is reliable.

The Chelton Brooder is cheap and good. It is annually gaining a great many friends.

The Plymouth Incubator is considered one of the best machines made in New England. No incubator manufactured enjoys a better reputation than this one does, and the sales are annually increasing.

The duck eggs shipped from the Atlantic Farm are remarkably fertile, and the fact that over twenty thousand were sold last year is an excellent recommendation. (See Chapter V.)

I desire to call special attention to the advertisement of the Sunlight Porous Carbon Wick. This wick is a great boon to those running incubators and brooders. They need no trimming, and emit no smoke, two desirable quali-

ties. Giving a steady flame, they will keep up the heat far better than the ordinary wick and last twenty times as long. I use them, and would not be without them.

For permanent fencing nothing equals the picket fencing advertised by the Styron Fence Company. I use that style and find it durable, cheap and attractive.

For an absolutely safe lamp, and one that will give a perfectly even and uniform heat, I can certainly recommend the Hydro Safety Lamp, advertised in this book. No smoke nor soot are ever caused by it, as in other lamps, and this certainly is "another step toward perfection in the artificial hatching and rearing of poultry."

The preparations advertised by F. A. Mortimer are all that they are claimed to be. Mortimer's "Sure Shot" and "Chick Feed" are the two best articles I ever used.

The specialties advertised by W. H. Wigmore are all first class goods, and I can certainly recommend him, having always had pleasant and profitable business relations with him.

Peter Duryee & Co. are too well and favorably known to need much mention by me. The firm has been in business for years, and in all that time I have never heard of a single complaint against it.

Those who raise fruit with poultry, will find the fruit evaporator advertised in this issue to be of much service to them. It will pay to evaporate fruit. I have one of these evaporators in use, and find it very profitable.

Poultry supplies of all kinds are furnished by the Michigan Poultry Farm. No one need hesitate to send money to this farm, for the business standing, integrity and worth of the proprietor are beyond suspicion.

In starting a poultry farm, it is always best to start right. In this way much money is saved, and very little lost. The best way to begin is to seek the advice of an expert, and I take pleasure in recommending Mr. A. F. Hunter, the editor of *Farm-Poultry*, for such work. See his advertisement.

For good thoroughbred poultry write James E. Humphreys, whose advertisement appears in this book. Mr. Humphreys' prices are very low for the quality of stock.

Of commission houses, those of A. & M. Robbins, of New York, and F. S. Gibson, of Philadelphia, stand in front. Hammon-ton poultry and fruit raisers ship to both of them.

No one raising poultry should be without a Wilson Bone

Mill. They are cheap and good, and in use in the largest broiler establishments in Hammonton and elsewhere.

For reliable nurserymen, the firms of West Jersey Nursery Co., Wm. Parry and H. M. Whiting, are worthy of your patronage. They do a strictly honest business, and are reliable.

I am proud of the representation of American poultry publications to be found in the advertising pages. Undoubtly the papers and books advertised are the best to be found, and should be liberally advertised.

A VISIT TO THE PRAIRIE STATE FACTORY.

By special invitation from the company, I paid the home of the Famous Prairie State Incubator a visit. Homer City is pleasantly situated in Western Pennsylvania, not far from Pittsburg, and is about in the center for the incubator business, about equally convenient for shipments to both the east and the west.

The Prairie State was originally manufactured in Illinois, hence the name. After about one year on the market there the business was moved to its present home, being so centrally located, and right in the heart of the lumber region of Pennsylvania, where the company could secure all kinds of lumber used in the construction of their famous incubators and brooders. It is simply wonderful how this company has been pushing to the front, as they tell me when they first started in business in Homer City, one man, the original inventor and patentee, Mr. J. L. Nix, did all the work himself; built the machines, did the tinning work, also painted and boxed, ready to ship. Mr. A. F. Cooper, who was then manager of a large poultry farm in Homer, bought a half interest, and they commenced doing business under the name of "Prairie State Incubator Company." Mr. Cooper acted as traveling salesman, and he visited most all the states in the Union in order to show how the machines are constructed. Also showing the machines in the strongest competition in the show room, always coming out with the lion's share of the prizes. Although the machine has been but eight years on the market, it has become popular from the Atlantic to the Pacific. All the large broiler and duck farms use them.

On April 30, 1892, the old factory of the company was destroyed by fire, in which were lost, beside the building,

all the tools, stock on hand, and sixty-three machines, in all stages of construction. At the time of the fire the company had eighty orders on hand, and they at once notified the different parties about their loss, and the probability of having to wait some time before their orders could be filled, but not one order was countermanded.

The new factory is a substantial building, 32x104 feet, two stories, with a boiler house attached, 20x42 feet, in which is run a Carlin engine. The roof is made of steel, while the roofs of the other buildings are slate. The entire building is heated by steam, and lighted up by natural gas, the latter being brought a distance of sixteen miles. Twenty-six mechanics (not boys) are employed, and the works are compelled to run almost day and night, and still not able to work ahead of their orders.

The lumber for the manufacture of the machines is bought in the rough and sawed, after which it is put in a dry kiln, which contains the Sturtevant system complete. As everything is passed on trucks very little handling is done. The factory is replete with tin and plumbing shops, paint department, etc., so that every part of the machine is done right at home.

It was a pleasure to see the machines in the different stages of construction, and to see how thoroughly the work was performed. In order that the workmen will take the best of care, each one is required to put his initials on the part of the machine he makes, so that any mistakes may be traced. In the event of a machine being returned for some cause in the construction, the initials tell who made the mistake, and that party is compelled to rebuild it at his own expense. This insures a protection. In order that the machine may be as little affected by outside temperature as it is possible to get it, asbestos is placed on top of the tank, and then comes a filling of sawdust, over which is covered oiled paper, and then the outside case. This makes a double case, and is bound to hold the heat. The lamps are now placed at the end of the machines instead of the center, as was adopted in the old style. But with all these improvements the prices have been cut down ten dollars on each style. The sizes of incubators run from 50 to 520 egg capacity of the chick machines, while the duck machine, a new invention, is of 288 egg capacity. The latter costs \$62.00. The duck machine is built on the regular style, and has a nursery beneath. A screen

is placed over the ventilators to the nursery, to make it fly proof, for summer hatching. The brooders are all on the pipe top-heat system, and have expansion tanks. They can be bought in sections, if desired

In conclusion, I desire to say that this company is doing a large business, and is annually making great strides, and I certainly can recommend them and their machines, being personally acquainted with both. And I never saw such a collection of fine machinery, as planes, saws, molders, and labor-saving devices as this factory contains. *

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Yours,

O. F. FULLER.

The regulator did not vary but one degree during the whole hatch.

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Incubators and Brooders

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