

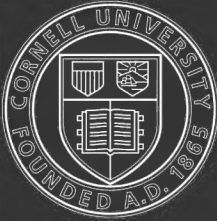
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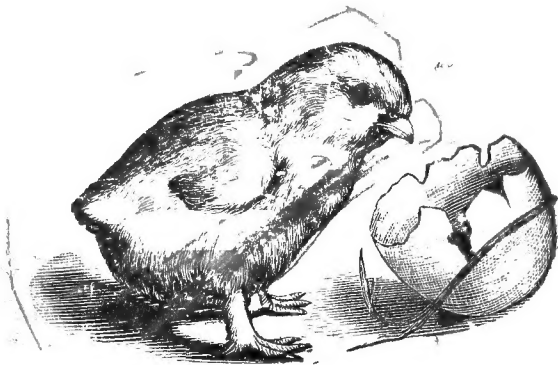
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CHROMO EDITION.

PRICE 50 CENTS.

RAISING
FOWLS AND EGGS
IN QUANTITY
FOR MARKET.

—
HOW TO DO IT.
—



WITH DESIGNS FOR FOWL-HOUSES, COOPS, RUNS, &c.

—
BY GEO. P. BURNHAM.

AUTHOR OF "DISEASES OF POULTRY," "SECRETS IN FOWL BREEDING," THE
"GAME FOWL," ETC.

ILLUSTRATED.

—
MELROSE, MASS.

1877.

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PART FOUR. CHROMO EDITION.



RAISING
FOWLS AND EGGS

IN QUANTITY

FOR MARKET.

HOW TO DO IT.



By GEO. P. BURNHAM.



WITH DRAWINGS OF ECONOMICAL

FOWL HOUSES, YARDS AND RUNS.



MELROSE, MASS.

1877.

P R E F A C E .

The numerous letters I have received from all quarters of the country latterly, urging me to prepare a book upon the subject which forms the topic of this present treatise — together with the fact that I have been applied to so frequently for similar information by parties whom I could not find time to reply to, individually, as I wished, are the reasons why I publish this little volume on “RAISING FOWLS AND EGGS IN QUANTITY, FOR MARKETING PURPOSES.”

The pages which follow will be found to embrace the paper I wrote a few years since at the request of the U. S. Commissioner of Agriculture, at Washington—and which appeared in the official Report of that Department, subsequently.

My chief object in putting forth this treatise at the present time is to conveniently and fully answer the scores of letters which constantly reach me, enquiring, “Does fowl-raising in the ordinary manner pay?” or “Can a man keep 500 or 1000 fowls of the common kinds to advantage, upon a single farm or estate? And if so, will you inform me *how it is done?*”

These queries I have now answered, in the accompanying book. The main article to which I have made reference above, has been carefully revised, though in substance it is very little changed; since it was the practical experience of the author at a time when he was experimenting largely, with a view to learning for himself what could be accomplished in this direction.

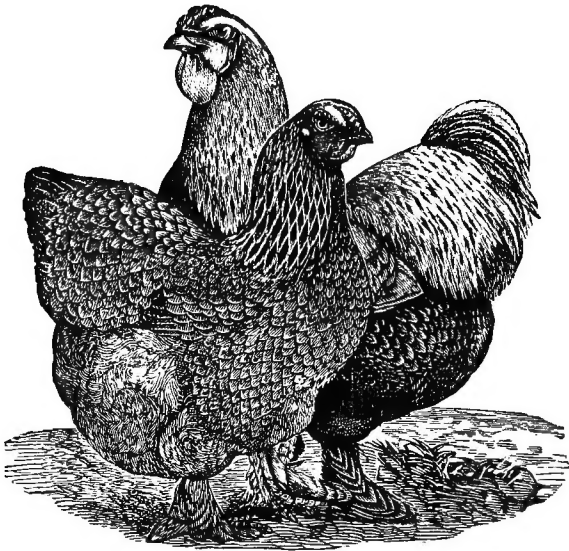
Innumerable instances could be cited where fowl-keeping on a lesser scale than this has proved profitable. The business may be made to pay in any quantity, if properly and judiciously conducted. But not otherwise. And I have endeavored in concise language and as briefly as I could, in these pages, to show the interested reader *how to do it.*

For some of the illustrations of practical fowl-houses used in this work, I am indebted to the courtesy of H. H. Stoddard, Esq., of the POULTRY WORLD, Hartford, where they were originally published. This excellent monthly magazine I commend to all poultrymen who are not already among its patrons. It is universally admitted to be the ablest edited, the best illustrated, and the handsomest printed poultry journal in this or any other country.

My readers are now referred to the subject I have chosen for this volume, with the confident assurance that if they will follow the suggestions herein made, with due care and judgment, they may raise fowls and eggs for market to any reasonable extent, successfully, and to profit — as I have done.

GEO. P. BURNHAM.

Melrose, March, 1877.



PEA-COMB PARTRIDGE COCHINS.

☞ My patrons will be supplied with this stock direct from the original breeder's yards—and I am able to assure all who fancy these fine fowls, that I can furnish them with the very choicest of this variety—or with EGGS for incubation, in the hatching season, from superior selected birds.

The following editorial in Stoddard's "POULTRY WORLD" for March 1877, describes this now established and popular variety, quite accurately.

"THE PEA-COMBED PARTRIDGE COCHINS, which were originated by C. H. Edmonds, of Melrose, Mass., and which were two years ago admitted by the American Poultry Association to recognition in the new *Standard* as a distinct breed, have proved a valuable acquisition to the American varieties, and are now coming to be much sought after by amateurs and fanciers.

During our attendance at the last exhibition of the Massachusetts Society, at Music Hall, Boston, we examined the fine samples there shown by Mr. Edmonds, and feeling desirous to see this breeder's flocks at home also, we visited Melrose for this purpose. We can vouch for the fact that no finer lot of Partridge Cochins than these birds, as a whole, ever fell under our notice.

They are closely bred to color, even size, ample weight, and general good characteristics; and we are happy to state that Mr. Edmonds's efforts have proved a success. His breeding of the pea-comb on this variety is now fairly and fully established, and quite as many of his chickens, for the last two or three years have shown this feature, as are ordinarily bred upon the *Brahmas* of to day.

During the coming season Mr. Edmonds expects still further to improve his stock; and he is entitled to a full measure of credit for having accomplished what he undertook to carry out, some six years ago, through steady and systematic management, and, first and last, at cost of no little time, labor and money.

There is a great advantage in the pea-comb for our Northern states, as compared with the single comb of the other varieties of Cochins. Single combs are very apt to freeze in severe weather, as most of our readers well know."

PREFACE TO CHROMO EDITION.

The present edition of "RAISING FOWLS AND EGGS *in quantity for Market,*" is enlarged upon the original editions, by the addition of several pages of important illustrated matter at the end of this book.

The Chapter thus added upon "*Successful Artificial Incubation,*" (see pages 33 and forward) comprises a most interesting account of the colossal poultry establishment of W. C. Baker, Esq., at Cresskill-on-the-Hudson; about the existence of which the author had no idea, when he first wrote this treatise.

There is also now presented in the 50 cent edition of this work a beautiful CHROMO of Standard Brahmas, from the plate originally executed for THE POULTRY WORLD, Hartford, Conn., which we consider an attractive and valuable addition to the book. The 25 cent edition (*without* the Chromo, or the additional article above mentioned), will be mailed, as heretofore, to all who prefer that little volume.

In its present shape, we consider this treatise on "raising fowls and eggs for market" quite complete — and have no doubt that all who read it will admit that this PART IV, of our series of hand-books for poultrymen and farmers, at the popular price of 50 cents each, will be quite as acceptable as have proved its predecessors.

GEO. P. BURNHAM.

Melrose, Mass., June, 1877.



RAISING FOWLS AND EGGS

IN QUANTITY, FOR MARKET.

HOW TO DO IT.

Some wiseacre has affirmed that “a bird in the hand is worth two in the bush.” He is correct in this decision. We venture to paraphrase this ancient adage, and assume that a healthy live chicken in the palm is worth more than two in the shell!

We commence this treatise with some brief ideas upon the best methods of *hatching* chickens, such as may prove valuable to the farmer or poulterer — always contending, as we do, and believing that incubation *in the natural way* is the preferable mode. That this plan is the very best for our purposes which can be adopted, (at least for the present in this country), we were years ago satisfied.

The setting hen is surer, she hatches a greater percentage of chicks, and will in this climate, give us better, healthier, larger, and stronger young birds than can be produced through any other known process; not excepting the Egyptian, the Chi-

nese, the Assyrian, the English, or the Yankee methods of hatching by oven-heat, steam, alcohol, hot-beds, manure-tanks, or otherwise.

Before we come to details in the process of hatching chickens under the natural mother, however, I propose to devote a few pages to *artificial* incubation, as it has been practiced for centuries (and very successfully) in other countries; about which in the United States little is as yet known, and *with* which very little has ever yet been accomplished among our people, of a satisfactory character.

Various attempts have been made with modern "incubators" — operated with fluids for heating. And several patents have been taken out in this country for these inventions, the *originators* of which have at times been more or less successful with them, in a moderate way.

But the conclusion which one of the leading American patentees arrived at, some years after he had faithfully experimented with and sold several of his Incubating machines, was candid and truthful. He frankly declared that modern poultrymen had not educated themselves up to the details of this thing; and that they did not and could not succeed with this process, because it required such nicety of manipulation and so peculiar a knowledge of scientific points in management, that only the person who contrived the machine was able to do anything with it that would remunerate him for the time spent over it, the original cost, the expense of experimenting, and the first losses of good eggs that were inevitable in the beginner's experience.

So he voluntarily stopped the sale of his incubators, notwithstanding the fact that he had himself been able to hatch out (and raise) from sixty to seventy-five per cent. of the chicks from eggs that he personally superintended the incubation of — and this on different occasions. Others, however, could *not* accomplish this, and it was given up.

Such has been the fate generally of the inventions that have thus far been attempted for this business, in England or Amer-

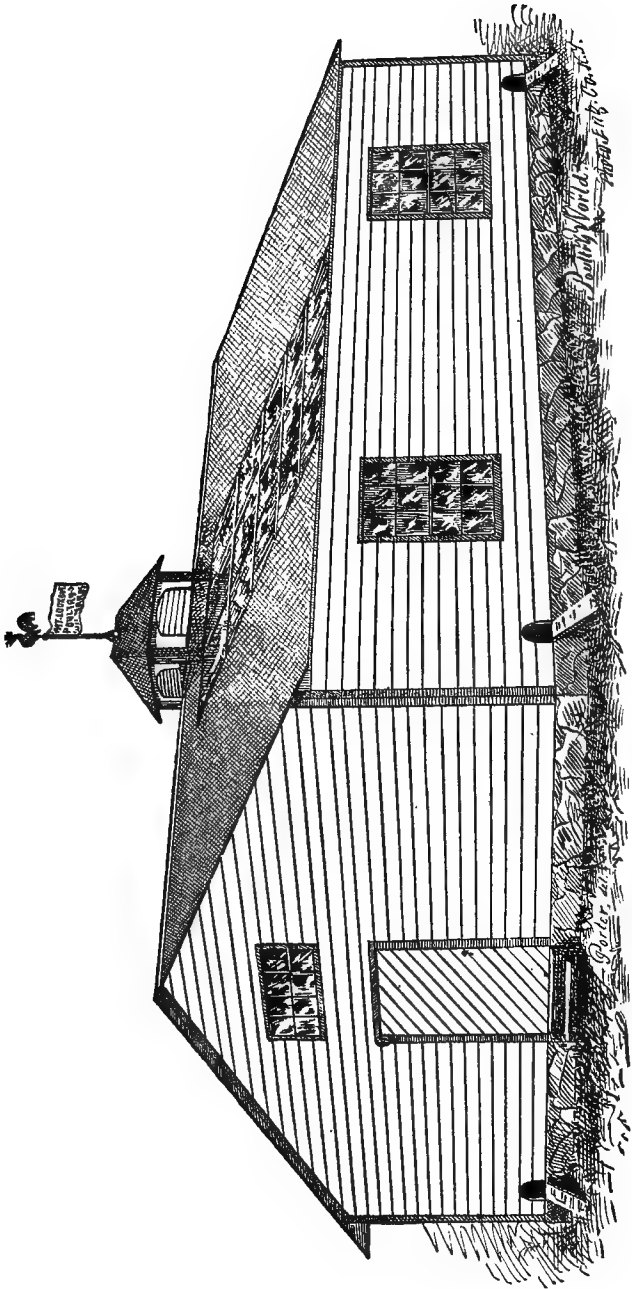
ica. In the hands of the originator, who clearly comprehends the intricacies of his machine, and who knows how to manage it, many chickens have been hatched. But our own view of this kind of invention is that they are too complicated, and too "scientific" in their construction, to be useful or profitable in the hands of the average unskilled poultry-breeder.

And while due credit should always be accorded to such enterprising inventors, the fact must not be overlooked, that, however well they may themselves be able to manage their machines, the every-day fowl-breeder is not competent to the performance of a work which (as they are aware) has cost them years of toil, thought and study to master, and make themselves familiar with, in detail.

We recently saw in the correspondence of a traveller who was sojourning in China, an account of a professional "egg-hatcher" of that country, which was quite novel. This operator hatched ducks' eggs in great quantities in baskets, heated artificially from the bottom with hot stones or tiles suited to the purpose; and, in his way, he was very successful. It is said there are numbers of these egg-hatchers to be met with in the interior, near Chinese large cities or commercial ports, and that they do a thriving trade in their vocation, in the early season of the year.

In the instance referred to, the writer described this heathen operator as one of the greatest "lions" in *Chusan* where he saw him. He is an old Chinaman who every Spring hatches thousands of ducks' eggs by artificial heat. He received me says this traveller, with Chinese politeness and offered me tea and his pipe, two things always at hand in a Chinese house, and perfectly indispensable. I asked permission to examine his hatching-house — to which he immediately led the way.

The Chinese cottages, generally, are wretched buildings of mud and stone, with damp earthen floors, scarcely fit for cattle to sleep on, and remind one of what Scottish cottages were some years ago, but which now, happily, are among the things that were. The Chinaman's cottage was no exception to the



FOWL HOUSE OF C. L. GATCH, (NEW RICHMOND, O.,) WITH PARTLY GLAZED ROOF.

general rule. Bad-fitting, loose, creaking doors; paper windows, dirty and torn, ducks, geese, fowls, dogs and pigs, in the house and at the doors, apparently having equal rights with their masters.

The hatching-house was built at the end of the cottage and was a kind of long shed, with mud walls and thickly thatched with straw. Along the ends and down one side of the buildings are a number of round straw baskets, well plastered with mud, to prevent them from taking fire. In the bottom of each basket there was a tile placed, or rather the tile forms the bottom of the basket. Upon this the fire acts—a small fire-place being below each basket. Upon the top of each basket there is a straw cover, which fits closely, and which is kept shut while the hatching process is going on. In the centre of the shed are a number of large shelves placed one above the other, upon which the eggs are laid at a certain stage of the process. When the eggs are brought, they are put into the baskets, the fire is lighted below them, and a uniform heat kept up; ranging, as nearly as I could ascertain by some observations which I made with the thermometer, from 95 to 102 degrees. But the Chinamen regulate the heat by their own feelings, and therefore it will, of course, vary considerably.

In four or five days after the eggs have been subject to this temperature, they are taken carefully out, one by one, to a door in which a number of holes have been bored, nearly the size of the eggs; they are then held against these holes, and the Chinamen look through them, and are able to tell whether they are good or not. If good, they are taken back and replaced in their former quarters; if bad, they are of course excluded. In nine or ten days after this—that is, about fourteen days from the commencement, the eggs are taken from the basket, and spread out on the shelves. Here no fire heat is applied, but they are covered over with cotton, and a kind of blanket, under which they remain about fourteen days more—when the young ducks burst their shells, and the shed teems with life. These shelves are large and capable of holding

many thousands of eggs; and when the hatching takes place, the sight is not a little curious.

The natives who rear the young ducks in the surrounding country know exactly the day when they will be ready for removal; and in two days after the shell is burst, the whole of the little creatures are sold and conveyed to their new quarters, where — with the natural heat of that hot climate, and proper attention to their needs, the ducks are subsequently raised to advantage, and are sold usually when a third or half grown, for the tables of the mandarins or the foreign resident merchants.

This may answer in China. But such a method (even if we any of us understood it, which we do not), is quite impracticable on this side of the water. The incubating processes of English and American inventors, as we have observed, proved failures — in the main — except by way of experiment, in the hands of the originators, themselves. And in spite of the utterly unwarrantable theory of such visionaries as Geo. C. Geyelin and Lewis Wright, who assume that artificial hatching and the rearing of chickens is an absolutely necessary accessory to any large fowl-breeding establishment, we undertake to affirm that up to this time, in the year of our Lord eighteen hundred and seventy-seven, there is not existing nor has there ever yet been invented, an eccaleobean, an incubator, a hatching-house, a hot-bed, or other contrivances of this character, in France, England, or America, that was practically worth one sixpence in the hands of a novice, for wholesale production of chickens from fowls' eggs.

Mr. Geyelin, is unquestionably a gentleman, and a well-meaning man. But his proposition is utterly impracticable, at least in the United States. And his prescribed mode of artificial hatching can never succeed, in either England or America, profitably — since all experiments in this direction have proved failures from their excessive prime cost, and the subsequent disasters that attend the attempts to *raise* the chickens produced in this manner, in a cold climate. It cannot be done,

with us. It never has been done — to any extent. And we doubt if it will be done in either country, at present.*

But let us note how the artificial hatching of chickens is manipulated in Egypt, where millions of hens' eggs are every year used, in their peculiar style of "oven," and incubated by common fire heat — as all of us are aware, who have studied chicken-history carefully.

A quaint old volume, written over a hundred and thirty years ago by Monsieur de Reaumur, of the Royal Academy of Sciences at Paris, and printed for C. Davis, over-against Gray's Inn Gate, London, in 1750, is devoted principally to the hatching of domestic poultry by means of artificial heat — "either in hot-beds, or by that of common fire." This is a studied dissertation upon the mode for hundreds of years in vogue among the *Bermeans*, in Egypt; where millions of chickens are annually and successfully raised *without* mother-hens:

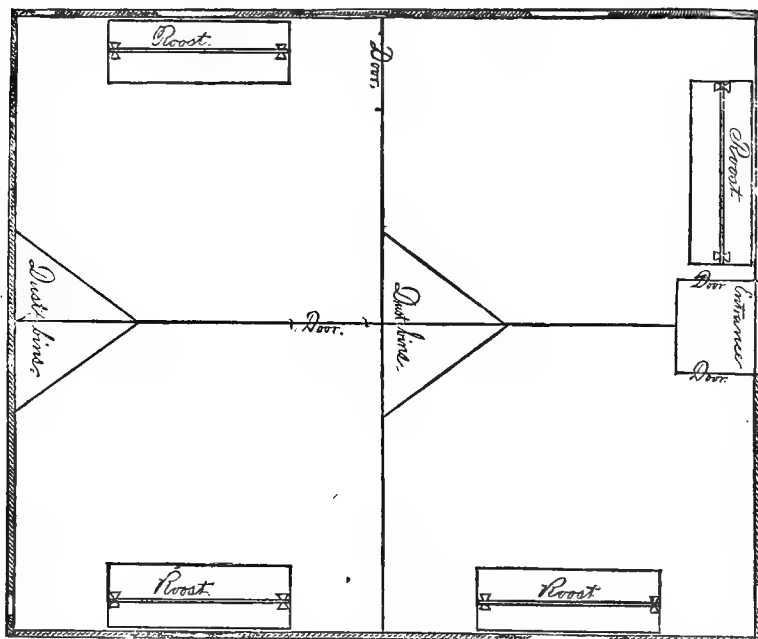
But this occurs in Egypt, and the *modus operandi* through which this colossal result is there attained, has ever been — as it still is — virtually a secret.

In the early numbers of the third volume of "Wade's Fanciers' Journal," there appear some interesting articles upon this topic, which we quote from. In the work by Monsieur de R, Father Sicard tells us that "we ought not to wonder that this peculiar method of hatching chickens should not be known in Europe; since it is unknown even in a great part of Egypt. It is a secret, limited there to a single village, called *Berme*, located in the Delta, sixty miles from Cairo — and a few adjoining places." The inhabitants of *Berme* teach this secret to their children — but successfully keep it from all strangers. In the proper season, the *Bermeans* disperse themselves around,

* The above was written before the long and interesting account of Mr. Wm. C. Baker's extraordinary success in hatching chickens by artificial heat at Cresskill, Bergen Co., New Jersey, was made public, within my knowledge. Since the first editions of this book were published, that account appears in the *Hartford Poultry World*, copiously illustrated; and by permission of H. H. Stoddard, Esq., (who loans us copies of the drawings) we insert this important article in fifteen pages at the end of *this* edition of our book — to which the special attention of the reader is here referred.

each man who understands the process takes charge of one "oven," for about six months, successively, and through their skilful management from 45,000 to 70,000 eggs are set at a time, in *each* oven—to be hatched out by means of properly applied and carefully conducted artificial (fire) heat.

The Egyptian secret consists of two parts; namely, that of building these hatching-ovens properly, and that of causing the immense number of eggs set in them to be regularly and



GROUND PLAN OF C. L. GATCH'S POULTRY HOUSE, ON PAGE 8.

appropriately heated, night and day, as they would be if set on by the hens. The results attained are similar to those reached by the use of modern incubators, on a far lesser scale. The knowledge which the Bermeans possess (and which they keep so cautiously to themselves,) is that of so warming the eggs continuously, for twenty-one days, as to gradually unfold the chicks within, and finally to hatch them; the important point

towards success consisting simply (as in the cases of the American artificial incubators of Graves, or Halsted,) in keeping up a constant and regular needful degree of heat, and knowing exactly how to manage the ovens to effect this object.

A veritable account is given of the enormous number of chickens thus hatched in Egypt, as well as the exact number of ovens in use at that period, by the Bermeans. There were then 386 licensed ovens. "This number," says Father Sicard, "can never be increased, or diminished, without the fact being known; since the Aga of Berme — a governing official — is the lawful recipient of a regular tax of eight or ten crowns each for the privilege allowed to run an oven; and this being his rent-roll, all operators are duly licensed and registered. Thus it is known that there are (or were) 386 ovens annually operated in Egypt — say in 1740 to '45.

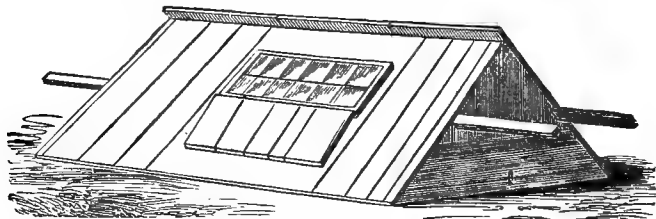
In each oven they contrive to turn out, in six month's time, an average of eight broods, or hatchings, one after another. This gives three thousand and eighty-eight *broods*. The number of eggs set in each oven, at one time, is from 45,000 to 60,000. If three-fourths of the eggs hatch, (and this is said to be about the average product) we find that there are produced in Egypt by this secret artificial process 3,088 broods of say 30,000 live chicks, *each*; or the amazing number in the aggregate of *ninety-two millions, six hundred and forty thousand*, annually! At all events, this was the official record, more than one hundred and twenty-five years ago.

Americans naturally exclaim "where do all these *eggs* come from just at the right time for setting, thus?" And "what do they do with these millions of chicks, as to raising, and disposing of them, after hatching?" We will answer these natural questions and quote some farther information upon this curious, but interesting work — which has wondrously increased in proportions, as a business in Egypt, since the middle of the last century.

It is doubtful if we in America could possibly follow the Egyptian, or Bermean lead, in this business of raising poultry

in such enormous quantities, according to their concealed method. The "ovens" we allude to are called *mamals*, in Egypt. Each *mamal* has its Bermean, and one man only is entrusted with its management. He is educated from childhood to the work, but the French author from whom we quote, advances the proposition (very cautiously) that this huge quantity of chickens, which will be looked upon as really prodigious, *might* be annually produced in France, or other populous countries, through means approximating in character to those employed by the Egyptians.

Then Mons. Reaumur goes on to tell how common bakers' and pastry-cooks' ovens may be utilized, to produce similar results. Indeed he details numerous experiments he tried, and succeeded with excellently well, with such ovens — or rather the waste heat of them — in the space *over* the hot bread and pie ovens of Paris. At the convent of the Society of L'enfant

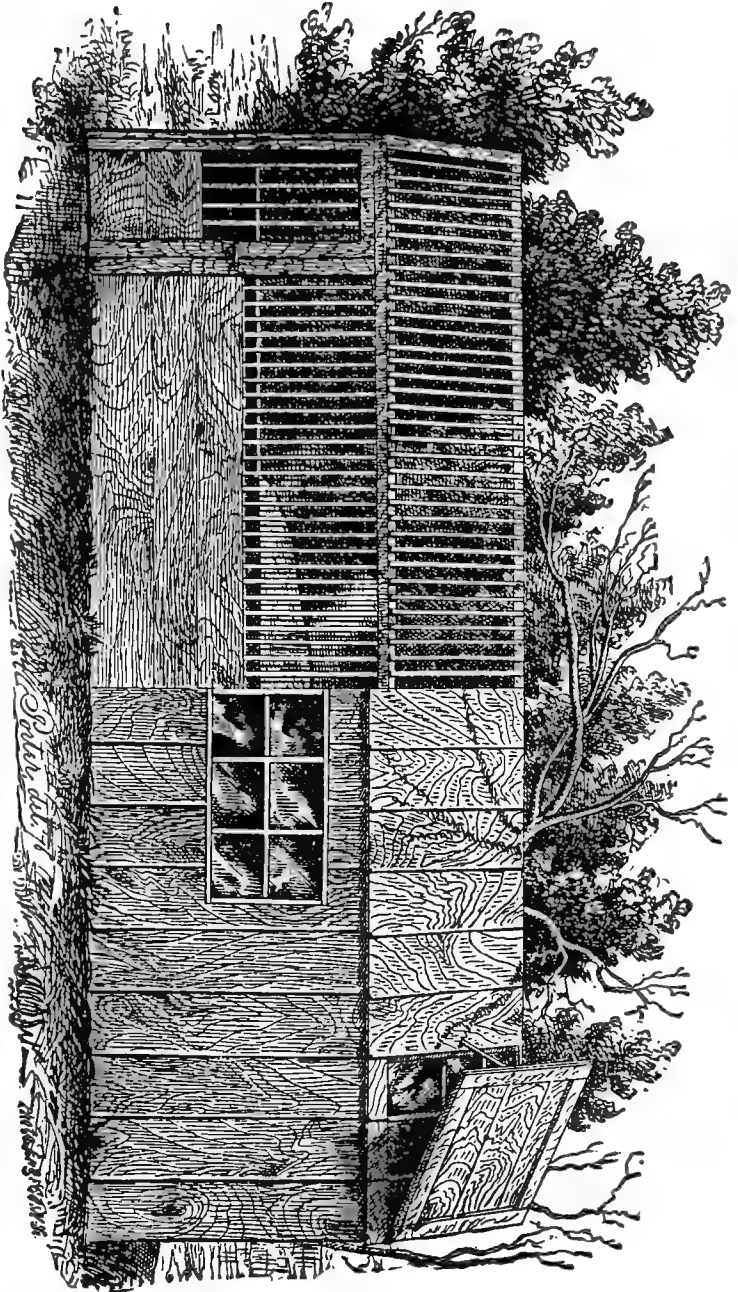


A MOVABLE CHICKEN-COOP.

Jesus, with the nuns at the Convent St. Sulpice, and also under the superintendence of the Abbe Menon — in France, the experiments with their baking ovens were practiced upon de Reaumur's suggestion with a few hundreds of eggs at a hatching, with remarkable success and satisfaction.

Prior to the issuing of this book by de Reaumur — away back a hundred and forty years ago — the Duke of Tuscany (so Thevenot asserts) in order to indulge a laudable curiosity "for which the ancient house of *Medicis* was eminent, had sent to him from Egypt one of these educated Bermeans, skilled in the art of hatching chickens," who hatched some at Florence, with as good success as they were got out in Egypt." This ex-

E. H. WALLACE'S CHICKEN-HOUSE, (WALLINGFORD, CONN.,) WITH LATH-COVERED RUN, OR YARD.



periment was tried, with like success, in Poland. A French prince attempted it at Chantilly, subsequently, without the Bermean — but failed. And it was concluded that to do this work as *they* did it — producing such vast quantities of chickens at a time — the Egyptian operator must be imported, who knew how to build the “oven” first, and how to manage it and the eggs deposited therein, rightfully — afterwards.

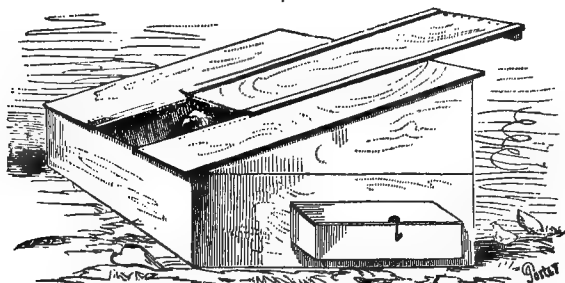
We have only approached to this “art” in hatching chickens through similar modes, by using the Incubator, which is heated artificially, and from which only a few score, or hundreds at most, can be hatched at a time. And even this system is but indifferently understood in this country as yet. “Where do the eggs come from, in Egypt, to supply these enormous hatching-ovens at the right time, of such freshness as to be rendered at once available?” is a question naturally proposed.

Through this method of successfully hatching such large quantities of chickens every year by the Bermeans, under a system that has been in vogue there for centuries, it is at once apparent that “hens have been rendered infinitely more common in Egypt than in any other country known. This is of course owing to the facility with which Egyptians are able to multiply them,” says Reaumur. And Father Sicard adds that a thousand eggs are sold there for not above thirty to forty *medins* — which is equal to but 36 to 40 cents in silver. There is therefore no difficulty in procuring *any* quantity of eggs, when they are wanted — since every peasant or poultry owner knows when they are needed for the hatching-ovens, and provides his share from day to day through the season on the spot, at Berme, where they are used and promptly paid for on delivery.

The Egyptian mode of raising chickens is to this people a very simple process, and it could perhaps be imitated in this country, to some extent, in the hot season, at the extreme south during seven or eight months in the year. “The first thing, however, to do towards cooking your trout,” says quaint Izaak Walton, “is to catch him.” And intelligent Californians

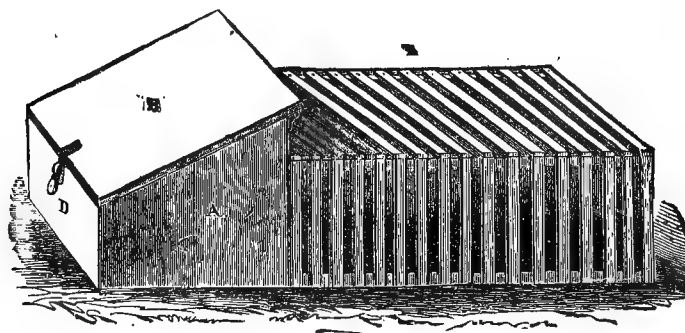
have a proverb among them advising that “you secure your bear, before you offer to sell his skin.”

In this view, we add that the first thing to perform in the raising of chickens, in any quantities, is to successfully hatch



CHICKEN-COOP, WITH SLIDING-TOP IN ROOF.

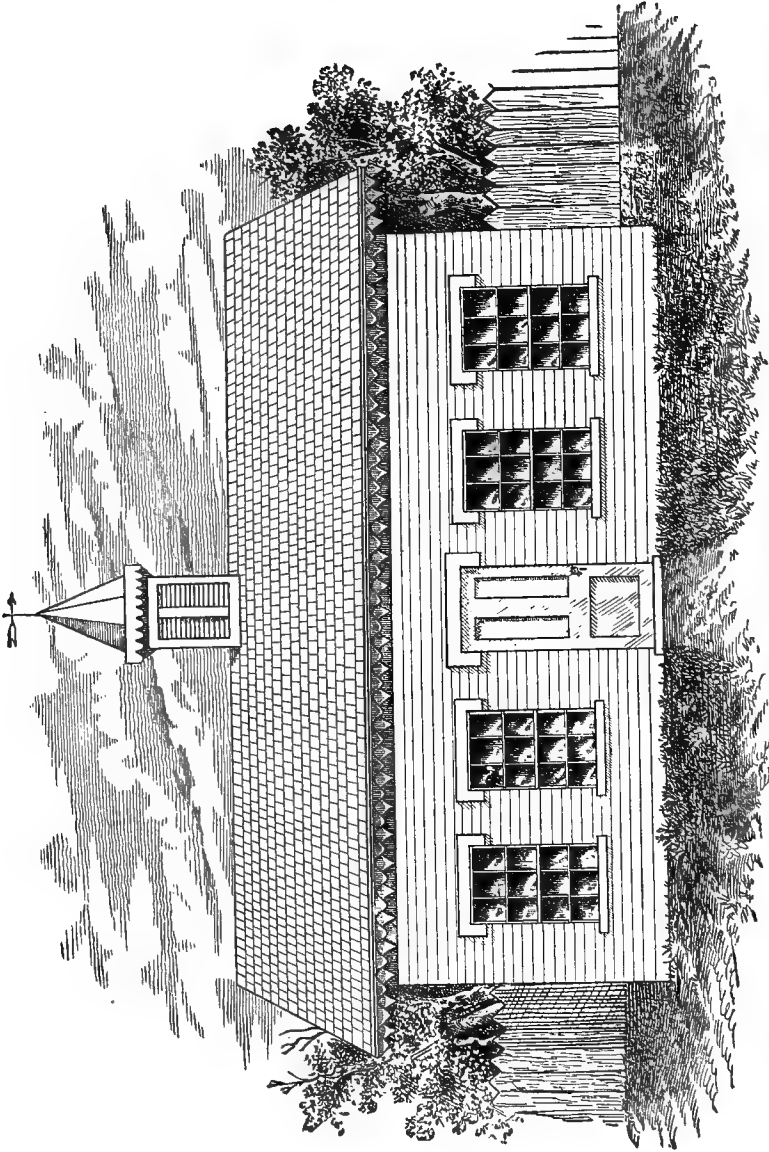
them. The Bermeans do this on an enormous scale. *How* they do it, is a matter that must be studied attentively, and experimented upon largely, before the American breeder will be able do it as *they* succeed with it. But—given the chickens



COOP WITH LATH COVERED RUN FOR HEN AND CHICKS.

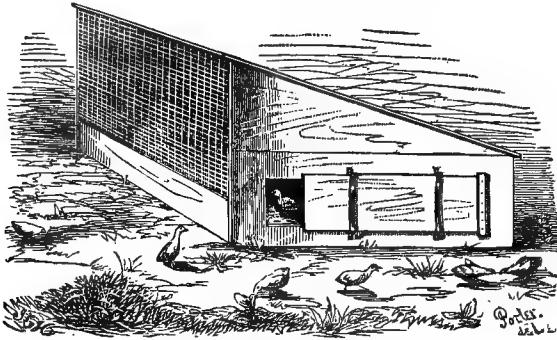
in hand — successfully hatched, the mode adopted in Berme to raise them is by no means complicated, since they do this by the millions, there.

But they have a vast advantage over us, in the temperature of their warm climate, to begin with. In Europe or America,



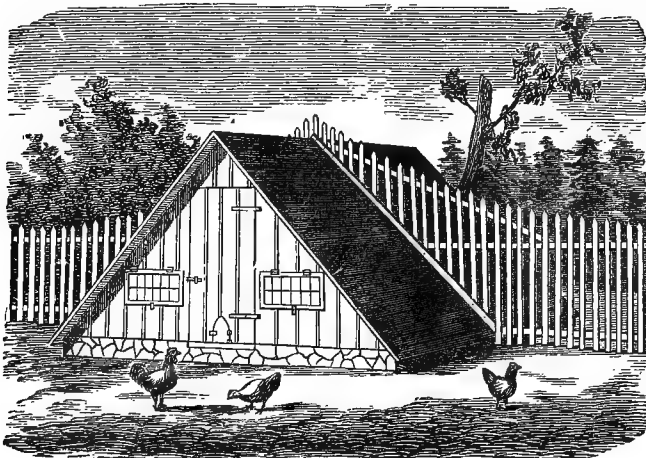
MODEL FOR A HANDSOME MODERATE COST FOWL HOUSE—FRONT VIEW.

even if it were feasible at any one time to collect several hundred thousand eggs suitable for hatching, (which is hardly possible,) and if we were then able to so manipulate them in the incubators, or properly prepared "ovens," or heating houses, as to get out even five or ten thousand at a time, what could we do—in many of our cold localities—with so many



CHEAP SHED-ROOF HOUSE, WITH GLASS OR MESH-WIRE FRONT.

chickens, produced on the same day? What must become of the poor little creatures, fresh from their shells, without moth-



A GOOD FOWL-HOUSE, WITH FENCED RUNS FRONT AND REAR.

ers to brood and shelter and keep them from perishing in infancy, especially in frigid weather?

“Artificial mothers are already invented,” replies the maker of incubators. We are aware of this fact. But how far will those machines go toward the desired end, when we speak of what is to be done for tens of thousands of chicks, possible to be produced? “Multiply the number of machines?” Very good. But this would not remedy the objection, in our wet, cold days and nights; while in Egypt it scarcely ever rains, and the climate is constantly sufficiently warm to permit of dispensing with “mothers,” natural or artificial. They do not use them there, at all, and thus *they* can raise chickens in quantities, as *we* can not.

That chickens *can* be multiplied among us, artificially, and that to a certain extent they *can* be reared through means similar to those long in vogue among Egyptians, there is little question. That hundreds of batches of chickens are nowadays hatched and raised, at least to goodly marketable size in America, we are assured is the fact by those who have in the last three or four years used the Yankee “incubators,” invented by our people in New York, and Boston.

We will now turn to the subject of hatching chickens in the ordinary way—as we are compelled to do, for the most part—under hen-mothers.

The early Spring-time with us is the appropriate season in which to commence the work of chicken-raising. Adult fowls become “broody,” or, in other words, they then incline to sit upon the second litter of eggs they have laid. And this “hatching fever” or motherly instinct in fowls, first exhibits itself in the month of February, March, or April, annually.

We have stated heretofore, and we repeat it just here for the information of those interested, that hens will ordinarily lay about so many eggs in a year, with good fair keep and treatment—but that the egg-product may be greatly *increased*, within a given period, by the daily use of extra or stimulating feeding.

Those who raise fowls and eggs for market purposes only, and who do not give their attention strictly to breeding "fancy" or show fowls, have no use for cocks and hens except to breed and rear them *in numbers* as rapidly as possible, and to obtain from their fowls the largest quantities of eggs, in the shortest possible period of time. And when the hens have "laid themselves out," it is time to turn their carcasses over to the butcher, or they quite outlive their usefulness.

The "*Imperial Egg Food*" made at Hartford, Conn., by Allen and Sherwood, is by far the best stimulant for this increased egg-production from common hens, that we are acquainted with. We have personally tested this preparation, and with marked results, in past years. Hundreds of the leading poulterers of this country have also tried it practically, and all agree that this food — properly given to laying fowls, (as the printed directions accompanying each package clearly specifies) will greatly improve the laying quality of hens; while there are certain constituents in the make-up of this feed, that wonderfully aids at the same time in keeping domestic poultry in fine condition and good health.

We commend the judicious use therefore of this Imperial Egg Food, because we know something about it, through experience, and because this is the *only* sort of "egg-producing food" we have any knowledge of, individually.

If we are to make use of eggs for hatching that are laid by our own stock, we know as a rule about what will be produced from them. If we are just commencing the business, and are in search of a clutch or two of eggs of some single chosen variety that we fancy — we should apply to a reliable breeder of the kind of fowls we prefer, and take care that we get what we are in search of, fresh laid, and true to the breed we seek.

This is important, for several good reasons. There is much of ignorance, a great deal of carelessness in breeding, and not a little deceit practiced in certain quarters, by those who do not know how to breed fowls, or who do not care to keep the better class of stock of the nominal varieties they pretend to

cultivate, honestly and advisedly. The "humbugs in the hen trade" are not all dead, yet — even in this year of grace 1877.

Apply to a good man, and enjoin it upon him to ship you the freshest eggs he has, from fowls that have been properly mated for breeding. Pay him his price — get them at as reasonable a figure as you ought to for the kind it may be — and do not send your order for them until you have procured a hen, or have one at hand ready, to set.

The safest way to set a hen, is to place her at first for a few days, say, upon glass or common eggs. When she is firmly attached to the nest, then give her those you have purchased, or set aside for breeding from. She will remain steady after the third day, if she is in earnest. And all you need to do is to see that she comes off, daily, or is taken off the nest for food, bathing in the sulphur-dust and ash box, and returns to her duty before the eggs chill, if the weather is cold.

In the *earliest* weeks of spring, I have found nine Cochin or Brahma eggs as many as a hen will then cover to advantage, in the sitting-nest. Eleven or thirteen are used, frequently. But there will rarely be hatched of these over seven or eight chicks, in the coldest months of spring-time. Of the smaller varieties, such as the Leghorns, Plymouth Rocks, Spanish, Hamburgs, etc., the greater number of eggs may be used.*

Make it a point to place the sitting hen upon her nest *in the evening*, always. She will through this method be more steadfast in her brooding. Prepare the nest in a quiet portion of the house, or furnish her with a covered box, or coop, by herself in an out-of-the-way corner, where she will remain undisturbed by other hens, and especially by the cocks in your runs.

The bottom of the sitting-nest is well made by placing a grass-sod first in the box, with the roots upward. Upon this fresh damp earth lay short straw or hay, mingled with tobacco leaves, if you can procure them handily. Sprinkle over all a little fine powder of sulphur — and, the last thing before you put the hen upon the eggs, rub sulphur-dust, or carbolic powder through her feathers, thoroughly. By this means you

* These and the Houdan, Dorking, or Game Cocks, make a good cross with common fowls.

drive away, and keep at a distance, the vermin that so frequently assails a setting hen.

She must have food and water handy, of course. And you should remove her gently from the nest, daily, unless she voluntarily comes off to feed and roll in the dust-bath every day. But do not fuss with her. She knows her duties best.

She will sit twenty-one days. At the expiration of this term, the chicks will give you notice of their approach, by their gentle "peep" at first, and then by thrusting their downy polls out through or under the parent's sheltering wings. Still, let hen and brood alone for twenty-four hours. They are all right, and they will do nicely yet, for a full day.

On the morning following the hatching, remove the mother carefully from the old nest. Clean it all out, and take the *debris* away. Give her a little more sulphur, or carbolic powder, dusted through her plumage. And then commence to feed the younglings — as we have directed.

And just here let us observe that the use of "a little sulphur powder" is recommended. You can kill every chick that is hatched under your hens, by *over*-doing even this very simple process. There is no necessity for applying sulphur in undue quantities—remember.

Give the hen-mother a dusting with it when she first commences to sit, and when she hatches her brood, apply a little of it upon her under-feathers. Not too much — for a surplus will get into the eyes of the chicks and blind them, frequently.

They cannot see to eat after this, and die of starvation. Whereas, if the sulphur be judiciously applied to the hen's body, only, (at first) vermin are kept at bay, and sufficient of the dust reaches the down of the tender young chicks for all useful purposes, until they get to be three or four weeks old, and strong in muscle and limb, comparatively.

My recent volume upon the various "*Diseases of Domestic Poultry*," treats this subject fully as a speciality, and I must refer the reader of this present treatise to that work for information and advice touching the details of these troubles,

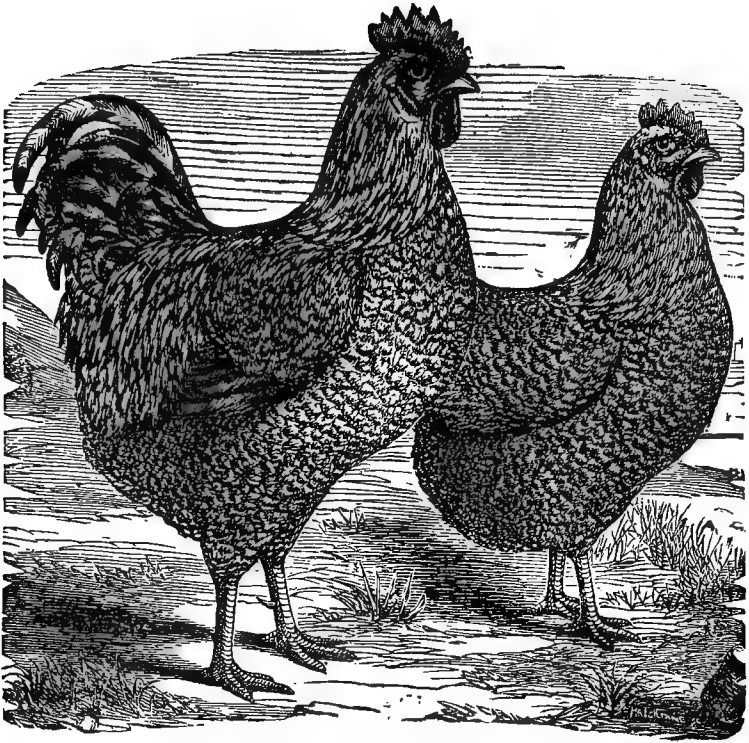
as I have space in this little book barely to allude to the common ailments of fowls.

In my previous works, however, I have advised the use of the *German Roup Pills* as a palliative and general corrective for use in the fowl-yard. This preparation is an old one, and it has been thoroughly tested in Europe and America, until it has come to be an established specific everywhere among American poultry-raisers, appreciated through its intrinsic merits. As a general medicine, for practical use at a moment's notice upon the approach of diseases among the fowl flocks, these German Pills have no rival in excellence.

It has now come to be very generally understood that that troublesome affection known as *roup*, is one of the very worst enemies we have to contend with, in poultry raising; and its presence in the houses or runs is the greatest bar to success in rearing good younglings, or in keeping grown fowls, usefully. These pills are now manufactured very largely and are sold all over the country, to the great satisfaction of those who use them. H. H. Stoddard of Hartford, has recently become proprietor of this curative for ailing fowls, and we refer to his advertisement at the close of this book with pleasure — knowing, as most of our readers do, — that he would not recommend it, or have undertaken the sale of this preparation, unless he well knew its value and efficacy.

The coop in which the mother hen is confined until her brood is a month to six weeks' old, may be very simple in its construction (*see pages 17, 19.*) It should be without a floor, and of convenient size to be portable. The roof, common pitch, and overhanging the eaves sufficiently to shed the rain — in that portion to which she resorts at night, or for shelter from bad weather. The rest of this cage may be open, slatted with laths (*see page 17*) set far enough apart on the framing to allow the chicks to pass out and in, at their pleasure.

This coop can be taken up and moved about the grass-plot easily, (*as see design on p. 14.*) and placed upon a fresh spot of the lawn, or run — thus benefitting hen and chickens, largely.



“PLYMOUTH ROCK” COCK AND HEN.

THE FARMER'S FOWL.

The above illustration accurately represents this now favorite variety of poultry, which is not a large breed, comparatively, but which has proved a very useful one to farmers and poulterers, who have given them a fair steady trial, for two or three years. They are good layers, a very good table fowl, not unlike the old style Dominique (from which they come, through a cross with the Black Java) and have become quite desirable, as a moderate priced and acceptable sort, for ordinary uses.

Mr. Felch, in speaking of the “Plymouth Rocks” said publicly, not long since, that “there has long been felt the need of a breed of fowls which should fill the middle ground between the small breeds and Asiatics. This place is admirably supplied by the *Plymouth Rocks*. And anxious that it may remain so, I would caution the breeder not to breed them to

Asiatic size: for so soon as they shall reach the size of the Brahma they will be equally as long in maturing, and thus lose that merit (poultry for summer and early fall) which they now possess, and which gives them their present strong hold upon poulterer and breeder. In our rural districts many a matron is dependent upon the egg production to secure money to replenish her wardrobe; and we can see, if we are ever to secure a foothold in these districts for thoroughbred stocks, they must have merit. *The production of eggs* is what keeps the machine moving. In fact, it is the fuel that heats the steam that starts the whole. The census of 1870 discloses the facts that the United States produced 336 million dollars worth of hay, 761 million bushels of corn, 288 million dollars worth of wheat, a cotton crop worth 155 million of dollars, a dairy crop of 145 million of dollars, a meat crop, which took into account all the animals slaughtered or sold to be slaughtered, (cattle, sheep and swine) valued at \$398,956,376. But greater than either of these agricultural products stands *the egg and poultry product* of this land. It finds no rival, save in the entire meat and dairy crops combined. Prices based on the market in my own town," said Mr. F., "show that if each family consume but two dozen eggs per week, and \$20 worth of poultry per year, the aggregate would be 405 million of dollars; to which if added the consumption of our restaurants, confection establishments, our thousands of hotels, and the medicinal and chemical demand, we cannot possibly compute the egg and poultry produced in the United States to-day, at less than 500 millions of dollars per annum. This is the largest agricultural interest in the land, be it observed, at this time.

The *common* fowls of the country are now kept of course, in great excess of numbers over any and all of the "fancy" breeds of late introduction among us from abroad.

Within the writer's experience, if common breeds of chickens are hatched in the months of February and early March, the male birds, properly cared for, will by July and August attain to a generous size for the table. And if well fed during this period, they will average a dressed weight of five or six pounds each, or eleven pounds the pair, which, at the ordinary value of poultry in market in the months last named, will afford a very handsome profit upon their cost and keeping.

At about the period when the cocks are thus killed off, the pullets of this cross and age will begin to lay almost uniformly, and will continue to furnish eggs during the entire winter,

coming in for sitters naturally in the months of February and March, when their litters will have been exhausted.

As to stock for *breeding* purposes, a selection is best made from the short-legged Asiatic *male* birds, to be introduced to the common native female stock. From their chickens, *selected* birds should be used for future breeding, and the cross thus obtained are best *bred back* to the Cochin or Brahma male again, reserving from season to season only the short-limbed and well-shaped pullets from the crossing, for subsequent use. In this way the better characteristics of the foreign blood are more uniformly retained.

The *first* feed for chicks, say for a week, is largely the best if given of hard-boiled eggs and bread crumbs. They eat but little for a few days after the hatching, but should be fed four or five times a day.

After this, give them cooked soft food, of wheat, fine corn meal, and potatoes boiled, for two weeks. And if from the outset, you scald this food in *milk* (as most farmers can) the benefit will be farther increased.

From this time forward, crushed corn and boiled vegetables, half and half, with occasional additions of bone-meal and fine meat-scraps will help them, amazingly. Where hundreds of young birds are raised, (instead of dozens, only), this system cannot well be fully carried out. But in any case, the food should at first be *cooked* for them. This renders it more easily digestible: and for their drink, a tonic of Iron Tincture, or Cayenne pepper in the water, twice a week, is beneficial.

Where fowls are kept for profit, and especially when large numbers are present, attention should be directed to saving *the feathers* taken from them, (if dressed for market,) and also the manure from the houses — no inconsiderable items of value in each year.

In raising poultry, whether the object be to produce chickens for the market, or to obtain a supply of eggs, the first principle to be observed is *absolute cleanliness* in and around the houses they occupy. During the brief process of *fattening* fowls, a range for the birds intended to be slaughtered is not necessary. On the contrary, for two or three weeks devoted to finally fitting fowls for the spit, the more quiet they remain in their confinement (always supposing them to be kept cleanly and free from *vermin*) the better.

For both laying and breeding fowls a range or walk is a necessity to their comfort, health, and profitableness. Without this convenience, to a greater or less extent — and the more

liberal the range the better — it is futile to attempt to grow fowls to profit, and to expect them to produce eggs regularly.

In the vicinity of all large cities and towns fresh eggs are always in request, at the most remunerative prices. Every tiller of the soil possesses, more or less, facilities for feeding poultry economically, and has also the space upon his land to make them comfortable and thrifty. But some time must be given to looking after them daily, and a degree of *care* is requisite to keep them in "good heart," and to render them of profit in the end. Our Shorthorns and Alderneys, our Suffolks and Chesters, our Southdowns and Cotswolds, all require care to keep them in fine condition. Why not, proportionately, so with our poultry; which, having reference to the comparative cost and product, pays with certainty so much greater a percentage of profit, year by year? In France every farmer has his chicken yard, and the amount of poultry and eggs consumed by, and exported from that country, is enormous. Monsieur de Lavergne, for example, estimates that the poultry of Great Britain for the year (1861-'62) is valued, in round numbers, at twenty millions francs, (\$1,000,000,) while the total value of the two products — poultry and eggs — in France at the same period reaches rising two hundred millions of francs.

Where one or two hundred fowls can as well be profitably kept in a thrifty condition, as a dozen or two can be neglected and starved, it is well that every farmer should look at this item of live stock, and bear in mind that, with ordinary care, (considering the necessary investment of capital and the trouble of its keeping) *no live stock will return him anything like so generous a percentage as will his too often neglected poultry.*

As a rule, the poultry-house or houses are better placed, all things considered, with the aspect facing east and south, in our northern and eastern States. During the severe winters experienced in our northern latitude, domestic fowls will neither lay, nor be free from various diseases, if exposed to rough weather or the chilling winds. A cheap and good style of house may be constructed with a partial glass front and end, facing as indicated in Fig. 1., the sash running from two feet above the sill towards the peak, and upon the side towards the eaves, of any desired dimensions, upon the plan on next page.

Such a house has been in use for several years by the writer, and has been found to answer admirably for sitters as for layers, with a slight change in the interior arrangements, from one season to another. The glazing may be such as serves for

the ordinary green-house roofing, that is lapped upon the edges. This affords light and warmth from the sun's rays, and has been found most economical and comfortable. The wing may

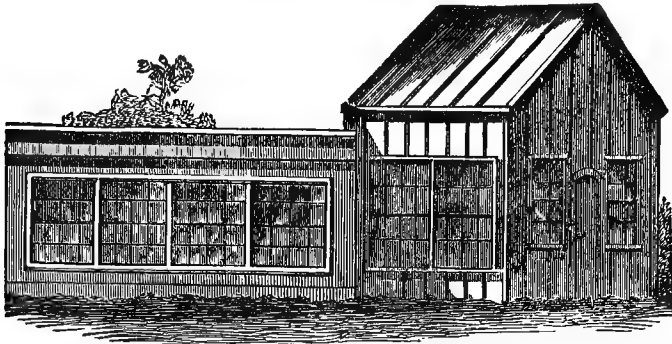
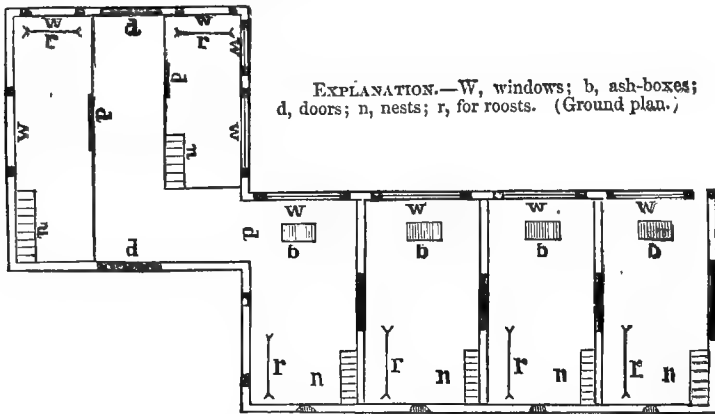


FIG 1.—A CHEAP AND GOOD POULTRY HOUSE.

be of any length. Earth floors beneath the roosting places are economical and easily cleaned. Half round roosts of large sized spruce poles are the most comfortable, and these should be movable, to set upon cross-stilts, not over two or three feet from the ground floor. If these roosts are once a week, in warm weather, wet with kerosene, the process will serve the double purpose of keeping the roosts free from vermin, and the bodies of the fowls from this same annoyance. Access to a gravelled walk or yard at the rear, in fine weather, is indispensable. A grass enclosure, if practicable, upon which fowls can range daily, is a desideratum in summer. In the rear of the above described house, was allotted half an acre for this purpose. In the absence of these two last mentioned almost necessities, fresh gravel and sand, broken shells, &c., and green food of some kind, as cabbage leaves, ruta-baga tops, turnip leaves, grass, or the like, should frequently be thrown within their reach, which they will devour with avidity.

The house and ground-plan here described, (figures 1 and 2) may be used for laying hens during the fall and winter, and for sitters in early spring time. From such a house the chickens, when strong enough, may be transferred to the *open* or "summer" coops mentioned hereafter, and shown in figures 3, 4, and 5. It must not be forgotten that pure air, and plenty of it, when not freezing cold, is as desirable to fowls as to man. A dust-bath formed of leached wood ashes, is a luxury for

fowls confined in limited accommodations. The premises described should always be kept as cleanly as possible, and at least annually whitewashed upon the inside.



The remarks thus far submitted have reference, in a general way, to the keeping of poultry upon an ordinary scale. With slight daily care and attention, as above hinted, any farmer can keep his hundred or two of fowls, which may readily be tended and provided for by the boys upon his estate, or even by the women of the household. From two hundred birds thus disposed, he may obtain, annually, two thousand three hundred dozen of eggs, and, if inclined, at least fifteen hundred pounds of marketable chickens, before the close of August, in each year. This product will pay him from four hundred and fifty to five hundred dollars in money, and leave him his original stock for the next year. His expenses will be not over two hundred to two hundred and fifty dollars, thus furnishing him with an equal sum of profit upon say two hundred fowls.

The calculation here made as to returns in eggs, is set down at an annual yield of 140 eggs to each hen. This is fully up to the average, under the best care and upon high feed. Some fowls will lay more than this number, but these are exceptions. From 130 to 140 eggs, yearly, is a generous supply, and I have never known any fowls except the Chinese, or the cross already described, that would accomplish more than this. The hen spoken of by some writers that "lays every day in the year" is a myth.

For fattening fowls, the best corn is the cheapest standard

food in this country. Boiled rice and potatoes, and shorts or "middlings" of wheat are excellent. Small potatoes and broken or even "damaged" rice, which can usually be obtained in any large city, serve an admirable purpose, and will be found economical for every-day feeding. Occasional allowances of barley or oats, or both, are highly advantageous to laying fowls. Sunflower seeds, which can be easily grown profusely along the entire range on both sides of all fences, without taking up room or causing any trouble save the original planting, are one of the very best alteratives and changes in diet that can be obtained, and fowls will devour these with a gusto, always. In the writer's judgment, fowls should never be stinted in food. As much as they will eat without waste, and of the best, is deemed the most economical in the end.

Male chickens intended for the market may be kept together advantageously in considerable numbers in the same coops, if brought up together from the outset. No pullets should ever be placed in these cages or yards. As fast as the birds reach the proper size and weight for killing, they should be disposed of. For this particular purpose, cock chickens are the most profitable, as they furnish more meat at a given age, and are of no account (in numbers) otherwise, after they attain to a size suitable for the table. These male birds should be well fed from the shell. They will generally pay a large profit upon the investment, and may be killed at three to six months old.

The plan of a fowl house already given (see Figs. 1 and 2) is such as the writer had in use for some years, in size, proportions and appointments. Below is the design of houses adopted by him also for many years, for summer use only, in which large numbers of chickens were annually raised.

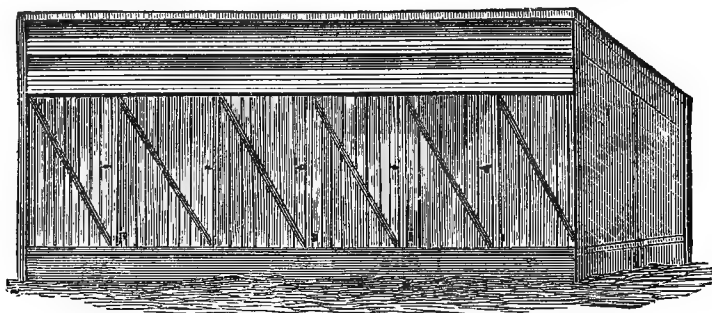


FIG. 4. — SUMMER OPEN CHICKEN HOUSES — REAR.

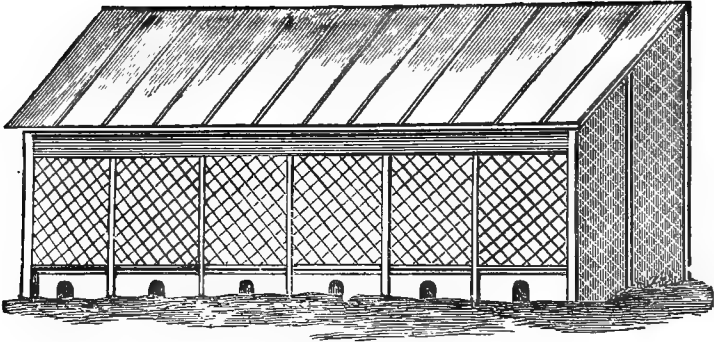


FIG. 3 — RANGE OF SUMMER OPEN CHICKEN HOUSES—FRONT.

The arrangement on next page, colonizes the lots of chicks, with the mothers, from March or April to June and forward, and separates each from interference with the others. The land might be subdivided into four lots, but the expense of fencing would be considerable, of course, and has not been found necessary upon the writer's system of management. In each of the six *coops* indicated have been kept, from early March or April, twenty-five to thirty chickens, with two or three hens each, the aggregate, upon the half acre in the four *houses*, averaging, during the summer, 600 to 650 chickens, raised for and sold in market from June to August. A portion of the chickens, say one-fourth, are allowed to run into the whole lot (which is in grass) during three or four hours daily, when they are driven in, and another fourth part are released for exercise.

One house is usually devoted to male birds, exclusively. In the fall, a few of the finest of both sexes are selected to add to the next year's breeding stock, and the balance, seven or eight months old, are sold for consumption, at fifteen to eighteen

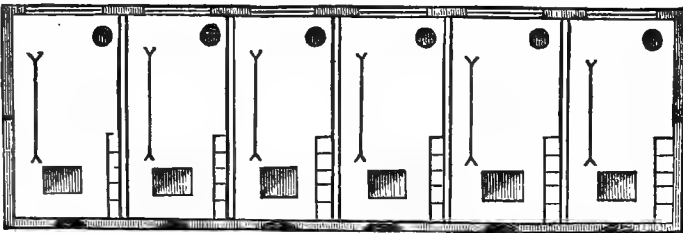
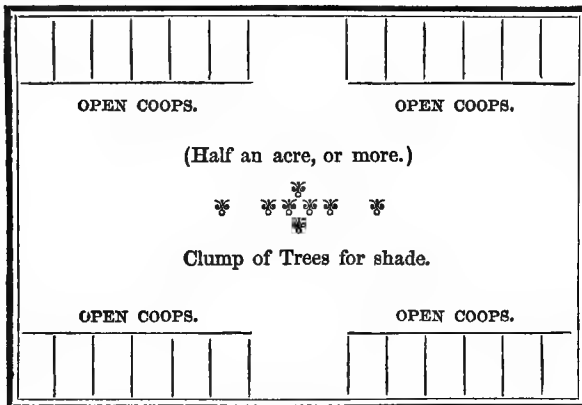


FIG. 5.—GROUND PLAN OF OPEN SUMMER CHICKEN COOPS.

cents per pound, paying a profit of 40 per centum at least, on cost, interest on investments, keep and care.

The open or summer coops described, are constructed of laths or paling-stuff upon all sides, and are protected by a shed roof, battened over the seams. The six divisions will make each house about forty feet by twelve. This is cheaply built, but is ample for all the purposes of raising the chickens to marketable condition, from the time they leave the hatching-house with the hen-mothers, as described.

Six of the compartments (or coops) are under one roof, and four different houses stand at the four angles of an oblong square of land half an acre in extent, thus :



The winter laying and sitting house, described below, (figures 7 and 8,) may be also used for summer chicken-raising, if desired. The sashes in front can be taken out and lattice-work substituted; or the frames of the windows can be covered with two-inch mesh-wire screening, which is inexpensive and very durable. By this change the poultry-house is rendered cool and airy, which, for the "heated term," would be found too close and warm, for summer use, with the glass windows.

The lattice-coops will have already been cleansed, of course, for the reception of the young birds. The entire fixtures in these chicken-houses consist of a water-vessel for each, a feed-box, a low roost upon the brackets, and a dust-box, two feet square for ashes. Into this latter, it has been found a good plan to mix with ashes a handful of powdered sulphur, occasionally, which helps to destroy vermin. In a few weeks from their

entrance to the coops, the chickens will follow the mothers to the low roosts, and I have never found any difficulty in keeping two or three hens with their broods in each of the compartments. I had these in use for twenty years, and found them all that is needed for *summer* houses for market poultry.

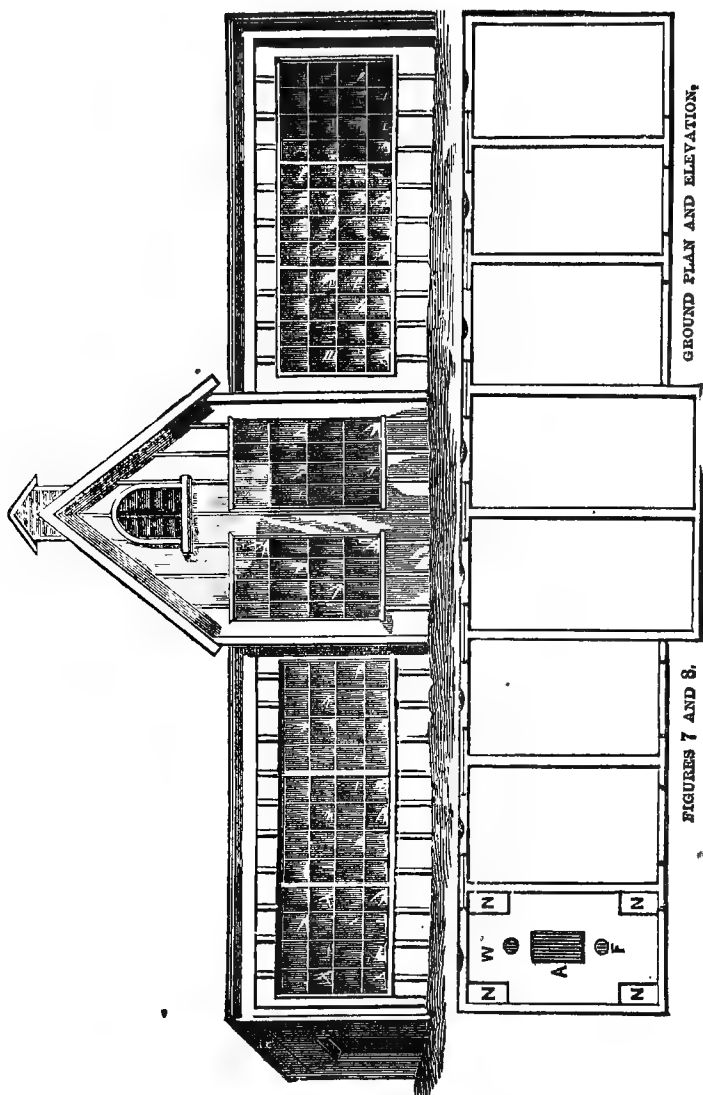
Now, if six hundred chickens can be produced thus successfully upon a half-acre lot, no good reason naturally appears that *any* given number may not be similarly raised — for market purposes be it remembered — and kept, advantageously, from the early hatching period suggested, through the summer months, while the weather will commonly permit of their being left comparatively *in the open air*.

To attempt to *house* large numbers of fowls in close quarters during the severe winters at the north, is not recommended. Thus, in order to raise chickens by hundreds or thousands, a great deal of space is necessary, as I have aimed to show.

Thus, when winter approaches, and the weather gets too cold for comfort, upon the plan suggested, all the previous spring and early summer chickens will, from time to time, have matured and been disposed of; and only the fowls for winter laying and the next spring sittings remain on hand. The accommodations of the previous year are now used for the convenience of these birds, say from October to February, and the hatching of *their* broods, subsequently — their chickens, in turn, being transferred, in due time, to the open cages described.

For the accommodation of the layers, and afterwards for the sitters in early spring-time, the plan on the following page is in use by the writer: (Figures 7 and 8.)

This house for sitters and layers, furnished with great simplicity, has been found ample for the purposes indicated. The building was erected of rough No 4 boards, set upright upon a two by four-inch joint frame-work, with four-inch corner-posts and centre-studs, and is battened upon the outside (over the seams) with three-inch paling-stuff. The roof is finished in the same manner, but shingling is better. The corner-posts of the central portion of this building are sixteen feet high, the pitch is "one-third," and the dimensions of this part are seventeen by fifteen feet. The two wings (as shown in the elevation) are shed-roofed, falling back from the front, are twelve feet high, running down to seven and a half feet in rear, fifteen feet wide, and extend right and left from the outside of the central building, in each direction forty-five feet; making the whole house ninety-six feet long by fifteen feet in width,

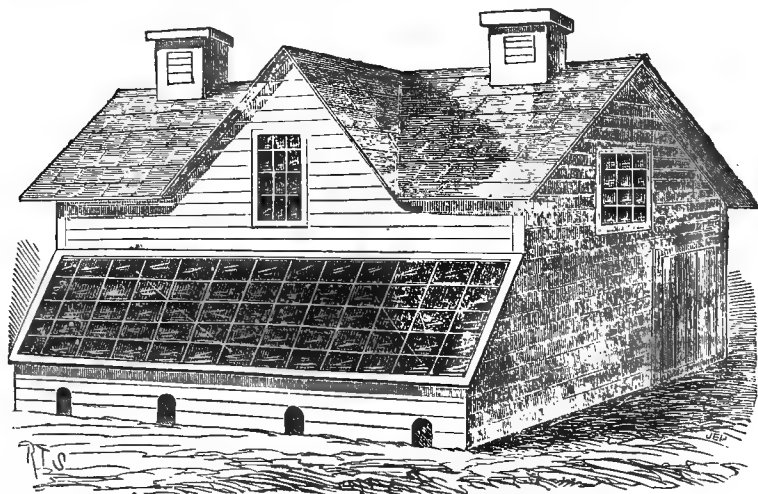


This house is surmounted by a cupola five feet square, with a vane, which adds to the comeliness of the premises, but need not be indulged in save to suit the taste of builder. The sashes

are upon a line in front, and are glazed in the manner already indicated in plan, Fig. 1. In this house about fifty hens can be conveniently set at one time — say in the ten apartments five each — who will not interfere with each other if properly cared for daily. During the late fall and winter months this building will accommodate, in its ten divisions, over a hundred laying hens comfortably. (Eight sections only are shown.)

During the early spring an average of a dozen eggs may be placed under your fifty sitters, and, with good luck, five hundred chickens may be produced, and this from the earliest broods. These may be removed in due time to the “open” houses, and another fifty hens may be placed upon the nests vacated by the first ones, who, with proper care, will bring out another five hundred chickens, more or less, say in six weeks after the earlier sittings.

It will be understood that upon the removal of the first broods, the sitting boxes should be nicely cleansed, before the second hens are placed upon the nests. By the time the second broods come off, it will be the last of March or the first of April. All the young stock may be safely transferred to the open houses by the beginning of May, where they can thenceforward be fed and cared for as previously directed.



I. K. FELCH'S PLAN OF A TWO STORY FOWL-HOUSE, WITH LOW GLAZED FRONT ROOF.

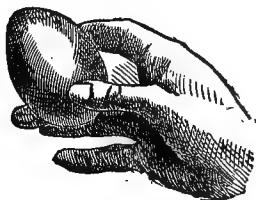
From the new stock the best samples of pullets are selected again, to add to the next year's breeding stock, as before; the old fowls (two years of age) are killed, the young cocks are all put in separate houses, to be used for the earliest maturing and largest chickens, and affairs go on during the fall as during the season previous.

By adopting the plans thus laid down, with the buildings and appointments herein suggested, a thousand chickens can be readily and profitably raised for the summer market annually, while ample conveniences are thus afforded, also, for at least one hundred laying hens during the winter months in the glazed house, (Figs. 7 and 8.) If the desire be to raise more, increased space must be accorded to your fowls, and more buildings should be erected.

It will not answer to increase the huddling of the birds under one roof. If the buildings are smaller even than those described, and more numerous, being scattered over acres, instead of confining the stock mentioned to half an acre, and to a building of the size given, it will be all the better for the general health of the birds, undoubtedly. Crowding fowls into too narrow a space, is one great cause of the fatalities attending the attempt to breed them.

Fresh air, light, cleanliness, varied fare, pure water, range, grass or occasional green and animal food, shelter from wet and raw winds, with plenty of gravel and ashes to roll themselves in, are all requisites to success.

With these advantages and fair attention, provision being made for the warmth and comfort of the laying hens in winter, chickens can be raised for the table and for market in any quantities, and to highly satisfactory profit; and eggs in abundance may also be had in any dry location within reasonable distance of the larger cities and towns of America, as has been proved through years of experience and of successful experiments.



SUCCESSFUL ARTIFICIAL INCUBATION.

THE LARGEST POULTRY FARM IN THE WORLD.

Since the foregoing pages were published, (in the original twenty-five cent pamphlet form,) our attention has been attracted to the May issue of Stoddard's "Poultry World," which contains a very interesting and elaborate account of an immense chicken-raising establishment on the banks of the Hudson River, at Cresskill, N. J., such as we had no thought existed on this continent.

The following detailed description of this great poultry-raising farm, conducted by Wm. C. Baker, Esq., with the accompanying illustrations of his fowl-houses, incubating house, brooding-house, &c., we transfer to this work, by permission of Mr. Stoddard. And we can only say, that this chicken-rearing place is by far the most extensive, practical, and successful, that has ever been brought to our notice.

Our present work would be quite incomplete without some details of this enormous establishment, surely. We therefore give this article almost entire; since upon Mr. Baker's system, (which has never been approached elsewhere), tens of thousands of domestic fowls may be hatched and raised with the greatest ease, by competently educated persons, who have the means to carry out the details of this grand plan for artificial hatching and rearing domestic poultry, on a large scale.

Upon this fine estate, at Cresskill, N. J., at some rods distant from the family residence and ornamented grounds, stand the great glass-covered chicken-houses, the incubating-house, the enormous laying-houses (the latter in a range four hundred and sixty feet long), the forcing-house, or patent feeding-rooms, the slaughtering-house, store-rooms, etc., which constitute this immense artificial fowl-raising establishment — beyond comparison the grandest and most extensive thing of its kind in the world.

By courtesy of the Editor of the "Poultry World," we present the original drawings of the buildings, &c., premising that, up to the issuing of our first editions, we had no idea that there existed anywhere so enormous a chicken-raising establishment, or that it had yet been brought within the reach of science and art to compass the wondrous success in this direction that Mr. Baker has finally accomplished.

After practically experimenting in various ways for several years (during which period Mr. Baker has expended in these experiments, and in the erection and appointments of his nume-

rous buildings, \$75,000), his establishment for hatching chickens, ducks or turkeys is to-day brought down to a very fine point, assuredly! And the nicest feature of all is found in the fact that, *under his system*, there is absolutely no limit to the quantity of chickens that may be artificially produced and successfully raised, even in our uncertain American climate.

We have always hitherto contended — and our experiments have proved this to be true — that large numbers of domestic fowls or chicks could not, ordinarily, be successfully raised or kept under a single roof. In hundreds of known instances other than our own a similarly unsatisfactory result has followed the attempt to multiply fowls in the common way, or to hatch and rear them profitably in large numbers among us, except through “colonization,” within prescribed limits. On page 10 of this work appears the statement that “Up to this time, in the year of our Lord 1877, there is not existing, nor has there ever yet been invented, an incubator, an ecaleobion, a hatching-house, a hot-bed, or other contrivance of this character, in France, England or America, that was practically worth one sixpence *in the hands of a novice* for the wholesale production of chickens from fowls’ eggs.” But Mr. Baker is *not* a novice, and his scheme has proved a magnificent success, verily, through the facilities and appliances at his command at Cresskill, for the invention of which he personally holds several patents of original contrivances adapted to his purposes.

Upon Mr. Baker’s plan the thing is entirely feasible, perfectly natural, eminently successful; and we see no reason why any man possessing the peculiar talent and taste for this business which *he* does, and who has the means to carry out the details as he has done, cannot raise domestic fowls by thousands, as readily and as surely as we have ever raised scores or hundreds, for the market, as he has done and is now doing at Cresskill.

But this wonderful triumph in Mr. Baker’s case has been achieved through brain-work, intelligent study, extensive knowledge of mechanics, the skillful application of properly-created and graduated heat or moisture, and by the liberal expenditure of cash means. Therefore, Mr. Baker need have no concern that he will meet with serious rivalry in his laudable undertaking in the present century. In our judgment, after a critical examination of his system, his premises and the cost of this huge enterprise, few other Americans will ever attempt to compete with him in this business on the large scale he has done it.

The illustration upon page 42 represents the exterior of the

great brooding-house — a long, glazed building fashioned like a pitch-roof green-house, with a broadside aspect to the east and south. The two and a half story building on the right (to which this is attached) is a commodious dwelling-house for the attendants, etc., and contains Mr. Baker's private office, the incubating-rooms, a dining-hall and other apartments above, while the basement is devoted to store-rooms, boiler-rooms, electric battery apartment, heating apparatus, etc.

Passing through the battery-chamber, we enter the incubating-apartment. Here are quietly produced thousands of chicks by artificial heat, every week. This chamber is about twenty feet square, protected by double sets of windows, and three ranges of huge oblong incubators stand through the center; while a lesser range, similarly constructed (each with eight tiers of shallow egg-drawers, one above the other), runs around the four sides of the room.

The capacity of the hatching-drawers, or multiplied trays, in these incubators is equal to the accommodation of about eight thousand eggs at a time, or, say, for turning out one hundred and forty thousand chickens per year in this one spacious, artificially-heated apartment.

There is another room devoted to this same purpose, and Mr. Baker is still further increasing his incubating works, with the design of raising, during the coming year, a grand total of two hundred and fifty thousand chicks; for which, as they mature, he has secured a cash market — when they shall have attained from one and a half to three pounds weight each — for table consumption in New York city, by the leading hotels there.

Mr. Baker's thorough acquaintance with the manufacture of steam-heating apparatus affords him rare advantages in "applying the principle" to chicken-incubating purposes. For many years he was one of the eminent New York firm of Baker, Smith & Co., known the world over in this line of business. His plan of hatching chickens is briefly as follows:

The gas for heating the incubators is manufactured upon the premises. Beneath each machine is kept alight a single jet of this gas to heat the water conveyed through pipes to the narrow open chambers or vacuities *over* the surface of the eggs as they rest in the trays while being hatched. This process constantly gives to the eggs the required artificial heat, in form quite similar to the action of the warmth that descends from the natural hen-mother's body when she is brooding over her eggs. An ingenious, practical and most admirable arrangement this; for,

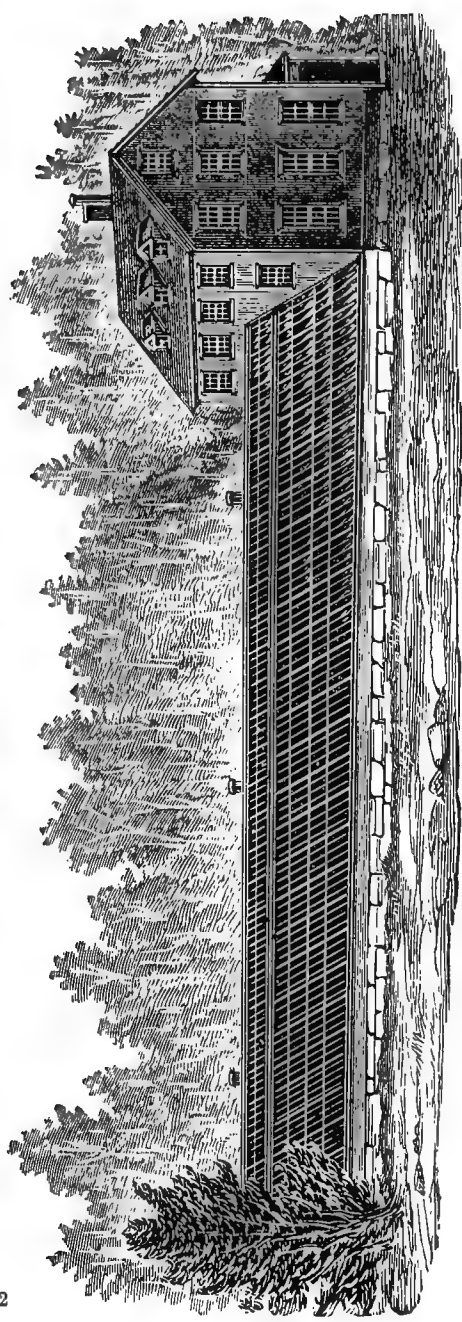
in Mr. Baker's verified experience, precisely as the hen performs her duty in the natural way, so must the incubator perform its duty to be successful in the hatching. (See cut on page 50).

The incubating-apartment is watched over by two or three females, Mr. Baker believing that this delicate process can be more aptly and appropriately managed by woman's hands, than by those of the rougher and sterner sex. The eggs in the trays are turned regularly once in a day, by these attendants. The heat conveyed to the interior of the incubators, as we have described, is controlled automatically. An electric battery in the adjoining room communicates with the hot-water chambers over the eggs, and also with the gas-jets; and when the temperature becomes too hot or too cold for the healthy and rightful progress of the hatchings, the undue variation of heat is instantly announced, through indicators governed by the electrical current and apparatus contrived for this special purpose. The atmosphere in the incubating department is kept moist and humid—like the warm spring air—by placing open, shallow pans of water around, upon which the heated air acts advantageously, evaporating it evenly and admirably.

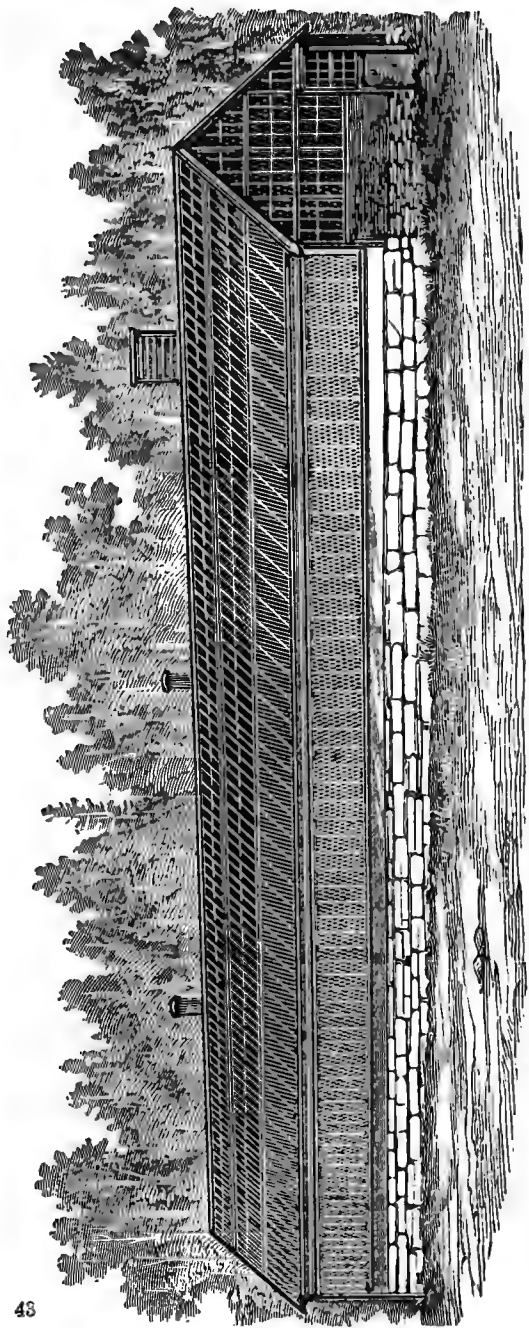
The numberless eggs produced and procured by Mr. Baker for his immense incubators are each and all tested before setting in the trays, and afterwards, at stated times, to ascertain if they are stale, clear or fresh, and vitalized. And all day long, and every day in the week, hundreds of chickens are now forthcoming from the drawers of the incubators, as we can affirm from personal observation.

The young birds remain in the trays (where they first see daylight after breaking their shells) for two or three hours, when they become dry and lively, and are soon transferred to what Mr. Baker calls his "brooding-house"—delineated on page 42. This glass house is thirty feet in width, and one hundred and fifty-eight feet in length. It is sixteen feet high to the central peak inside, and it is divided off into fifty separate compartments (twenty-five on either side), in each of which are kept and "brooded," artificially, one hundred chicks from the second day of their birth to two or three months old; the accommodations within this large conservatory being ample for five thousand chicks at a time, of all ages.

Here may be seen chickens of every hue and stripe, from the size of a half-grown robin to that of a pigeon or partridge, all in high health, active, sprightly, and evidently happy in the constant "summer atmosphere" that is kept up in this building



W. C. BAKER'S INCUBATING HOUSE, AND GREAT "BROODING-HOUSE," AT CRESSFIELD, N. J.



RANGE OF LAYING HOUSES, (75 SECTIONS,) 480 FEET FRONTAGE, AT CRESSKILL.

also, for their benefit and convenience. Here they chirp and run about their little yards, and grow and thrive continuously, until they become good-sized broilers; and then, at weights of from one and a half to two and a half pounds each, they are fattened, dressed, and sent to the hotels and restaurants in New York at forty to fifty cents per pound, dead weight, to be served up as the always-desirable early spring chickens we see announced upon the fashionable hotel and restaurant bills of fare in that city.

There is always a ready demand for these chicks. Mr. Baker will hatch and raise over two hundred thousand during the present year, probably; and he offers nothing for sale, but always finds his market for everything he can get into good condition, as we have described.

In this house the chickens are "brooded" when quite young by a patent hen-mother to each pen, which is hollow, made of zinc and filled with hot water, lined underneath with blanketing (not sheep's wool), and fixed close to the ground in a slightly inclined position, underneath which the chicks creep for extra warmth, when they feel the need of it, and which answers the full purposes of the "brooding" afforded by the natural mother-hen, without the lice nuisance that so commonly accompanies the natural mode of brooding.

At the proper age, selected transfers are made from this house to another and larger range of buildings, similarly glazed and ventilated, in which are also confined, in numerous separate apartments, the laying-hens and pullets kept on the premises by Mr. Baker. This latter range is glazed on one side only, and contains seventy-five separate pens.

This laying-house (four hundred and sixty feet long) is divided into seventy-five compartments, and each pen has three rooms or divisions in it. The pens run through from front to rear, and are six feet wide, each, by twenty feet long, from east to west, upon the following ground plan, on page 51.

The front of the middle sections of these pens is provided each with sashes that raise to the roof or lower at will to open or close up the two back parts of the pen in cold weather, the *front* division being covered on top and outside with open mesh-wire only, beneath which, in fine weather, the laying-fowls enjoy the open air and the limited run. These pens have a clean, dry, graveled floor all through, and the whole premises there are thoroughly underdrained, to keep them perfectly dry at all seasons. Above the ground-floor the pens are well ventilated, and

the birds thus confined (as they are continually in this house) are in excellent health and condition.

They are fed from the rear of the pens. A narrow tramway runs completely through the building, and the tenders place their feed in small truck wagons, one commencing at one end and the other at the farther extreme of this long four-foot-wide passage, depositing the feed of mash or grains, as the case may be, in the little hoppers as they proceed, until the two men meet in the center of the passage, when the feeding is finished. Fresh water is carried through small iron pipes along this entire range of pens, and under each drinking-vessel are packed loose stones, to a considerable depth, to drain off the spot and avoid dampness around the inside of the pens.

This immense laying-house is heated by steam or hot-water pipes again, and the apartment is kept at continuous summer heat (in the colder seasons) by this means; whereby Mr. Baker has found, with stimulating food and constant care, that his fowls "lay well in winter time," as well as in the warm months of the year. The wire meshing inclosing the open fronts of the pens prevents damage from rapacious night vermin, hawks, etc. In each pen there are kept from twenty to twenty-five hens and pullets, or about two thousand laying-fowls in all; and these are of all sorts and kinds — well-bred, full-bred, cross-bred, etc., — the majority being Asiatics, Leghorns, Spanish, Bucks County, Colored Dorkings, Houdans, and *crosses* of all these, most of them being good birds, and all well suited to Mr. Baker's purpose — to wit, *laying of eggs only*.

Every description of food is given them, at times, in variety, and plentiful supplies of every kind of grain are always ready at hand; meal of all sorts, granulated bone, "Imperial Egg-Food," bran, scraps, shells, shorts, etc., with which their bill of fare is alternated, and green food, a little fresh meat, etc., is frequently added as well.

The *cleanliness* of the entire premises is a triumph. We never saw any fowl-houses, large or small, so scrupulously nice, from floor to roof, as were these; and we are not surprised that Mr. Baker is rarely troubled with lice, and has little sickness, comparatively, among his enormous numbers of fowls, young or old.

Nor far from this building stands the cramming or forcing-house, one hundred and twenty feet long by twenty-five feet wide, which is an unique affair, and quite novel in this country. This house is proportionately extensive and formidable,

like the other arrangements on this huge chicken-farm. There are erected within it eight round, upright wooden "feeding-machines," each having five tiers of small boxes, pigeon-hole shaped, for the accommodation of a single fowl in a box, and each machine will hold in the five circles running around this upright drum, two hundred and ten birds, when deposited there for fattening, or forcing flesh upon them for marketing.

It requires but fifteen to eighteen days of this cramming to put the fowls taken from the runs in ordinary trim, into the very best possible condition for the table. The extra flesh thus put upon them through this process, is not literally *fat*, but good sound, solid *meat*; and old birds, too, are, by this means, rendered tender, juicy and palatable, to a surprising degree. There can be so prepared in this building, thirty thousand chickens per annum. This place is kept dark and cool during the "forcing;" it is carefully ventilated, and its success as an auxiliary to Mr. Baker's general plan, has proved wonderful. The mode is similar to that in use in France, but Mr. Baker's plan is an improvement upon the French method in many of its details. The process of forcing, as adopted at Cresskill, is to confine each bird by himself in one of the boxes. The legs are strapped to the sides, and the head and neck only protrudes from an opening in front. The front of the boxes shows like the drawing on page 50.

Each box holds one fowl. The feeder takes it by the head and, thrusting a pipe into its gullet, forces from a mess-tub near by, through a flexible tube, the boiled, mashed food prepared for this purpose. With a single movement the crop is filled, and the next bird is similarly served. In less than three weeks the weight of fowls or chicks thus treated can be nearly doubled; and although they are never released (except to be slaughtered), after going into harness in this apartment, they quickly become accustomed to this queer mode of feeding, and rather enjoy it. Their food is of the most delicate and nutritious kind, mixed with milk (not water), and they thus fatten very readily and kindly. Mr. Baker is now enlarging this house, and expects to be able another season to force, say, fifty thousand cocks and hens by this well-conceived and really profitable plan.

From his two thousand laying-fowls Mr. Baker can get but a tithe of the eggs he desires, with which to supply the requirements of his immense incubating-establishment. He uses them all, however, as fast as they are laid, and he gets a great many in a year, of course. But he remarks: "I am not a seller, I am

a buyer, constantly. I offer nothing for sale. All I can do in the chicken-raising line is disposed of as soon as the birds are big enough to eat. I constantly advertise for eggs in quantity for hatching, and I can always dispose of five to ten thousand at a time, could I procure them fresh and reliable for incubation."

He now has the capacity for hatching and rearing in a twelve-month a *quarter of a million* chickens, and he is ambitious to double this production, for he is certain of a ready market* for them all, as the weeks and months go by, annually. There is no limit to the product, indeed, when managed upon Mr. Baker's system. And, though there be few Americans who will ever approach this gentleman, probably, for extent of operation in this sort of enterprise, yet, in a more moderate way, where hundreds instead of thousands of dollars need to be invested, and where the poultry-raiser is contented with hatching tens of hundreds of birds for market, instead of tens of thousands, the example of Mr. Baker may well and profitably be emulated. But it will need brains, patience, culture, tact, experience and ready means, as well as a love of the work, to insure success upon this plan, even on the far lesser scale.

The magnitude of this splendid undertaking, as conceived and carried out by Mr. Baker, is altogether exceptional in the way of raising domestic poultry. There is no establishment like this in the known world, considered either as to cost, extent or mode of management. On a small scale, comparatively, we have had steam-hatched and other artificially incubated chickens, both in this country and in England, in the past twenty years. But it has been left to an enterprising, talented, scientific and wealthy American to achieve this crowning triumph in the "art of hatching and raising domestic fowls" in large quantities successfully, and eventually to good profit.

This has been accomplished, however, after long and careful experiments in every conceivable way; and the skilled operator has not only devoted years of time and constant toil to his work, but he has expended and invested in actual cash upon this enterprise, what most of us would esteem a very pretty fortune, by itself—seventy to eighty thousand dollars!

Although everything about this mammoth establishment is so extensive, the simplicity and economy of the entire arrangements are strikingly apparent. Nothing appears to be lacking for the comfort, shelter and accommodation of the fowls, old or young; and an enormous sum of money must evidently have

been expended, first and last, to bring this place and its ample conveniences into their present acceptable shape at Cresskill.

The care of the fowls and chicks is continually an object of concern to Mr. Baker and his assistants. And though his laying-house is so large, (equal to the accommodation of over two thousand adult fowls together, in the seventy-five pens), he has already prepared the ground for the purpose, and will shortly extend his building to about eight hundred feet frontage, adding three hundred and fifty feet in length to its present size. This will, in all, give space for one hundred and thirty-five pens, to accommodate, under one roof, about three thousand five hundred laying-hens and companion roosters.

Sitting-hens are of no account in Mr. Baker's economy. He does not use them. From his large supply of grown fowls he obtains all the eggs he can, for incubating artificially; but he purchases, at about three times the ordinary wholesale price, the large majority of the tens of thousands of eggs he uses in hatching and experimenting annually.

He pays, on the average, five dollars a hundred for all the eggs he can have delivered to him in proper condition—fresh-laid, sound and hatchable. His correspondence is large, for strangers are attracted by his continuously advertised offer of this price for all the eggs he can obtain, and find serviceable.*

The estate of Mr. Baker faces the North River, upon the westerly bank, and his country-house and grounds occupy the

* I have been frequently applied to by correspondents who ask me to furnish them with a recipe for saving eggs, for family use—and in response, an infallible mode for preserving eggs fresh, and in perfect condition through the year, is given here. This plan is for saving eggs *for consumption, or sale, only—not for future hatching.* In June, July and August, eggs are worth a cent and a half each, on the average. This is the time to “lay them down” most economically. From Thanksgiving to Christmas, they bring four to five cents apiece. The gain to any family by this simple and certain means, (or to the egg-seller), is apparent. The cost of the process is but nominal. Lay your eggs down in the fall, or summer, in a liquid composed as follows: one quart of lime, and one quart of common salt, dissolved in eight gallons of boiling water. When COLD, put your eggs into this liquid, *in stone-jars*—and they will keep for months. I have tried this method many years, and have never met with failure.

A New York firm writes me recently to enquire “if the use of stone-ware jars is indispensable?” *Yes.* The above preparation cannot be successfully used in *wooden*, or common soft *earthen-ware* vessels—as the chemical properties of the combination I recommend does not work well in any jars save those described—and I have experimented with *all* sorts.

It may be that new *hard-wood* kegs, or small sized barrels, might answer the purpose for preservation, in quantities, for a limited period. But I have found that the shells of eggs thus kept for eight to ten months at a time, will grow tender; and they would not I think afterwards bear much rough handling—for example, in transportation. G. P. B.

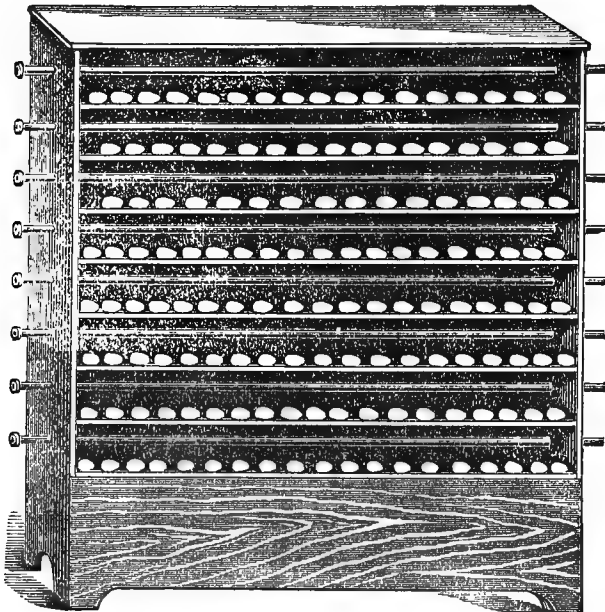
front of his farm, which runs in a gentle slope back from the river, upon the highest portion of the well-known "Palisades." The face of the perpendicular rocks that form the extreme frontage of this point on the Hudson is so squarely upright that a stone dropped from the extended hand, over the railing before his summer-house, will fall in a direct line to the gravelly margin of the river below, a distance of five hundred and sixteen feet.

The premises are comparatively new. That is to say, Mr. Baker had selected this tract of land for the purpose to which he has devoted it, some years ago. But it was then the "primitive forest," almost. It is now cleared up, and handsomely ornamented — his fowl-houses, incubating-house and chicken-breeding arrangements being located at quite a distance from the residence, the pretty artificial lake, the tree-dotted lawn, gravelled walks, etc.

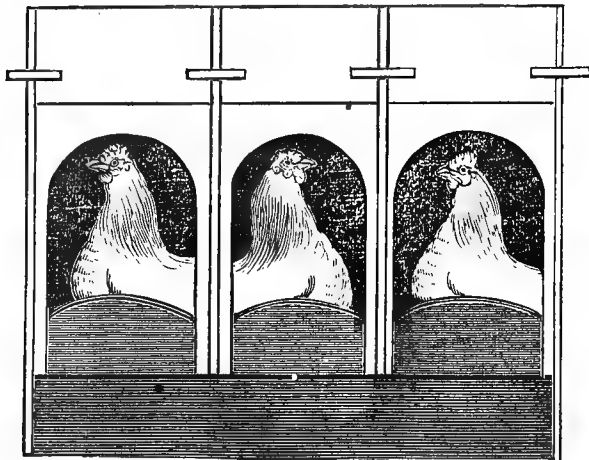
The hen-houses, incubating-house, stables, forcing-house, &c., are all severely plain in their style of architecture, but are costly, extensive and well-built, throughout; and the modes adopted by Mr. Baker to render the interior of the fowl and chicken-rearing premises cool and airy in summer, or warm, healthy and comfortable for his vast poultry-families in winter, are in all respects the most economical, the most practical, and the most substantial for these ranges of buildings that we have ever seen devoted to this business. And thus, while there is no glitter, no unnecessary show, no lavish expenditure for tinsel or ornament, everything is durable, comely, and good, for the uses the proprietor intends it.

The upper lines of sashes, shown upon our engravings on pages 42 and 43, along the tops of both the long ranges of glass houses, are so contrived as to be easily raised upright, or to any lesser height, over each section or pen where the chicks or fowls are confined. This affords ample ventilation at all seasons. The sashes are raised and lowered by automatic contrivance, and the entire buildings, in which both old and young stock pass their days, can thus be quickly and effectually aired, at any hour in the year.

We might add pages of description to what we have herein clearly set down regarding the minor details of this colossal fowl-breeding establishment. But sufficient is now recorded to give the reader a clear idea of Mr. Baker's plans and the general workings of his marvelously well-constructed scheme in wholesale chicken-raising. As a stride in modern improvement



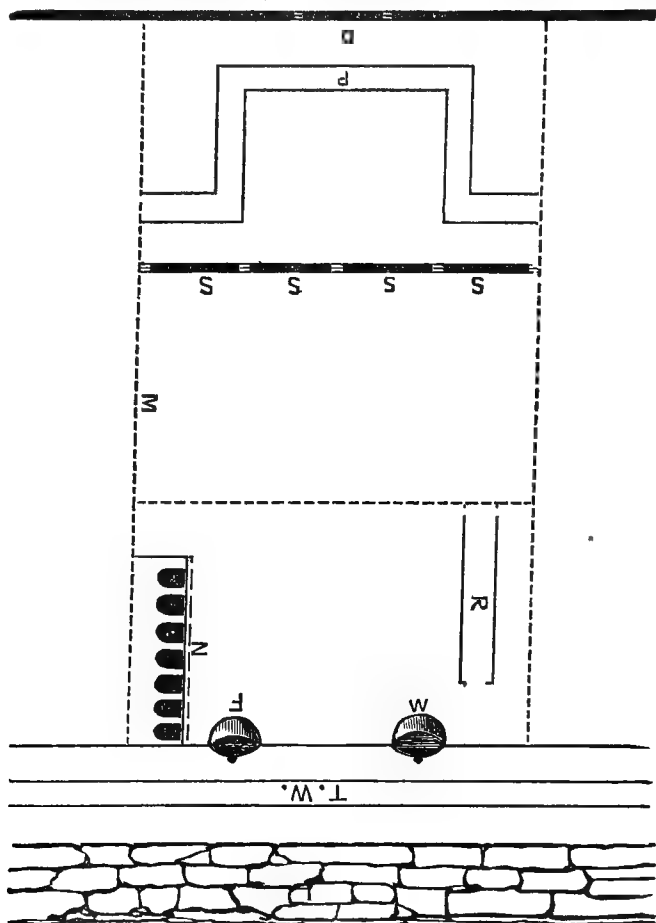
AN OPEN SECTION OF THE GREAT INCUBATOR.



SAMPLES OF BOXED FOWLS, SECURED FOR FATTENING IN THE FORCING ROOM.

towards the indicated end, this vast undertaking has no parallel ; and it may safely be assumed that Mr. Baker's success, in every aspect, is a marvel.

The time of Mr. Baker and his assistants is fully occupied inside and outside of his chicken-houses and incubating-rooms ; so much so, that it is latterly found inconvenient to receive and entertain strangers there. Mr. Baker has nothing to sell from



GROUND-PLAN REAR OF PENS, SHOWING TRAMWAY AND BACK STONE-WALL.

his place. He has already hatched out this year several thousand chicks in his immense incubators, which are now doing finely, in the large brooding-house. He has growing, in a range of boxes hung around the entire length of the brooding-house, beds of lettuce, which he has cut with long shears, to distribute daily among the young birds — a luxury they enjoy intensely.

After a careful survey of the premises, and noting what has been done and what is still in prospect at Cresskill, we conclude that Mr. William C. Baker stands head and shoulders above us all in America as a poultry-raiser, and that his enormous chicken-farm is the largest and most perfect institution of its kind ever attempted, or ever yet consummated successfully, on either side of the Atlantic.

The above account is both interesting and curious. The poultry fraternity of this country will be surprised alike at the magnitude of this undertaking of Mr. Baker, and at its success. Nothing like it exists elsewhere on earth, to-day. And the astonishment is enhanced, that so enormous an establishment for the raising of chickens is found in America!

A few years ago, it will be remembered that the agricultural journals of this country published a long detailed account of the immense fowl-houses and incubating arrangements for the production of chickens and eggs in countless numbers, artificially, of one Monsieur *De Sora* near Paris, France.

After this fabulous account had had its run through the printed journals, and the curiosity of the public had been vastly excited over so curious and astounding a record, it turned out that this thrice magnified tale, "a thousand times o'er-told," had no real foundation at all, in fact! There was no such poultry-establishment in existence, as "De Sora's." There was no such fowl-hatching estate in France. There was no such individual as De Sora. The whole story, from beginning to ending, was *a canard*.

But in the record now made, which is taken from the pages of the Hartford, Conn., "Poultry World" for May, 1877, there is accuracy and verity. We have examined Mr. Baker's great estate, and we have been gratified and surprised — as others interested in fowl-breeding matters have been — at its vastness, its economy, its feasibility, and its entire success.

In a foot-note to page 46 of this book, we have recorded for the benefit of our readers a method for preserving eggs, all the year round, where they are used from time to time, for family

consumption. This is a simple but certain way to keep eggs for future household uses — but they cannot thus be availed of for *hatching* purposes, after immersion in the liquid prescribed, since the preparation permeates the shells, more or less, rendering them tender, comparatively, after any considerable length of time.

We deem this closing chapter on the “raising of fowls and eggs for market, in quantity,” a very valuable addition to our present treatise. And although, as the writer in the “Poultry World” observes, Mr. Baker will scarcely meet with competitors, in the present century, upon so vast a scale as *he* conducts chicken-raising, yet his method of managing the business settles the hitherto long mooted problems that poultry *can* be raised to profit, artificially — and that one thousand or five thousand fowls *can* be kept and reared (as he does it) under a single roof.

This experiment, so successfully carried through by Mr. Baker, has been determined only after a long and earnest trial. The amount of money expended by him during the several years that he has been quietly and unostentatiously pursuing his labors in the work he undertook, has been very large. He has met with disappointment, oftentimes, and his persistence has been remarkable. But his ample means, his peculiar tastes, and his love of the occupation have served to aid him in the achievement of this triumph.

He has demonstrated very clearly that unlimited quantities of chickens can be artificially hatched, and afterwards successfully reared to marketable condition, without the use of hen-mothers. The difficulty of *raising* chicks, after getting them safely out of their shells, is what has troubled all who have hitherto attempted this work upon a large scale — more especially when such effort is undertaken in the cold seasons of our variable climate.

Whatever may come of the record we have now made regarding Mr. Baker's success, it affords us great pleasure to add this interesting account in these pages. And we feel very confident that all who read our present treatise on “raising fowls and eggs in quantity for market,” will be gratified with this valuable addition thus made to our book; from a study of which the ambitious poulterer may learn much that down to the present day has been generally unknown and unappreciated.

A FEW GOOD RULES FOR FOWL-RAISERS.

The limits of this treatise are nearly reached. We must close these pages, and will do this in recommending to the reader the following rules, which we have found valuable in our own practice, and which we deem it essential should be observed, in the main, by all who would rear good chickens economically, healthily, and profitably.

FIRST. — Whatever varieties of fowls you breed, begin aright, by procuring good stock at the outset, and purchase it of known reliable men.

SECOND. — When you obtain such stock, keep it and breed it clean, and do not attempt experiments by "crossing" or mingling it with other varieties, if you wish to produce uniformly the sort you have laid out your money for.

THIRD. — If you are a novice in fowl-breeding, commence with one sort only. You will find this advice valuable. When you have had a year's experience with this, try another — if you like. But never attempt (if you are a beginner) to keep and rear two or three varieties at first.

FOURTH. — Never take it for granted that all the chickens or fowls you see portrayed in the papers are exactly what you can purchase from the advertisers. Such "fancy" pictures often represent individual specimens. But you will anticipate too much if you expect to get such perfect fowls as you sometimes see delineated.

FIFTH. — In the hatching season, set your hens as early in the year as you can, safely — considering the character of the weather. The earlier you can get the spring chicks out, the better — provided you take proper care of them after they are hatched. For the fall and winter, the first birds produced in the year are always the best.

SIXTH. — The above rule will apply particularly to those who raise fowls for eggs or marketing — since the early pullets will lay usually during the following winter, and the young cocks at Christmas will make finer roasters. These are the chickens that mature first, and lay first, naturally — whatever the breed may be.

SEVENTH. — Choose the evening in which to set your hens. The advantage in this method is found in the fact that the fowl always remains more quietly upon the nest at first. And twelve hours in the dark, after she is thus placed, accustoms her to the eggs so that she will prove more steady and contented afterwards.

EIGHTH. At no season will it answer to neglect to destroy the parasitic vermin that infest the hen-houses, the nests, and the perches. These pests must be kept under, or you have no comfort, little regular health among the birds, and few eggs from your stock, however well you may feed them.

NINTH. — Remember that if you can give young fowls and chicks a good range, in preference to limiting them to small contracted runs, they will do fifty per cent. better while they are growing up. And if you are obliged to keep them in limited quarters, their premises should be kept clean, and they should be fed with varied cooked and green food, and boiled vegetables, etc., as well as upon grains.

TENTH. — Do not assume to know all about raising good chickens, until you have learned how it is done. Begin modestly, therefore — read, and study up to your work and ascertain by careful observation and experiment what is best to be done.

ELEVENTH. — Apportion the dimension of your hen-houses to the size of your flocks. Never try to keep a hundred fowls in the space that only twenty or thirty should occupy, for their comfort. Ventilate your houses well, at all times — in cold or hot weather.

TWELFTH. — Prevent the presence of illness among your fowls by good care, judicious feeding, and necessary shelter for them. If they get sick, dose them as little as is needful. A domestic hen or cock requires little medicine to restore them to health, if they

get out of trim. When ill, first ascertain what is the matter with them. Then give them the right kind of treatment to cure their ailment. .

THIRTEENTH. — In making your first purchases of either eggs, chicks or fowls — if you are in search of the best of any given variety, go to head-quarters for what you desire. You will have to pay a little more for your original stock, perhaps, to begin with. You thus obtain good birds, or reliable eggs for incubation; and these will always give you the best satisfaction.

FOURTEENTH. — If you prefer “crossed” fowls, and are ambitious to own only such as are suitable for marketing purposes, or as common layers, there is no necessity to pay “fancy” prices for them. There are plenty of this stock to be had at moderate rates, and for the uses above indicated, these are quite as profitable as any.

FIFTEENTH. — Whatever you commence with, provide your stock with comfortable quarters; feed them judiciously, and regularly; keep your premises cleanly, and afford the fowls good ventilation when housed; let them have clean water for drink, and sound grain for food; keep them free from vermin, and “doctor” them only when they need such service. Thus you may succeed in your wishes, and thus only can domestic fowls be bred or kept to advantage.

These brief directions will help the amateur to hatch, keep, and rear good chickens advantageously, economically, and satisfactorily. It is easy to do this in the right way. It will not prove profitable if attempted carelessly, and conducted negligently.

It should be understood that when well done, no live stock pays so well, in proportion to the outlay required, as does poultry — whether it be cultivated as fancy stock or for its marketable product in eggs and chickens. But, like any other business undertaking, this requires attention, and the exercise of judgment, to render it successful and profitable.

We submit the advice contained in this little volume to those who may feel a desire to embark in fowl-raising, with some confidence — since we have succeeded fairly, ourselves, through such practice. And this brings us for the present to the **END.**



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