THE POULTRYMAN'S COMPLETE HAND BOOK

WHAT TO DO AND HOW TO DO IT

PRATT FOOD COMPANY, PUBLISHERS.

Dedicated to the Upbuilding
of the Great Poultry Industry.

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.....

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WHAT TO DO
AND
HOW TO DO IT

ADDITIONAL COPIES OF THIS BOOK

This book exceeds in value and practical information most poultry books selling from $1.00 to $2.00 per copy. We leave the truth of this statement to the readers of this volume. However, for a time at least, we will mail a copy to any address upon receipt of ten cents in stamps to cover postage, wrapping, etc.

PRATT FOOD COMPANY
PHILADELPHIA - CHICAGO - TORONTO
1913

THE GREAT AMERICAN BIRD

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PREFACE

It is with much pleasure and satisfaction that we present this practical work on poultry culture to our many friends and customers. There are many good poultry books available, and yet we feel that this one will fill a place not already occupied.

As the title indicates, this work is intended to serve as a thoroughly reliable guide to the amateur as well as a help to the experienced poultryman, telling in the simplest way "what to do and how to do it" to reach financial success in the business of poultry growing.

The text is from the pen of one of our staff of poultry experts,—an authority in the field of poultry husbandry, a man who has had wide experience and earned success. He has called to his assistance a number of men and women notable for their prominence in some special line of poultry work, and has drawn freely upon government and agricultural experiment station bulletins for facts of a scientific nature.

The illustrations are from so many different sources that individual acknowledgment is impractical. However we wish in this manner to express our thanks to the different individuals who so kindly supplied them. Some of these engravings have appeared in print before, but are reproduced because of their special value. Others were made especially for this work. As a whole we feel that they will prove interesting, inspiring and helpful. All working plans of houses and equipment are drawn to scale. They are purposely made so plain and simple that anyone can easily follow them, even though unskilled in reading drawings.

We desire to call particular attention to the chapters on some specialties which many farmers and poultrymen may profitably develop where conditions are right, viz., the growing of turkeys, water fowl and squabs.

The complete index in the back of the book will be found most convenient, enabling the busy reader to quickly refer to any topic in which he is specially interested.

On pages 157 and 158 will be found a complete retail price list of the various guaranteed poultry preparations sold by this company. We call particular attention to these goods as we feel confident that they will prove a wonderful aid to every poultry keeper who wishes to make and keep his birds healthy and productive, and, therefore, profitable. Each article in this list is designed to meet a special need. Each has been thoroughly tested and each is the best of its kind. Each one may be used with entire confidence, since we stand behind them all with this broadest and best of guarantees, "Your money back if it fails." This means no argument, no trouble, just the money!

During the past forty years this company, the oldest in this line, has been doing business with the poultrymen of America. These four decades cover the period of the greatest development of the poultry industry, which to-day holds a leading place among special agricultural pursuits. We feel that we have played an important part in putting the industry on its present firm basis by assisting untold numbers of poultry raisers to make their work safe and sure instead of uncertain as in the old days. That they have recognized this has been manifested by a constant and increasing patronage, which alone has made possible the extension of our business to its present large proportions.

To our friends, old and new, we pledge a continuation of our long-established "square deal" policy. We wish to help our friends achieve success, as this is the foundation of our success. We have great faith in the poultry industry, and expect to continue to be a factor in its extension and development.

And so we present this book, believing that it will prove a safe guide to many poultry keepers, beginners and old hands, enabling them to make their flocks more profitable and the work of caring for them easier and pleasanter.

PRATT FOOD COMPANY.

CHAPTER I

THE POULTRY INDUSTRY

A ONE-MAN PLANT PAYING $2000 PROFIT PER YEAR

Agriculture as a whole is the foundation of our national prosperity. Agricultural values are real, not fictitious. The farmer has nothing to do with the floating of watered stocks or bonds of questionable value. Neither is he, like the manufacturer, a worker in raw materials drawn from other sources. He is a creator, working miracles in his corn field, his meadow and his barns, bringing into being each year materials which are so essential to the comfort, the happiness, the very life of the race.

American agriculture has made an astonishing advance during the last quarter of a century. In a recent report covering the work of the Department of Agriculture for a period of sixteen years, Secretary Wilson points to the fact that in this comparatively brief period the annual value of our agricultural products has increased from four billion dollars to nine billion five hundred million dollars. These figures are so vast as to be almost incomprehensible, but they serve to demonstrate that the agricultural products of 1912 were practically two and a half times greater than they were but sixteen years ago.

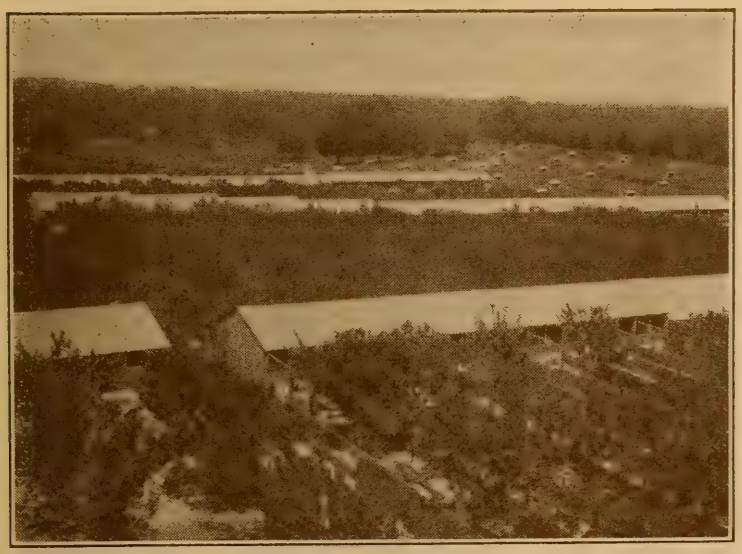
Practically every single branch of agriculture has shared in this wonderful development, but none has grown with such rapidity as has poultry husbandry. The annual value of our poultry products has increased enormously, until the dream of a " billion dollar poultry industry " bids fair to become a reality in the immediate future.

Poultry keeping is the one branch of agriculture that offers opportunties to people of both sexes, all ages, all walks in life, all sections of the country. It may be made profitable alike on the farm and in the city back yard; in the ice-bound North and the sunny South. It may be carried on as an exclusive business or a side line. It affords pleasure for rich and poor alike. In short, it is the universal agricultural industry. Thousands of interested men and women find in it a

THE FREE RANGE SYSTEM
Inexpensive colony houses without yards. The stock is permitted to range at will.

means of livelihood; untold numbers use it as a means of adding to their incomes from other sources; many make it a health-giving recreation.

As an exclusive business, poultry raising is properly a farm business, though as a hobby or side line it may be satisfactorily conducted on the small area of land afforded by a city or suburban home lot.



THE INTENSIVE SYSTEM

Long houses divided into small pens, each having a narrow yard in front.

In fact, poultry may profitably be kept under a very wide range of conditions, though it is not wise to attempt to expand the business to commercial proportions unless the surrounding conditions are favorable.

In a general way, poultry keeping possesses more advantages than any other single branch of agriculture. However it is not entirely free from serious disadvantages.

When making a start, a comparatively small investment will serve. Low priced land, not suitable for general farming, will often serve admirably. Old buildings may at small cost be converted into satisfactory poultry houses. Most of the necessary equipment may be built at home at small cost.

Poultry keeping may be started on a small scale, as in conjunction with some other business or employment, and expanded as experience warrants and profits permit.

TWO-PEN HOUSES WITH LARGE YARDS

So much land is given each flock of birds that they have practically free range, and still the various flocks are kept separate.

Prompt returns are secured on the investment, and the working capital can thus be "turned over" frequently.

Poultry products of various kinds are seasonable throughout the entire year, and the plant may be so managed as to yield some revenue each week of the fifty-two. There need be no waiting for cash until the big crop is sold, as is the case in orcharding, hay or grain growing.

The poultry flocks are a benefit to the farm, increasing the fertility instead of being a drain upon the land.

Poultry products of various kinds are concentrated and valuable, and are, therefore, easily marketed. They may, at small expense, be shipped to distant markets where quotations are more favorable than near at hand.

The regular work of caring for the poultry can scarcely be called hard labor, especially where the plant is conveniently arranged and the necessary labor-saving appliances provided. It is interesting, many find it actually fascinating, and every member of the family can attend to certain duties without overtaxing their strength.

Poultry products are in constant and increasing demand, and there is a practically unlimited market for them at fair prices.

There seems to be little if any danger of the business being overdone.

Poultry keeping is a most healthful occupation, since it keeps the worker out of doors a great deal of the time and is not likely to become monotonous, since each season brings a new round of duties.

The disadvantages of the business seem to be about as follows:

Since poultry raising is a business of endless detail, it demands constant attention. In short it is a seven day job, the birds requir-

MEXICAN GAME COCKS

Fighting games en route to the cock pit, each in a separate basket to prevent them injuring each other before the "sport" begins.

GIVE THE BOY A CHANCE

ing attention on Sundays as well as week days. There are no seasons of comparative inactivity during which the worker can be away from home for days at a time. This often means chafing, uneasiness, discontent. Much depends upon personal temperament.

The business is more or less uncertain, owing to conditions beyond the control of the poultryman. The weather, prices of feeds and supplies, and the returns from the sale of the products, vary from year to year.

And finally, the poultryman deals with living things which as yet are not fully understood and which cannot always be controlled. Death will come in, causing serious loss among young and old stock alike; pullets will refuse to lay in spite of conscientious care; eggs will fail to hatch, though all possible precautions have been taken.

But serious as these drawbacks are they do not offset the many advantages of poultry husbandry. Poultry growing is a good business and a safe one. It offers much of interest, satisfaction and profit to the farmer, the village resident and the city dweller, according to their varied opportunities.

Much has been written lately about the possible profits to be derived from this line. It must be confessed that some of these statements are overdrawn, and that they hold out false hopes to the inexperienced. As a matter of fact poultry farming is not a sure road to great wealth; it is not a get-rich-quick proposition. It does offer a fair return for intelligent labor, a comfortable living and the means of acquiring a reasonable competence. Few men have grown rich, as we measure riches today, in poultry keeping. Many have made themselves more than independent. There have been failures too, but the same can be said of every profession and every other business.

Poultry keeping, an agricultural specialty, is itself highly specialized. Most successful plants are devoted to some one line of work, or a few closely allied lines, one primary and the others secondary. A number of poultry specialties naturally group themselves together, fitting into the general scheme without interfering with each other, and such combinations are frequently made. For instance, the fancier whose interests are wrapped up in the production of show specimens, enters the commercial field where he sells for table use his inferior birds and surplus eggs. The egg farmer is a market poultry producer to a certain extent, since he must dispose of his old hens and the cockerels from his yearly crop of young stock.

As a sort of general classification poultry keepers may be placed in two general groups—commercial poultrymen and breeders. (This division is not exact, as the two groups overlap.) The former devote themselves to the production of table poultry and eggs; the latter to the production of exhibition and breeding birds, baby chicks and eggs for hatching.

These two groups may be again divided according to their principal products, as eggs or meat, etc. We also find further sub-divisions. Some egg farmers endeavor to secure the largest output during the winter months, the season of highest prices. Others pay little attention to winter egg production and bend every energy to securing eggs during late spring, summer and early fall for sale at summer resorts. Many are interested most of all in getting *numbers* of eggs, paying scant attention to their quality; others place *quality* first and cater to hospitals and other institutions which demand the freshest of stock produced under the most sanitary conditions.

Growers of poultry meat may devote themselves largely to a single line, as chickens, ducks, geese, squabs and turkeys. Chicken growers

in turn may pay special attention to the production of broilers, capons or roasting chickens.

The same condition exists among the breeders. There are specialists in different classes and breeds of poultry. Some are most interested in the growing of strictly fancy or exhibition stock. Others cater to the demand for birds of superior practical value, either as egg producers or table poultry, selling breeding birds, baby chicks or hatching eggs.

A recent addition to the list of openings for poultrymen is custom hatching. This has followed the introduction of practical incubators of large capacity, the so-called mammoth machines. These are so easy and economical to operate, that hatching may be done " to order " at a very low rate. There seems to be a tendency toward the establishment of custom hatcheries, central hatching stations, where this important part of the poultryman's work can be done for the whole neighborhood. Such a departure from present methods merely marks a return to a system that has long been followed in Egypt and China, where the practice is a common one, the trade or art being handed down from father to son, like other established businesses.

In many cases these central hatcheries have proven very profitable in America and Canada, and one may reasonably conclude that before many years they will be found in practically every community where much poultry is raised.

Now a very pertinent question often raised by prospective poultrymen is this—" what financial return may one secure from the various branches of poultry husbandry?" This is a very difficult question to answer satisfactorily, but the following figures will serve to give a general idea of the possibilities of the business.

In this connection it is only right to remark that farm incomes cannot fairly be compared with city incomes, as the conditions are so different. The farmer counts his profits after meeting most of his family expenses. The city worker usually refers to the gross amount he receives. On the farm one has a house to live in, more or less fuel, fruit, vegetables, milk, eggs, etc., which make a serious drain on the city income. Employes on poultry farms receive room and board in addition to the monthly wage, but in the city these are paid for out of the income. This makes a big difference and shows why a farm income is usually relatively larger than a similar sum earned in the city.

Competent poultrymen working on established farms commonly receive $40 to $60 per month, together with board.

Capable managers of poultry establishments are paid according to their ability and the extent of the business. $75 to $100 per month is not uncommon. A few receive from $1500 to $2000 per year. One very successful man is reputed to receive a salary of $3000 per year, in addition to valuable perquisites.

A "spare-time" plant operated by a business man who makes a specialty of exhibition stock pays a profit of $1300 per year.

A one-man plant, illustrated at the head of this chapter, pays from $1500 to $2000 per year. This is a strictly commercial establishment and carries from 800 to 1000 birds.

Two "egg farms," well known to the writer, pay $2500 and $3000 annually.

Producers of "soft roasters" in the South Shore district are in some cases cleaning up from $2000 to $3500 per season.

Duck rearing establishments are often developed to a great size. Some are reputed to make an annual profit of $5000 to $10,000.

Successful fanciers often make nice profits from small flocks of birds, since they sell eggs and stock at prices many times greater than these would bring if marketed for table use. But the commercial end of the business is safer for the beginner, who will naturally develop into a fancier after securing some of the necessary practical experience, provided he possesses the proper qualifications and temperament.

The best possible advice to the beginner is about as follows:

Begin small; play safe; follow accepted practices of successful men; test your untried theories—if at all—in a small way: learn how to do the work before attempting to surpervise others; save a part of your capital to work with; adopt one suitable breed and stick to it; carefully study your market and cater to it; stick to your work until you have overcome your difficulties: use Pratts Poultry Preparations to make your work easier and results surer.

CHAPTER II

POULTRY BUILDINGS

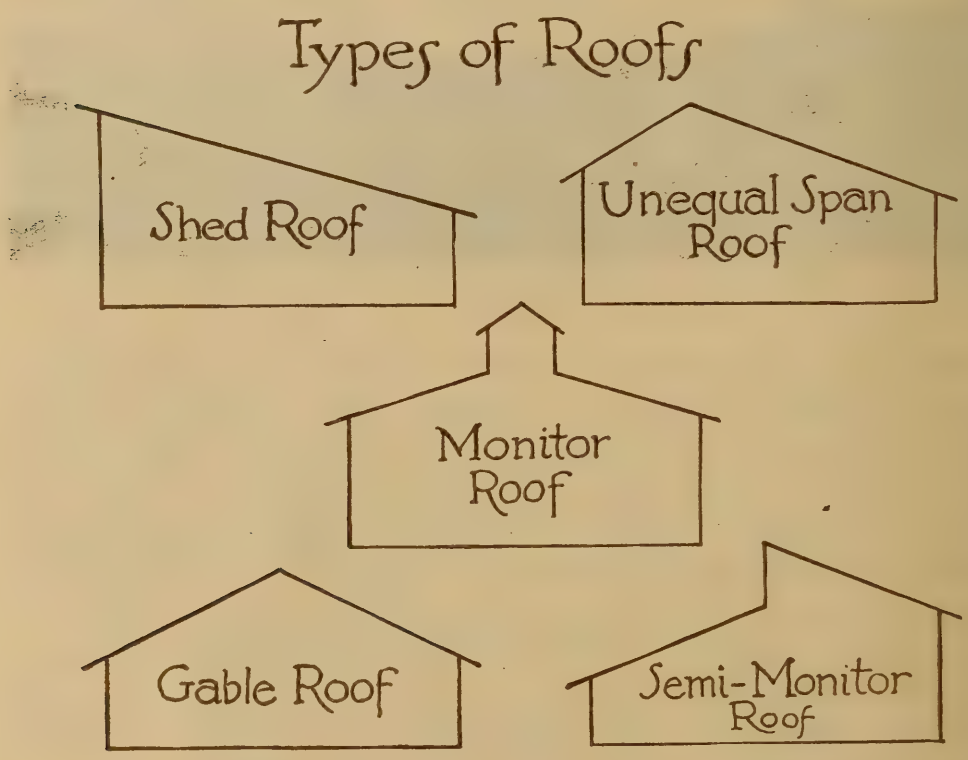
LONG BREEDING HOUSE WITH ATTACHED RUNS

There is no mystery about the construction of poultry houses. Neither is there any one type of building which embodies *all* advantages and possesses no disadvantages. There are about as many kinds of structures as there are poultry keepers, each one incorporating features which are desirable, or which are thought to be desirable. Within the limits of a volume of this character it is obviously impossible to illustrate and describe these endless variations. Therefore we will merely discuss the principles of poultry house construction, present the designs which today are giving general satisfaction, and reproduce photographs and building plans of structures which have given the best satisfaction on successful poultry farms.

Every poultry building, regardless of type, materials used, or size, must meet certain very definite requirements, and any structure which does this will give good results. Briefly stated these essentials are as follows: For the health and comfort of the birds each house must be dry, well ventilated, free from draughts, sunny and cheerful, and contain sufficient room for the flock. In addition to these considerations, the poultryman will do well to consider the desirability of economy of construction and convenience. An inconvenient building often causes one to neglect some of the daily duties, which means that trouble and loss will soon follow.

Stated briefly, the *dangers* to be avoided in poultry house construction are *dampness, draughts, darkness, dirt.*

The materials commonly used are lumber, shingles, cement, building paper and prepared roofing. Most poultry houses are built of wood, since it is comparatively inexpensive, fairly durable, and almost anyone can work it. Cement is sometimes used where sharp sand is available and the owner can manage the work. Hollow building tile plastered with cement make excellent walls and floors, but in most places their cost is prohibitive.



Since warmth is not essential to adult fowls, the expense of heavy construction is not usually justified. In fact, experiments in heating the quarters for laying and breeding stock have clearly demonstrated that this is neither necessary nor desirable.

On the other hand, chicks must be protected and kept warm, so brooder houses should be tightly built and provided with some means of heating.

For convenience, poultry buildings are classified according to size and shape, as long, or continuous houses, and colony houses. The former are large buildings, extending east and west, and usually

PORTABLE COOPS FOR YOUNG STOCK
A shady range for growing birds is most desirable.

divided into pens of various sizes. Colony houses are small buildings, containing one or two pens, and may be either fixed or portable.

In type, poultry buildings are either closed or tight, curtain front or open front. The former are equipped with tight fitting windows and doors, and are ventilated by adjusting these openings. The curtain front houses have large openings in the south wall which are closed during storms and cold weather by frames covered with thin

SIMPLE "A" SHAPED HOUSES
On this plant the breeding birds use one large run in common.

THE "GO-WELL" LAYING HOUSE

This building is 20 feet wide and each pen is 20 feet square. A trolley for carrying feed runs through the center of the building.

cotton cloth or muslin. The open front houses have similar openings, but these are never closed, regardless of weather conditions.

Very few tight poultry houses are now being erected, and existing structures of this kind are being converted into the curtain front type by removing the windows or cutting other openings. The reason for this is plain; curtain front houses give better satisfaction than those of the closed type. The latter were built with the idea of conserving the heat generated by the hens. As a matter of fact they are usually damp and chilly, because of the condensation of moisture on walls and ceiling, due to insufficient ventilation.

The open front house is a step further, and does away with the adjustment of curtains and doors, permitting a constant flow of fresh pure air into the building at all times. The objection to this plan lies

LARGE COLONY HOUSES AND FREE RANGE

An ideal arrangement for poultry on a general farm. Each house is 20 feet square and shelters 100 layers.

in the fact that during driving storms much rain and snow will be forced into the house, causing more or less dampness. The bad effect of this is offset by the constant circulation of air, yet many owners of these houses are equipping them with curtains, which keep out storms without entirely checking the ventilation.

The character of the buildings erected will be determined by the methods of management decided upon. On farms where the birds are given free range, the colony system, the small house is necessary. These may be placed upon permanent foundations, or made portable as desired. On some farms such structures are never moved. On others they are located in different fields each year, and are frequently clustered near the rest of the farm buildings during the winter season.

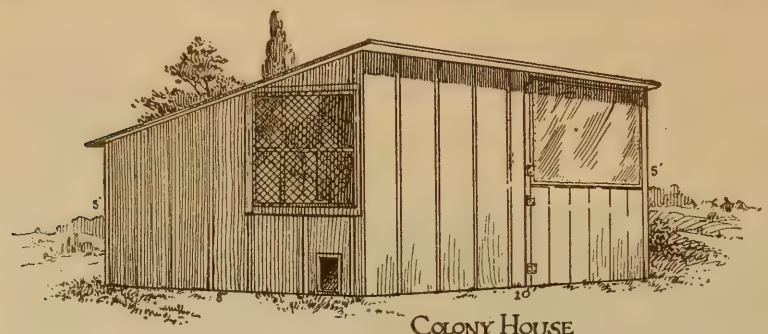
SCRATCHING SHED HOUSE.

Each pen of birds has a closed roosting room and an open-front shed for exercising. This type may be built singly or as a continuous house.

CURTAIN-FRONT HOUSE

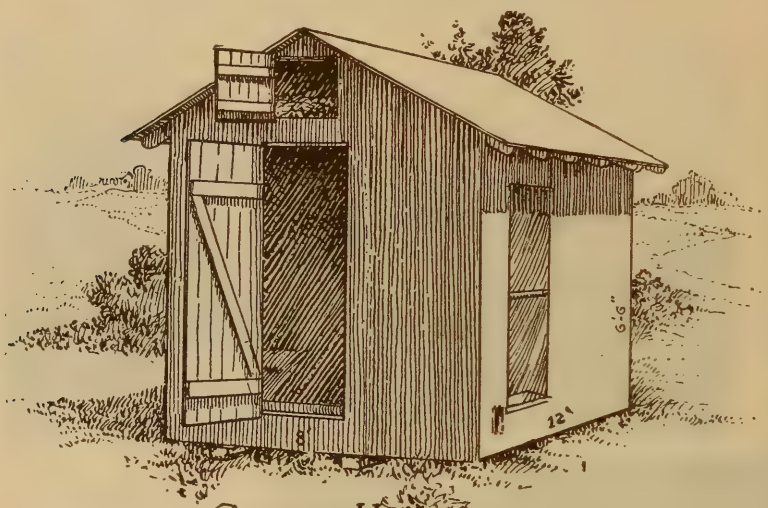
A simple structure which has given good service. Cloth-covered frames, hinged to the plate, are dropped down during storms and extremely cold weather.

On intensive plants, where the poultry operations are concentrated upon a relatively small area, the long house is very popular. Such buildings are convenient, as they concentrate the stock where it may be cared for without waste of time. However the present tendency is to set such buildings at a considerable distance from each other and



COLONY HOUSE
(JOCOY TYPE)

This house was specially designed for the growing of winter chicks in small lamp brooders. Note the "Dutch door" made of two small doors, the upper one merely a cloth-covered frame.

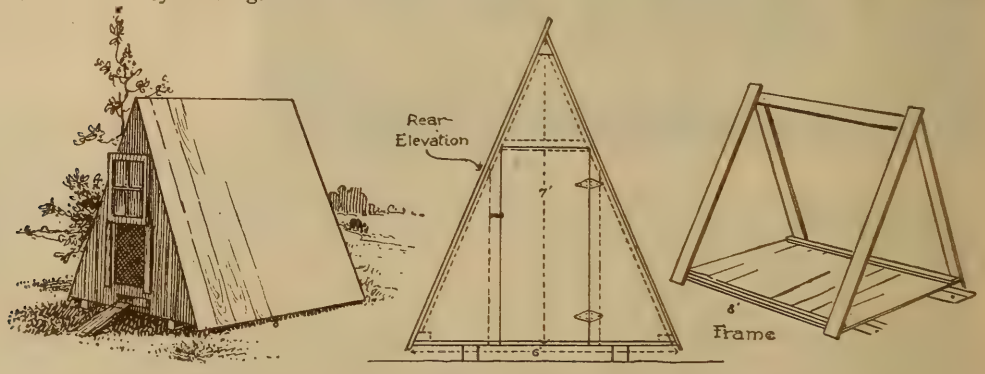


COLONY HOUSE
(Elford Type)

Especially suitable for cold climates. The roosts are placed in the end opposite the door, and this part of the house is double boarded. The ceiling is made of strips set 2 inches apart, and the loft is filled with straw, through which the necessary ventilation is secured. Note small door opening into this straw loft. The building is mounted on skids for easy moving.

thus allow the stock a considerable area of land over which to wander. The old idea of cutting the flock up into families of ten to fifteen birds, allowing each pen a restricted yard, is gradually breaking down. The popular plan today is to keep the stock in large flocks, a hundred or more birds, and allow them to use in common the land that was formerly cut up into yards.

The above

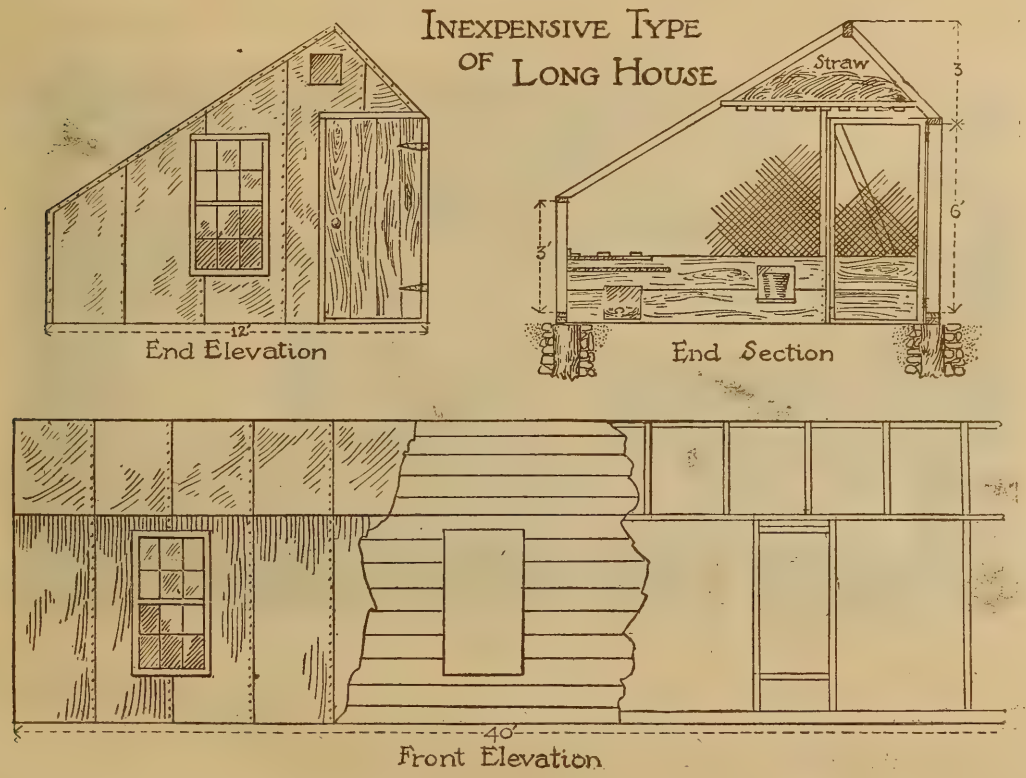


"A" SHAPED COLONY HOUSE

This little house is simple in construction, light in weight, and easily moved. It is convenient for many different uses, since it will house a small pen of breeders, a bunch of surplus cockerels, or a flock of chickens. Much liked as a colony brooder house, a small portable brooder being placed in it, and removed when the chicks no longer need heat.

does not apply to the breeder who of necessity breaks his flock up into small families.

Increasing the size of the flocks works to the advantage of the poultryman in two ways. It reduces his labor and increases the number of birds that may be kept in a certain building. The floor area *per hen* may be reduced as the pen is increased in size. This is due to the fact that each bird actually has the use of the entire pen. If but five hens are kept together they should be given about 10 square



This 40-foot house was built on contract for $100. It is located on a farm where it has given much satisfaction. The roof and sides are rough boards covered with roofing material. There are four pens each 10 by 12 feet in size.

The building might be improved by making a good-sized opening in the front of each pen, fitting same with a cloth-covered frame. As built, ventilation is provided through the straw loft.

feet of floor surface per bird, say a pen 5 by 10 feet in size. Increase the flock to 100 birds and the floor space per bird may be reduced to 4 square feet, a house 20 feet square. That is, a pen eight times larger than the small one first mentioned takes care of twenty times as many birds.

An even hundred birds to the flock seems to be a very convenient unit to work with. Many poultrymen are having success with two to

five hundred in each flock. Everything depends upon the man behind the birds.

The rear alleyway which was a feature in every long house a few years ago is disappearing with the pen partitions. When a house is divided into many small pens the alleyway is a big convenience, but when there are but two or three large pens the necessity for it disappears. This again is economy, as the usual alleyway takes up about 20% of the floor space, and this might better be devoted to the stock.

A very good substitute for the old time alleyway is an elevated walk along the front of the building. The birds may be observed and

THE ORIGINAL LAMBERT LAYING HOUSE

One of the best houses for general farm use. 14 by 28 feet in size, divided into two equal pens by solid board partition from floor to peak. The dropping boards and roosts are placed along this partition, with ventilating opening below and window above. The large openings in front may be closed with cloth frames, hinged inside at the front corners of the building.

pens entered from the walk, and the cost of this arrangement is slight. The birds may pass out the south side of the house as usual, since the raised walk will not interfere with their movements.

The proper location of the poultry house is a matter of prime importance. A poor location may make the best built house unsatisfactory.

Wherever possible, the poultry house should be sheltered against driving storms and cold winds. (Of course this does not refer to the warmer sections of this country.) But though protection from sweeping winds is desirable, it is equally important that suitable air

drainage be provided. Avoid spots in which the damp air settles and remains. Far better be on a hill exposed to the winds from all quarters.

The house should stand upon soil that is well drained, either naturally or artificially. A sandy loam soil gives the best satisfaction, and if the surface of the land slopes to the south, or slightly east of south, the location is ideal.

When erecting each house see to it that roof, back and end walls are tight. The front, or south, side is not of so much importance. The main thing is to leave sufficient openings for sunlight and air.

The floor is important. This must be dry. In a naturally well drained soil an earth floor is as good as any. Merely fill in a few inches above the ground level. In small portable coops or elevated houses, use board floors. Cement floors may be used in permanent buildings, especially in damp locations. Give such floors a thorough coating with hot tar. This checks all moisture.

All buildings should be located with reference to making the daily work as easy as may be. Care in planning saves many needless steps. Keep down the labor. It is one of the greatest of poultry farm expenses.

Where yards are provided, let them be roomy. On the general farm and on most poultry farms, the wire fencing may well be used to enclose the house, lawn and garden, giving the birds their freedom over the rest of the farm. This reduces labor and feed bills and insures very satisfactory results.

Farmers still have much to learn about making poultry work on the farm, but there are great possibilities here.

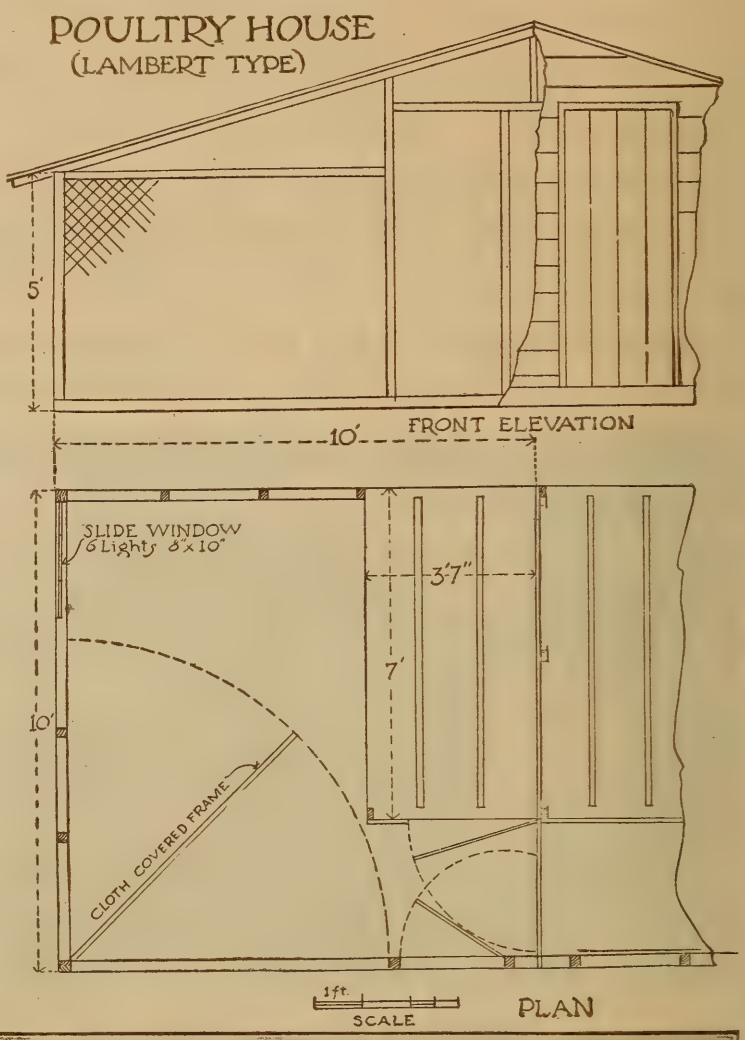
Of late there has been a tendency to do without yards or range for the laying birds, keeping them confined to their well ventilated houses at all times. Under this system the pullets are worked one year, and then marketed. This plan is of most interest to the poultryman whose ground space is limited.

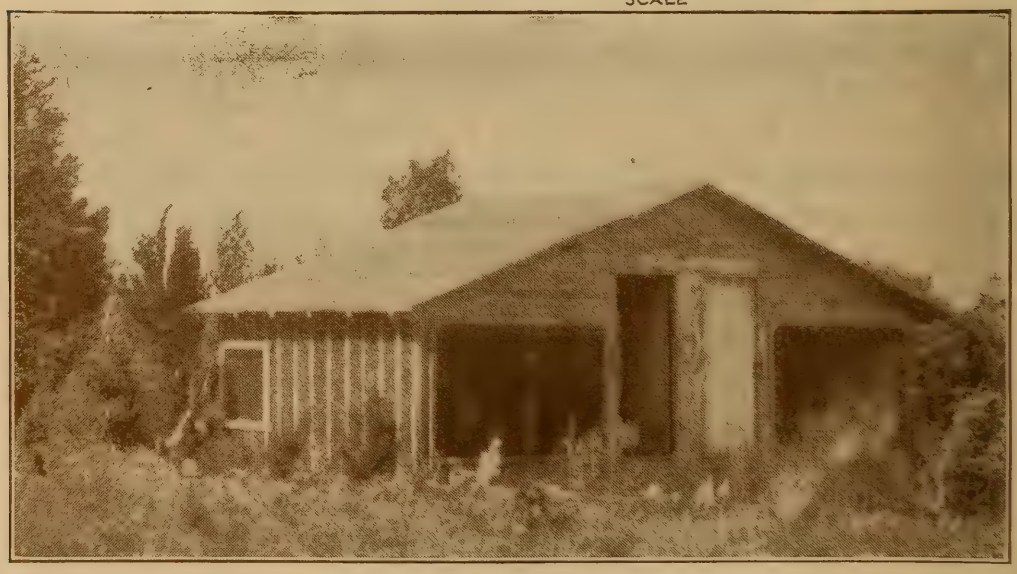
The cuts and drawings given space in this chapter so clearly show the various types of buildings that but little further explanation is necessary. However there are a few points which should be brought out.

In the evolution of the modern poultry house we can trace several steps, the earliest of which may be disregarded. The closed front house was the favorite type for many years. The first step in the

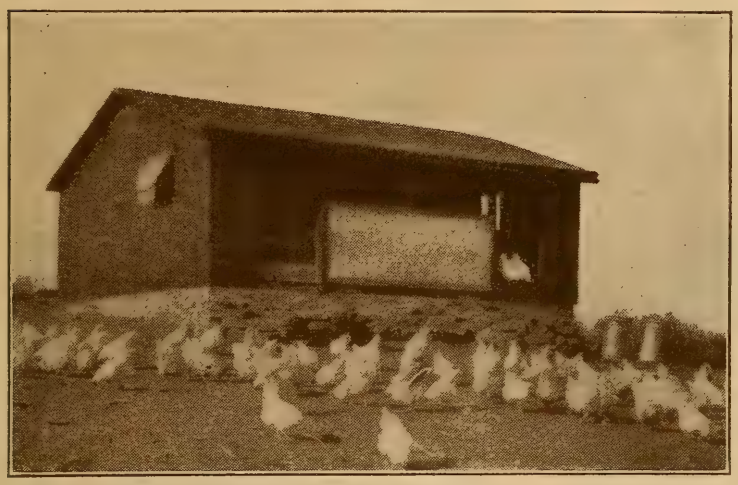
direction of fresh air housing came with the introduction of the scratching shed house, in which each pen of birds was provided with the popular tight roosting room, but in addition was given an open front shed in which to exercise during the day. These sheds were fitted with curtains which were closed whenever necessary.

Houses of this type were built of varying length, the roosting





AN ADAPTATION OF THE LAMBERT HOUSE
See plans above. This house is 10 by 20 feet and accommodates two pens of breeders.



THE GILLETTE HOUSE

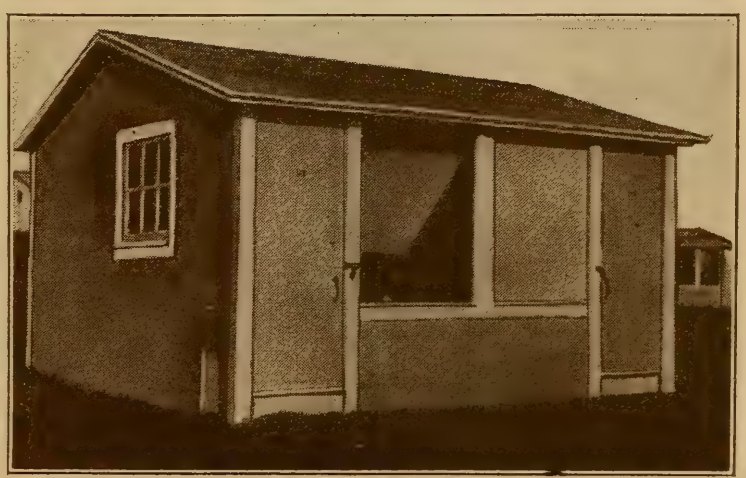
A most satisfactory home for a flock of 100 birds. It is 20 feet square, convenient, comfortable, sanitary.

rooms and scratching sheds being arranged in pairs.

Next came the form of building in which the birds were given but a single fresh air compartment, though protected at night by a roosting closet. Houses of this kind are the Maine type—of which practically all of the popular long houses of today are mere modifications—the Lambert type, etc. In practically all of these houses the protected roosting closets have been abandoned, but the birds roost well back from the curtain fronts.

The Gillette house is a very good type, and may be used for a variety of purposes. Because of its square shape it is an economical building to erect.

The Tillinghast type is about the cheapest form of poultry house that can be erected. It is built in "box" style, the siding running up and down and serving the purpose of studding. Sides and roof are made of one thickness of matched cypress, with no covering. The roof boards run

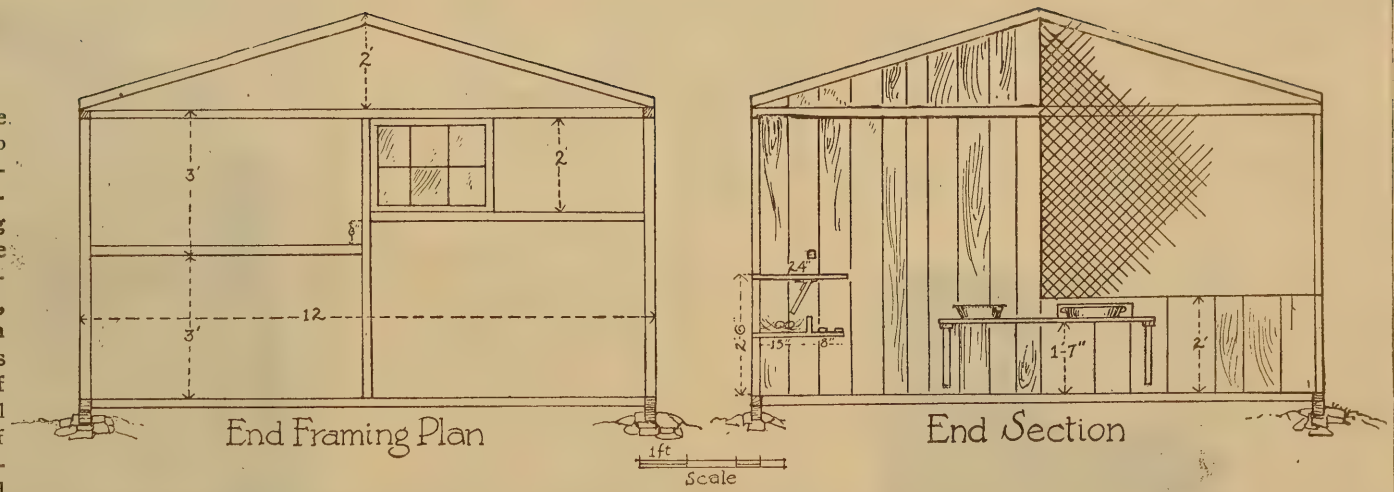


SMALLER HOUSE OF GILLETTE TYPE

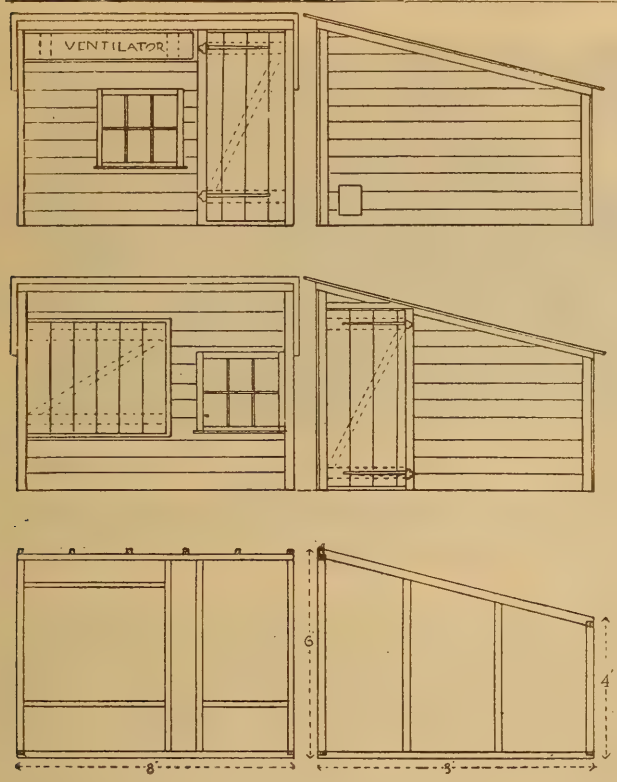
Twelve feet square, divided into two pens. See plan on next

Fifty of these houses were built to house the 100 competing pens in the International Egg Laying Competition at the Connecticut Agricultural College, Storrs, Conn. As built, each house accommodates two small pens of birds. On practical farms the front half of the middle partition, shown in the end section, might be omitted, and the entire building used for one pen of 30 to 35 birds.

Material used: Skids, 3" x 6"; end sills, 2" x 4"; studding, 2" x 3"; rafters, 2" x 3"; siding, 7/8" matched. Roof covered with prepared roofing. Painted 2 coats oil paint.



COLONY HOUSE
(GILLETTE TYPE)



COLONY HOUSE
Two different methods of enclosing the same frame

from peak to eaves. In order to prevent them from warping and leaking they must be securely nailed midway between peak and eaves. A special piece of timber must be provided at that point, as indicated in the framing plan.

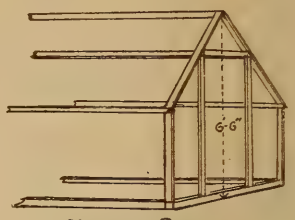
The true open front house is the last word in the fresh-air-for-poultry movement. Buildings of this type have been tested in the coldest sections of America and have made good. It will be observed that all these buildings have relatively low fronts and that they are deep, as measured from front to rear. The small opening prevents too much air from entering; the great depth permits the birds to move back to a sheltered place when necessary.

In the Tolman type provision is made for light at the rear of the house by putting a window in one side wall opposite the door. In the Clarke type the windows in the semi-monitor roof admit the desired light and sunshine.

On every farm where exhibition stock is produced a condi-

A "NO-YARD" HOUSE
Many egg producers are adopting the plan of keeping their laying birds confined to the house at all times, giving them no out-door runs. This house was specially designed for such use.

COLONY HOUSE
(Tillinghast Type)



FRAMING PLAN

tioning or "storage house" is necessary. The building illustrated will comfortably care for a good number of individuals. It will be found most convenient as a place to train stock for the show room; pen surplus males separately to prevent mutilation from fighting; set hens; rear early chicks; etc.

The equipment for brooding the chicks is one of the most important things to be provided. On large farms the long brooder houses with hot-water heating are most widely used. The most popular type at present carries the pipes below the hovers, the heat rising through a central drum in each hover. The manufacturer of the heating

THE TILLINGHAST COLONY HOUSE.

One of the cheapest poultry houses that can be built. The upper cut shows the original house, 10 by 20 feet in size; the lower, an adaptation, 6 by 12 feet in size. The roosts are placed in the end of the building furthest from the door.

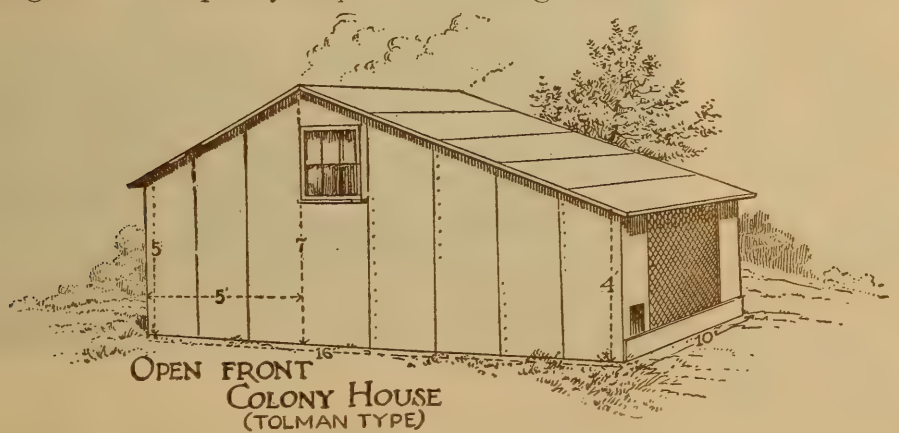
COCKEREL AND CONDITIONING HOUSE

A necessity on farms where many surplus males are carried or birds conditioned for shows. The front portion is divided into small pens, and two tiers of coops extend along the rear wall.

system to be installed should be consulted before deciding upon plans for a brooder house of this character.

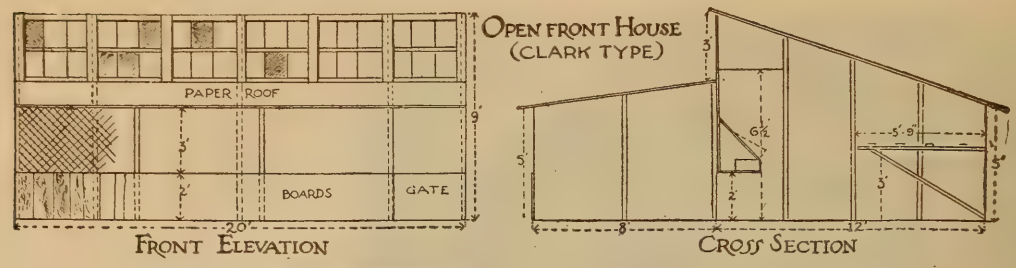
Few poultry plants of small capacity can afford a pipe system brooder house, and many substitutes are used. Generally the portable lamp heated brooders and fireless brooders are adopted and these are located in a small coop, colony house, shed or unused pen in the laying house. Some forms of portable brooders are really miniature brooder houses, and these may be operated out of doors with no additional protection.

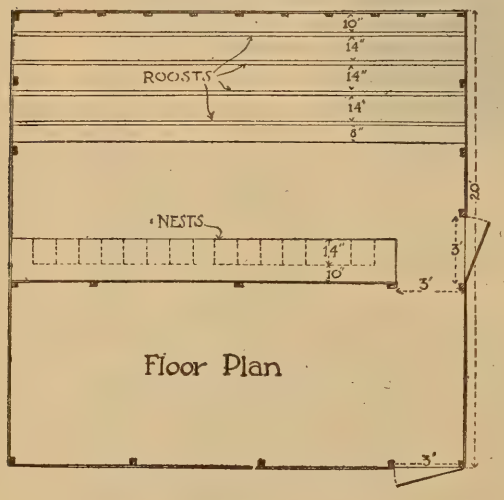
A very popular plan is to place a small brooder in a colony house, leaving it there until the chicks are weaned, when it is removed. The youngsters are left in the house, where they remain until they reach market size or laying maturity. This plan permits one to make a start on a small scale and expand as circumstances warrant. As compared with the long piped brooder system the small brooders having similar capacity require a much greater amount of labor.



OPEN FRONT
COLONY HOUSE
(TOLMAN TYPE)

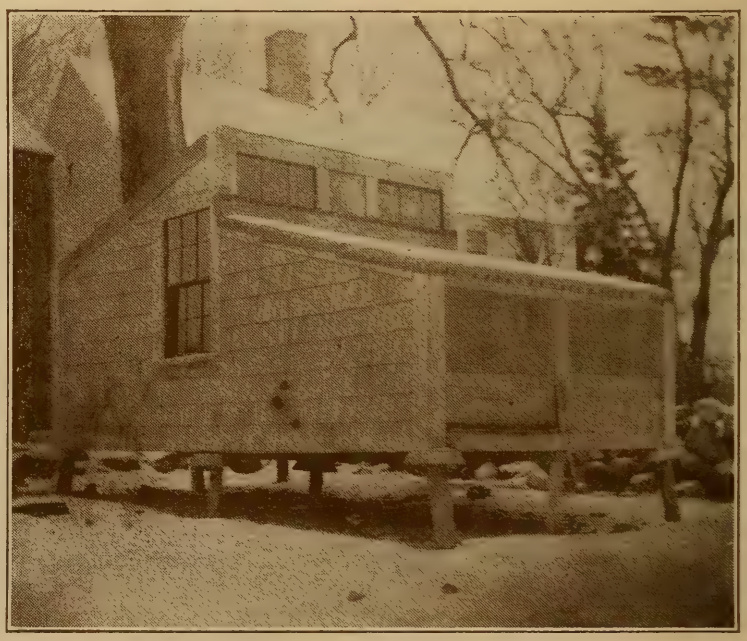
The south end of this house is left open throughout the year regardless of weather. The birds roost at the rear, well back from the opening. This house can be built in colony form only. Not adaptable to continuous construction.





A very satisfactory form of open-front house which may be built any desired length. The solid partition between the front and rear portions is carried to a point two feet above the floor, thus protecting the roosts from draughts.

Even where lamp heated brooders are used the poultryman who raises much of a crop of chicks each year will do well to provide some kind of a special brooder house in order to reduce labor and concentrate his chicks where they may be easily cared for, especially during the first few weeks of their lives. A simple structure divided into suitable pens will serve the purpose nicely. For use in cold weather it will be necessary to provide some additional heat in order to keep the house temperature sufficiently high.



OPEN-FRONT HOUSE OF SEMI-MONITOR TYPE

May be built in colony house form as illustrated, or as a continuous house. The upper windows light and ventilate the rear portion. Frequently called the Woods type.

One of the most convenent types is the depressed alleyway brooder house, which is illustrated by photos and drawings on page 34. This is simply a low house, three and a half feet to plates and five and a half feet to peak, with a ditch three feet in depth in which the attendant stands when attending to his work. The best place to erect such a house is on a knoll or bank with a slope to the east or west, so that this sunken alleyway may be entered from the ground level. Otherwise steps must be provided. In any case there must be perfect drainage to prevent water from settling in the alleyway.

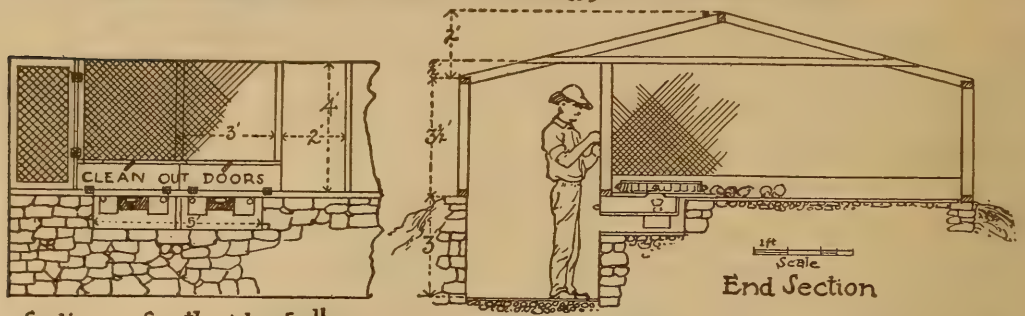
SIMPLE CURTAIN-FRONT HOUSE

Built very cheaply, but a most practical house. Over one-third of the entire front is left open. Cloth-covered frames to close the opening are swung up against the roof.

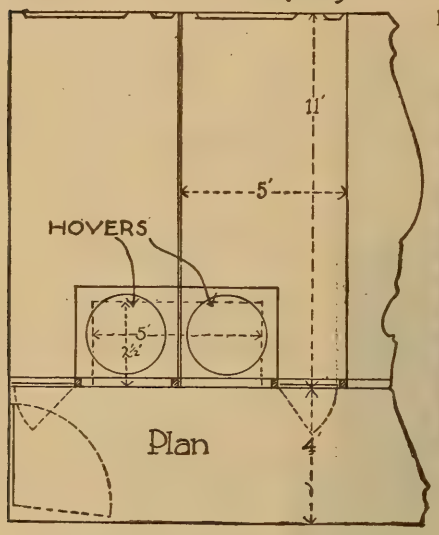
The advantages secured by this form of construction are many. The building is compact, with the smallest possible amount of exposed wall-surface. The chick floor is elevated, so there is no necessity for stooping when filling lamps, cleaning brooders, feeding and watering the chicks. There is a comparatively small amount of enclosed air space, which makes easy the maintaining of the proper temperature. The chick floor is comparatively near the roof, the warmest part of the building. The chicks are brought up near the attendant's eyes where they may be closely observed and their condition easily noted. All of these points are worthy of consideration.

The particular structure shown in the illustrations is carefully built, with stone foundations and alleyway walls and cement floor. The sides and roof are made of matched boards covered with heavy roofing material, and the interior is lathed and plastered. The plastering is carried across the collar beams, thus forming a small attic.

Brooder House with Depressed Alleyway



This is one of the most convenient types of brooder houses. Most of the work is done without stooping.

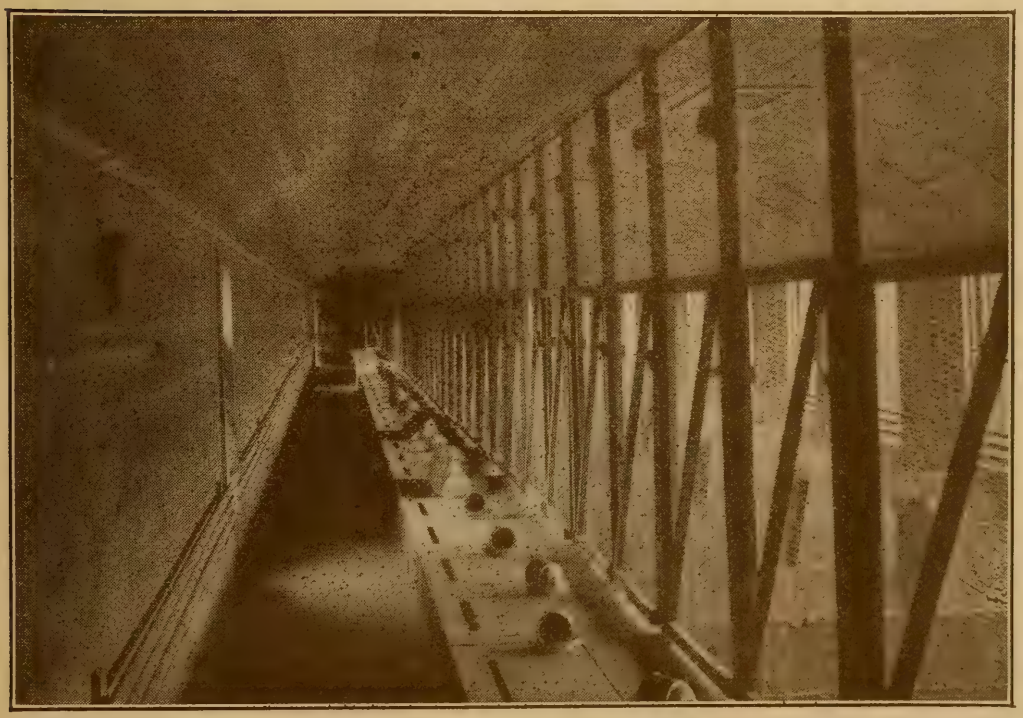


WEST ELEVATION
Note the low exposed walls.

SOUTH ELEVATION DEPRESSED ALLEY BROODER HOUSE
This photo was taken before the grading had been completed and yards erected.

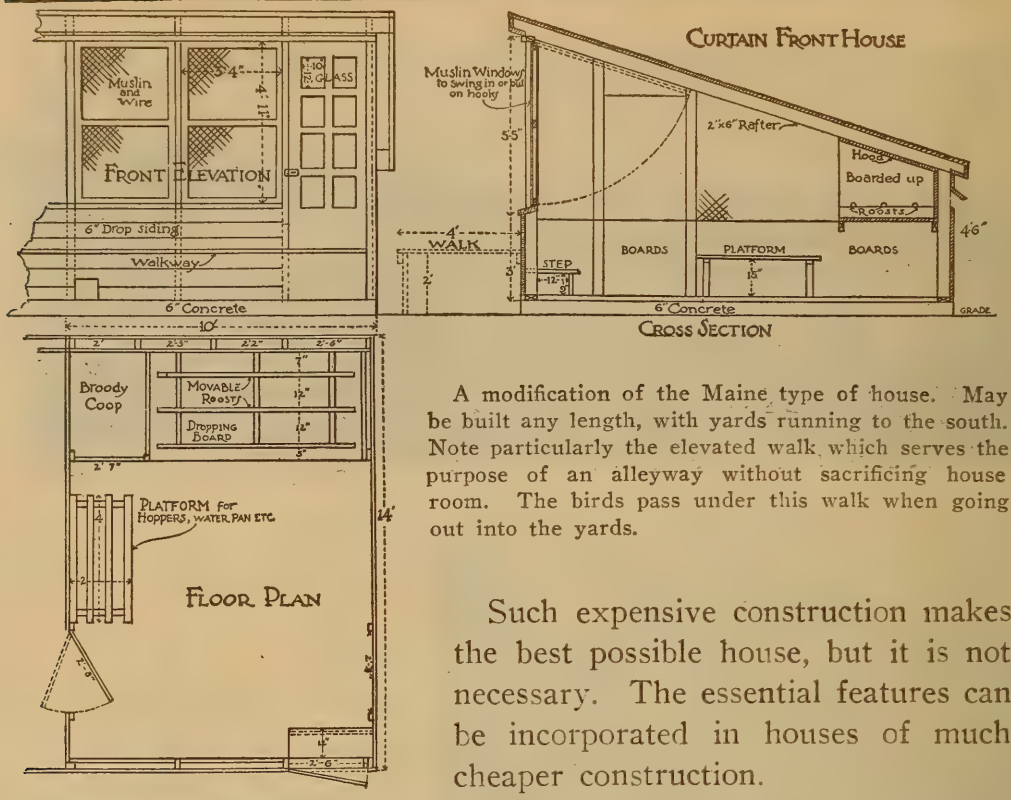
EXTERIOR OF A LONG BROODER HOUSE

Observe the portable fence, which is built in panels. These panels are hooked to the posts, and may be easily removed to permit thorough cultivation of the yards.



INTERIOR OF THE HOUSE SHOWN ABOVE

The boxed-in hovers here shown are no longer popular, most hovers being open for free ventilation. Note bank of pipes along rear wall to maintain house temperature.



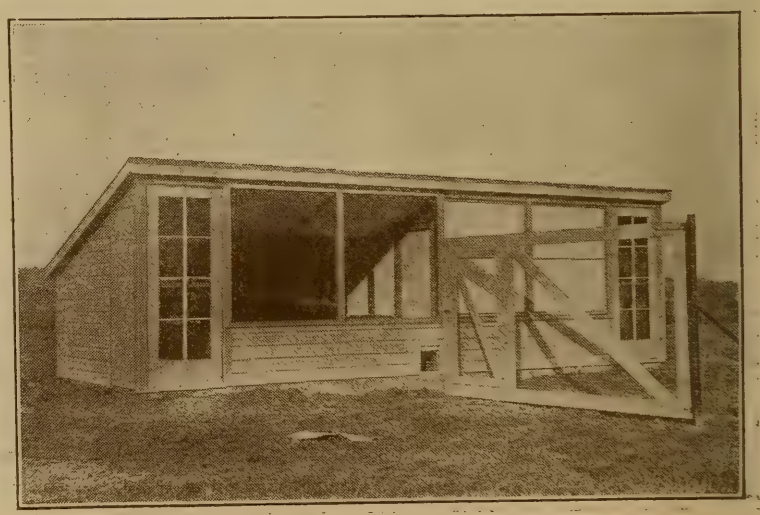
A modification of the Maine type of house. May be built any length, with yards running to the south. Note particularly the elevated walk which serves the purpose of an alleyway without sacrificing house room. The birds pass under this walk when going out into the yards.

Such expensive construction makes the best possible house, but it is not necessary. The essential features can be incorporated in houses of much cheaper construction.

It will be observed that the lamps are located in small pits provided for them, thus putting the floors of the hovers on a level with the house floor, and doing away with the necessity of a bridge which the chicks must climb to reach the hovers.

The lamp fumes and smoke are carried off by pipes which extend from the lamp boxes up into the attic.

All poultry buildings should be simple. Showy, expensive structures are not necessary on business farms.

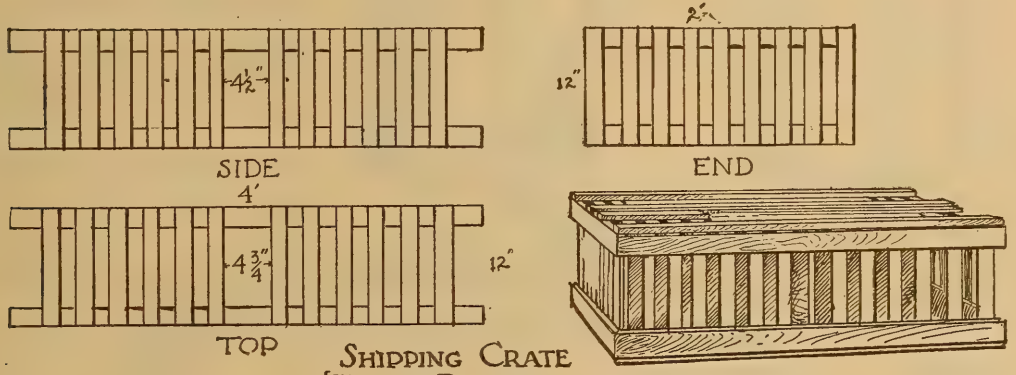


TWO-PEN CURTAIN-FRONT HOUSE

A small structure which is a modification of the long house shown above.

CHAPTER III

POULTRY HOUSE EQUIPMENT AND APPLIANCES



SHIPPING CRATE for LIVE POULTRY

The daily work of attending to the flocks of poultry is made much easier if the houses are properly equipped, and convenient workable appliances provided. Most of the necessary things may be cheaply secured, especially if the poultryman is at all handy with tools.

There are many excellent appliances on the market which may well be purchased, especially such as are made of metal or earthenware. However in most cases the handy man can provide inexpensive substitutes which will serve the purpose well. The most important of these are illustrated and described herewith.

Every poultry plant should be equipped with a fair outfit of tools. Such an investment will pay well. There should be included a fair set of ordinary carpenter's tools, heavy "snips" for cutting sheet metal and wire, a soldering outfit, axes, forks, shovels, hoes, rakes, scythes, crow bars, and other things for which there is daily use. The total cost need not be great, but their value to the busy worker can scarcely be estimated.

It is also wisdom to set aside a room or small building where these necessities may be stored, each in its proper place, and which may also be used as a work shop. Such a plan will do much toward insuring the prompt performance of duty and reducing excuses for failure to attend to things in the right way and at the proper time.

Especially useful for watering little chicks. They may drink at will, but cannot wet themselves.

All poultry house furnishings should be simple and portable. Nothing should be attached to the building itself, as built-in furniture interferes with easy and thorough cleaning and prevents rearrangement of the pens when for any reason this seems desirable. Vermin, especially mites, and disease germs find lodgment and protection behind built-in nests, hoppers, etc., and consequently it is difficult to get at them.

The essential furnishings include receptacles for food and water. roosts and nests.

The roosts of medium length should be made of 2 x 2 inch scantling. Long roosts should be 2 x 4 scantlings, set with the narrow face uppermost. For the comfort of the birds the upper edges should be slightly rounded off.

Roosts should invariably be located where they are out of the way of the attendant and are not in a draught. As a rule they are placed at the rear of the house. They should not be more

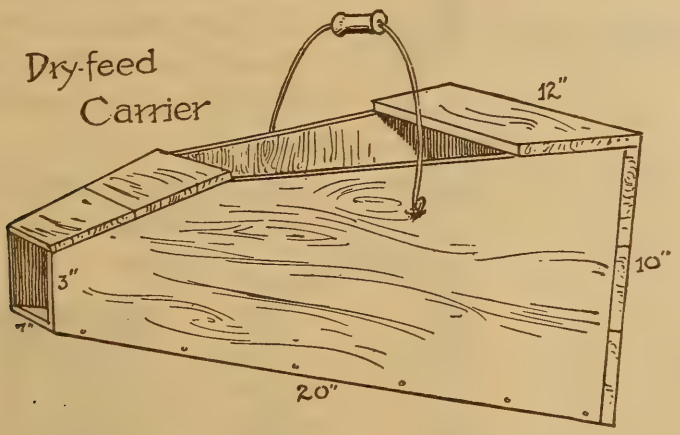
WATER BARREL

This saves many a backache where large flocks are watered daily.

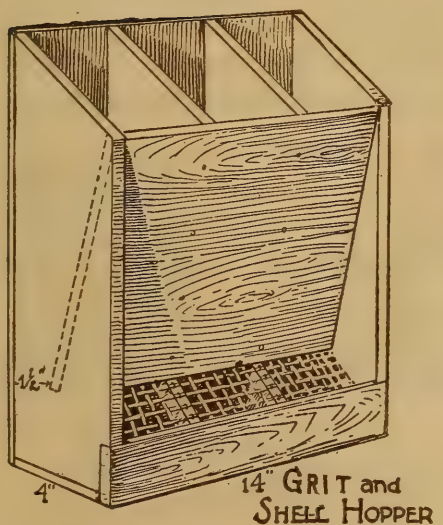
than three feet from the floor and should be set on a level. Roosts in ladder form are undesirable.

When the partitions are close enough together the roosts may properly rest on blocks attached to the partitions. Notches hold the poles from slipping or turning. In long buildings the roosts are often nailed to cross pieces and the latter attached to the rear wall by loose-pin hinges.

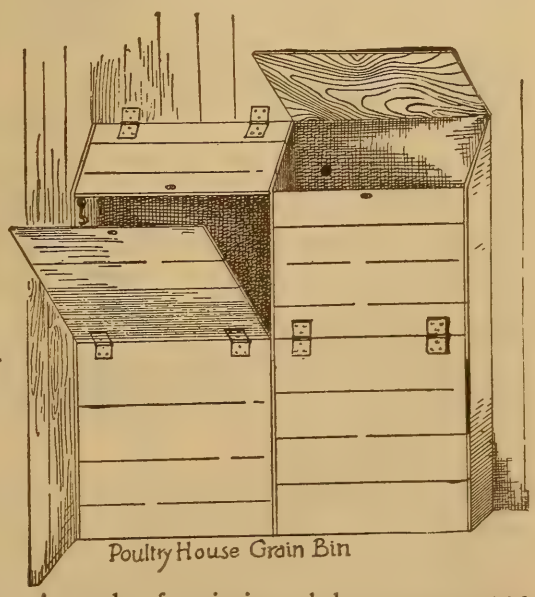
The following amount of roost space should be allowed for each bird: Langshans and Brahmas, ten inches; Wyandottes and Plymouth Rocks, eight to nine inches; Leghorns and Minorcas, seven inches.



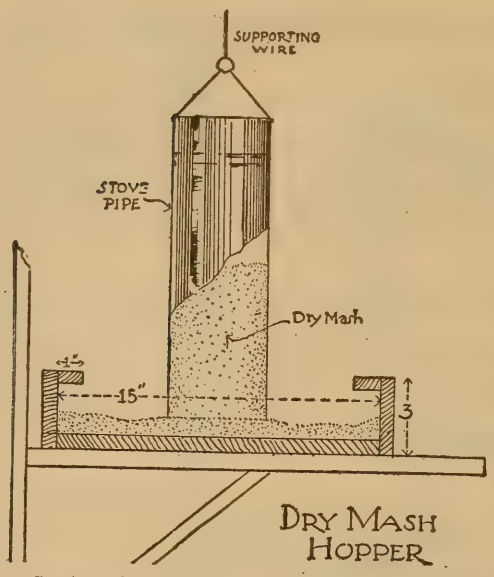
Convenient for carrying dry feed, especially mash. The small mouth makes possible the filling of hoppers without wasting feed.



May be made any size according to the necessities of the case. The wire netting prevents the birds from wasting the material. This form is not suitable for feeding dry mash.



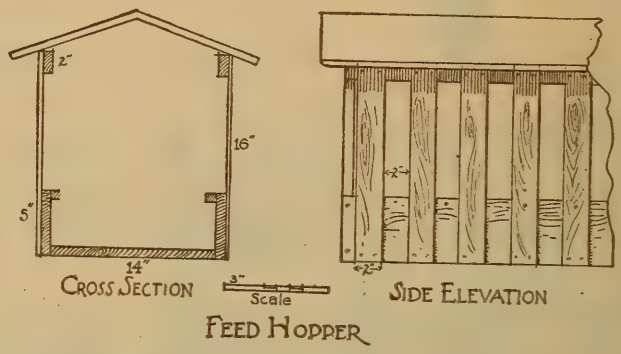
A supply of grain in each house saves many steps. Bins of this kind occupy but little floor space.



Such a hopper will serve a small pen of birds very nicely. It seldom clogs.

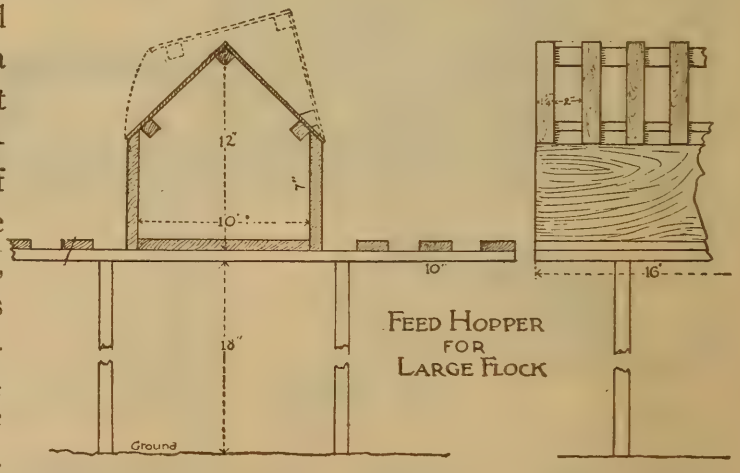
The dropping board to catch the droppings of the birds at roost may be provided or not. Most poultrymen use them. They keep the house in a more sanitary condition and save floor space. For a single roost this board or platform should be about two feet wide. For two roosts from three to three and a half feet wide. They should be placed six to eight inches below the roosts, and extend the full length.

Food and water dishes should be placed on a wide shelf elevated about 18 inches above the floor. This prevents the birds from scratching them full of dirt and litter.



Suitable for either indoor or outdoor use. The cover lifts off.

Any pan or bucket will serve well as a water holder. It should be placed in a frame to prevent tipping and spilling. Fountains of various kinds are frequently used, and some types give excellent satisfaction. One piece fountains of earthenware or metal should be



This hopper can be made any length. It is elevated on 18-inch legs and so takes up no floor space.

avoided, as they are difficult to clean and hard to manage when they freeze up.

A very good fountain for little chicks may be made from a tin coffee can or baking powder can with air tight joints and having a fairly deep cover. Press in the side as indicated in the drawing, fill with water, put on the cover, and invert. The chicks can then get all the water they require, but cannot get themselves wet.

Where possible, let the birds have access to a good stream of water or a drip from a faucet. This insures plenty of water and saves much labor.

Grit, shell and charcoal may best be supplied in hoppers similar to that illustrated. This may be made any desired size according to the number of birds in the flock. The wire netting will force the birds to pick up one piece at a time, and thus prevent much waste.

Hoppers of this kind are suitable for feeding dry grain but will not do for dry mash, beef scrap, or other material that packs. In fact no hopper with a restricted throat will feed these materials freely. They all clog.

For the feeding of wet mash nothing is better than the old V-shaped trough. This should be made of boards six or seven inches wide and any desired length.

Dry mash hoppers must be so planned as to prevent clogging. For a small flock a very good hopper may be made of a small box six to eight inches deep. Merely tack lath across the top to prevent the birds from scratching the mash out, but far enough apart to let them thrust their heads through and eat at will.

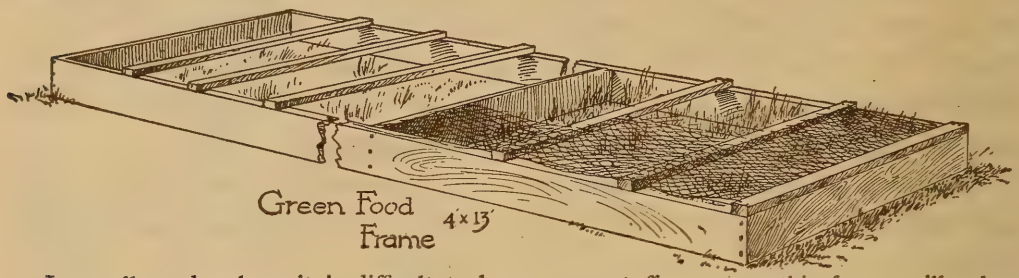
A length of ordinary stove pipe suspended above a shallow box makes a servicable dry mash hopper for a small number of fowls. This should be inspected occasionally, as the mash will sometimes clog even in this and refuse to feed down.

The feed hopper with a cover or roof, shown in the drawing, may be used in the house or out on the range. For the latter use the roof might well be extended a few inches on each side, to prevent the rain from blowing in.

For large flocks of layers the long hopper elevated on legs will be found extremely useful. This may be made as long as necessary to accommodate flocks of any size.

These simple feeders are easy to construct, never clog and so put the birds on temporary short rations, prevent waste, and permit the

attendant to see at a glance just how much feed is available. Frequently in closed hoppers the supply of feed runs short at inopportune times.



In small yards where it is difficult to keep green stuff growing, this frame will solve the problem. The birds eat the green sprouts as they come up through the wire netting, but cannot destroy the roots.

The green food frame here shown is a great help to poultrymen who must keep their birds in small yards in which it is difficult to keep grass or other succulent feed growing at all times. In small yards it is hard to get green growth started without confining the birds for days at a time, and it is soon destroyed because it is speedily trampled and scratched out. Under the protection of a wire covered frame grass or grain may be started without shutting the birds out of the yard. As soon as the shoots push up through the wire the birds may help themselves, but they cannot destroy the roots, so the supply of fresh green stuff is constantly renewed.

The wire covering should be inch mesh, and must be supported on plenty of stiff cross pieces to prevent it from sagging.

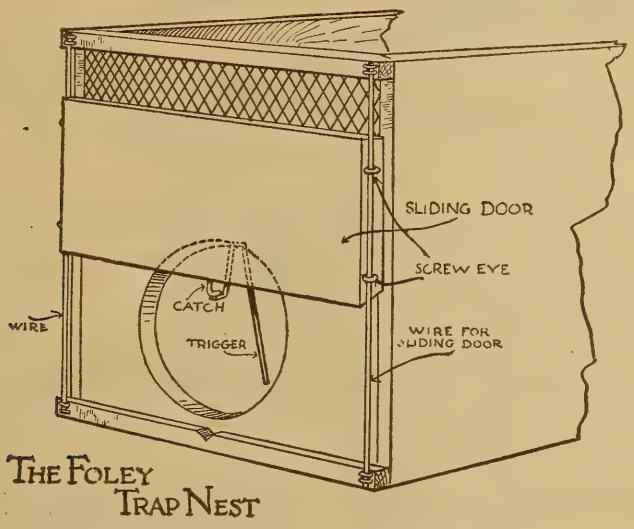
Nests are essential, though not always used as regularly as we might wish. Almost any small box will serve the purpose, or special nests may be cheaply built. Old egg cases or orange boxes serve the purpose finely. The top is removed from each box and a four inch strip nailed on one edge. The open side becomes the front of the nest when the box is placed on its side, and the strip serves to retain the nesting material.

Such nests may be placed directly on the floor, elevated on short legs, or suspended against the wall. If many nests are needed, these boxes may be piled one upon the other, with small projections or steps provided to which the birds may fly or jump when they desire to enter them.

Trap nests are much used by careful breeders. These are made in many different styles, but all are intended to trap the hen when she enters the nest and keep her there until removed by the attendant. In

this way the poultryman is enabled to learn just how many eggs each hen lays, and also secure separately for hatching the eggs from any given hen.

A good trap nest is simple and inexpensive, certain in operation, prevents more than one hen from entering at a time, and is comfortable.



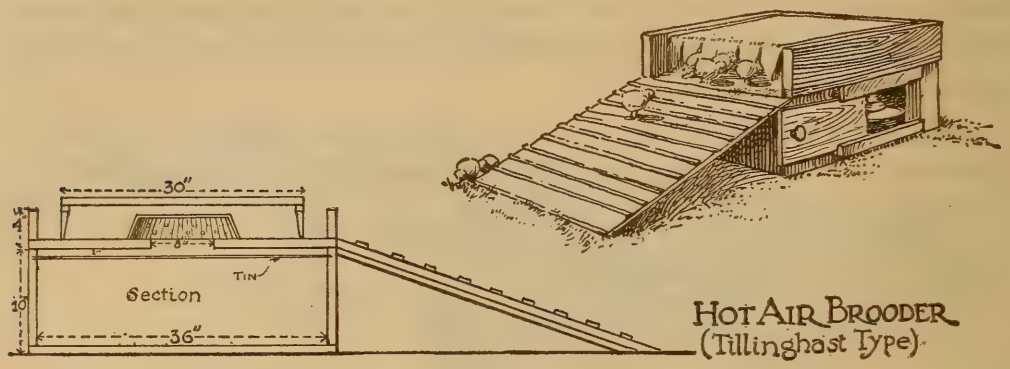
Individual egg records are possible only where trap nests are used. This one may be made of any box of suitable size.

The Foley nest here illustrated is quite popular. It may be made by simply fitting the trapping arrangement to any box of the desired size. This box should be sixteen to eighteen inches from front to back, fifteen to eighteen inches high, and twelve to fourteen inches wide, inside measure.

A circular opening, eight inches in diameter, through which the hen enters, is cut near the bottom. Provision is made for ventilation by locating a wire covered opening above the door.

The door is a piece of board, seven inches wide, which slips up and down the front of the box, being held in position and guided by two pieces of No. 9 wire attached as shown. It must move easily without catching or binding.

The trigger is easily made, but must be carefully adjusted. It is merely a piece of No. 9 wire bent as shown in the drawing and attached by staples to the top of the circular opening in such a manner that it will swing freely. The top of the short end is flattered, as the catch rests upon this.



An inexpensive brooder for use indoors.

This catch is merely a wire nail bent in the shape of an "L," and driven into the bottom of the door with the base projecting inward. The bottom of this projection is also filed flat.

In use, the door is pushed up to a sufficient height to permit the base of the catch to rest upon the short end of the trigger. As the hen enters the nest she pushes the trigger aside, thus releasing the door which drops down across the opening.

The hen is removed through the top, which may be fitted with a door of any convenient kind. Or the top may be left open and the whole nest slipped beneath a broad shelf, being pulled out like a drawer when necessary.

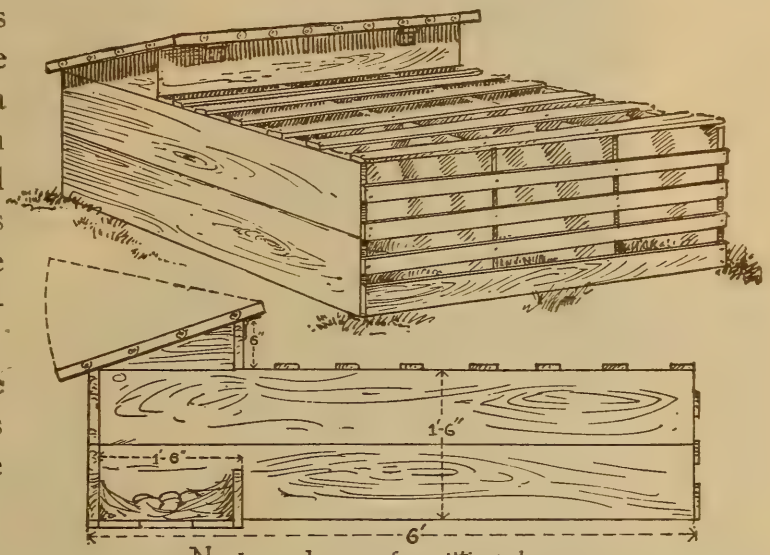
As a rule it does not pay to make brooders at home. So many good machines are available at low prices that it is usually cheaper to buy than to manufacture them. However we illustrate a simple home-made machine that works well in the hands of competent operators.

This is merely a box three feet square and ten inches deep. This is covered with a sheet of galvanized iron or tin, nailed tightly along the edges. Above this in turn are nailed inch strips extending entirely around the top. In these small notches must be cut to admit the air.

The tight board floor is nailed on these strips. In the center of the floor a good sized opening is cut, over which a small pan is nailed, bottom up. Nail holes are punched in the side of the pen.

The hover is merely a little table with a slashed cloth curtain around the edges. Sides and bridge are added as indicated.

In use, the lighted lamp is placed in the lower section. This heats the metal sheet, which in turn warms the air.



Nests and pens for sitting hens.

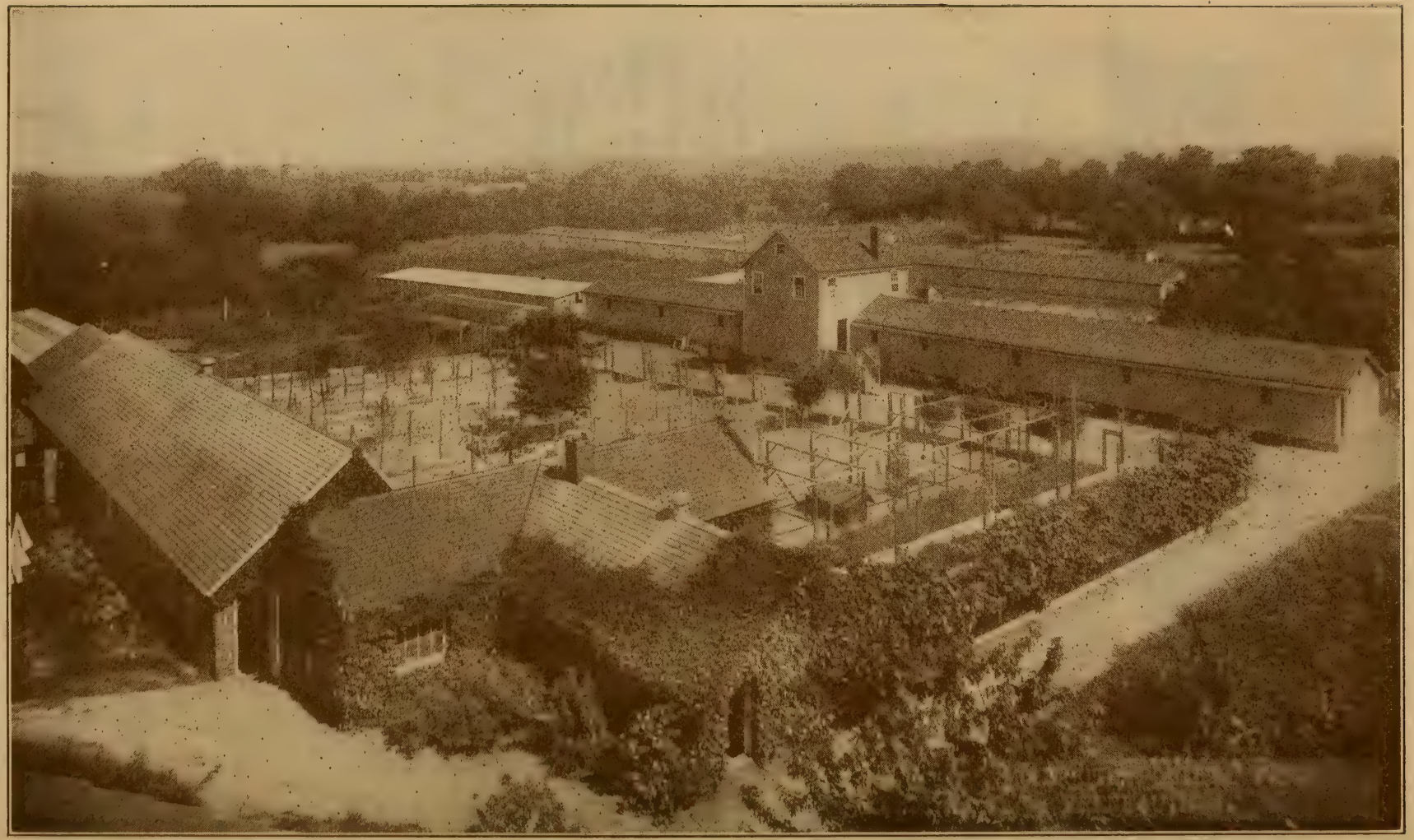
This simple arrangement makes easier the work of caring for sitters, and prevents losses from fighting and deserted nests.

This passes up through the hole in the floor and out under the hover through the holes in the pan. Fresh air is constantly drawn in through the previously mentioned notches in the strips between the metal sheet and the floor. Thus the chicks receive a constant supply of pure, warmed air, uncontaminated by lamp fumes.

A few holes must be provided in the lower section, or lamp box, to provide the lamp with the air it needs to insure free burning.

This Tillinghast lamp is made by soldering a pie tin on a baking tin, and mounting a chimneyless burner on it as shown.

The home made lamp shown in the illustration may be used in this brooder. This requires a chimneyless burner of the Zenith type.



A FANCIER'S PLANT

Complete, yet compact. Roomy yards are provided for the breeding pens and brooder chicks. The latter are transferred to colony houses at weaning age and reared on free range.

CHAPTER IV

BREEDS OF FOWLS

DARK BRAHMAS

Poultrymen, especially beginnners, are inclined to pay too much attention to breeds and not enough to individuals. There is no best breed, but there are good individuals in every breed, and if these are selected and carefully bred one may develop a good family or strain of every breed. It is a common mistake to keep changing breeds in the effort to find one that possesses all the desired excellencies. The most sensible method is to begin with a breed that has given general satisfaction in the hands of local poultry keepers, and then improve it by systematic and careful breeding.

Thorough bred, or as poultrymen say, standard bred poultry, is much more satisfactory than mongrels. But it does not follow that every standard bred bird is a better individual when measured by performance, than every mongrel. Unfortunately there are many " scrub "thoroughbreds that are kept merely because of their ancestry.

The commercial poultryman will do well to place health and vigor first among the characteristics he requires in his flock. These are of primary importance, and the breeder who ignores them will sooner or later come to grief.

Select and breed the health type; birds that are lively, vigorous; have clear eyes; combs and wattles of bright healthy color; short,

PARTRIDGE PLYMOUTH ROCKS
A comparatively new variety having unusual beauty of plumage.

stout beaks; well developed muscles; well finished plumage. Avoid the weak, mopey, listless, scrawny, knock-kneed, crow-headed specimens. They bring trouble and disappointment. This applies equally well to all kinds of poultry.

Our domestic fowls are all descendants of one or more wild types, some of which are still found in various parts of the world. The most generally accepted belief is that the jungle fowl of India—named *Gallus bankiva* by the scientists— is the parent type. Under domestication it has been changed and moulded by man, influenced by widely differing environment, and the result is seen in our perfected fowls of the present day.

The term "standard bred poultry" refers to birds bred to conform to the Standard of Perfection, issued by the national organization of poultrymen, the American Poultry Association. This describes the form and color of every section of both male and female of every kind of poultry deemed worthy of recognition by American poultrymen. This book is indispensable to the breeder and exhibitor, since it is the generally accepted guide, the final authority on all questions

BARRED PLYMOUTH ROCK
The first of the typically American varieties, and still one of the best. It possesses all of the desirable characteristics of the ideal general purpose fowl.

of the quality of poultry as judged from the standpoint of the fancier. Copies may be secured from any office of the Pratt Food Co. Price, $2.00, postage paid.

SILVER-LACED WYANDOTTE

One of the earliest varieties of Wyandottes. The plumage is a pleasing combination of black and white.

In the Standard, fowls are divided into classes, breeds and varieties. The class includes fowls of presumably common origin, usually geographical, and is in turn divided into breeds, and the latter into varieties. For illustration, the Barred Plymouth Rock is a *variety* of the Plymouth Rock *breed,* which is a member of the American *class.* Breeders usually say that "shape makes the breed and color the variety." In some cases the form of the comb is the only variety distinction. This difference between breed and variety should be clearly understood.

Each breed has certain well defined characteristics that have become fixed through years of breeding, such as size, color of eggs, etc. The poultryman should take advantage of this and use as his foundation stock the breed or variety which already possesses the greatest number of characteristics he demands. This saves much time and the sooner enables him to get his flock into the form he desires.

WHITE WYANDOTTES

Fine general purpose fowls, useful alike as producers of brown eggs and fine table carcasses.

The American Poultry Association recognizes eleven different classes of fowls:

I. American.
II. Asiatic.
III. Mediterranean.
IV. English.
V. Polish.
VI. Dutch.
VII. French.
VIII. Games and Game Bantams.
IX. Oriental Games and Bantams.
X. Ornamental Bantams.
XI. Miscellaneous.

COLUMBIAN WYANDOTTE
The most recent addition to the Wyandotte family.

The great classes are further divided into more than one hundred breeds and varieties, each differing from the other in size, shape, comb, color, or in some other way. In addition, there are a few non-standard varieties which possess more or less merit.

It is apparent, then, that the poultryman has wide latitude in making a selection. He should use common sense in choosing, keeping in mind his object in keeping poultry, the local climatic conditions and market requirements. It has been well said that one should "select the breed he likes." This might be qualified by adding the suggestion that he try to like the breed that best meets local conditions.

Each recognized breed and variety possesses enthusiastic admirers. That means that every kind nicely fits into some special place, but it does not follow that all are equally valuable for prac-

WHITE ORPINGTON
At present the most popular variety in the English class.

tical purposes. This is emphatically untrue. By a process of elimination, a sort of survival of the fittest, American poultrymen have sorted out a comparatively few breeds and varieties which are of greatest practical value under average conditions, and one or more of these are found on most commercial farms. The other kinds are found in the hands of fanciers, or in small home flocks.

LIGHT BRAHMAS

The largest of our recognized breeds. Fine for the production of heavy weight roasters and capons.

The first four classes in the list above are of greatest interest to the commercial poultryman. The members of the Asiatic class, the Brahmas, Cochins and Langshans, are noted for their great size. They are large, slow maturing, and of greatest value to the producers of heavy weight table poultry. The hens of this class are persistent sitters and produce rich brown eggs.

In the Mediterranean class are found the "egg machines," the Leghorns, Minorcas, Spanish, Andalusians and Anconas. Excepting the Minorcas they are small in size and mature rapidly. All are non-sitters and lay white eggs.

BUFF COCHIN

A stately fowl prized by fanciers, but possessed of little practical value.

Midway between these groups are found the American class, including the Plymouth Rocks, Wyandottes, Rhode Island Reds, Buckeyes, Dominiques and Javas. These breeds are medium in size, good sitters and mothers, excellent layers of brown eggs, and make desirable table carcasses at all ages. They are the best of the general purpose breeds.

In the English class the most important is the Orpington, Eng-

SINGLE COMB WHITE LEGHORNS
Probably the most widely bred of all breeds. Famous as producers of white-shelled eggs.

land's contribution to the list of general purpose fowls. In many respects this breed closely resembles those of the American class.

One of the Games, the Cornish, is much prized by growers of fine table poultry, on account of its compact form and great breast development.

Stated in the most concise way, the most popular breeds and varieties on business poultry plants today are about as follows:

For the production of white eggs, the S. C. White, Brown and Buff Leghorn.

For the production of heavy capons and roasting chickens, Light Brahmas and Partridge Cochins.

For the pro-

WHITE POLISH
A fancy breed.

duction of brown eggs and most kinds of table poultry, Barred and White Plymouth Rocks, White and Buff Wyandottes, Rhode Island Reds, White and Buff Orpingtons.

These kinds have stood the test and have made good in the hands of thousands of breeders. The beginner may safely adopt any one of them.

DARK CORNISH

Formerly called Cornish Indian Games. Fine for market because of their compact shape and unusual breast development.

There are several comparatively new varieties which promise to become exceedingly popular because of special merit, but it will take quite a time for them to seriously threaten the supremacy of the kinds mentioned above.

Just a word as to breeding. Most poultrymen of experience mate cockerels to yearling hens and cocks to pullets. In quality, chicks from the former mating seem to be better on the average.

Do not closely in-breed. Especially avoid the mating of brothers and sisters. It is better to mate a cock bird to his own daughters and a cockerel back to his mother. In-breeding is necessary when the breeder wishes to intensify certain characteristics in his strain, and when properly done it seems to have little or no ill effect. However, considerable experience and sound judgment on the part of the breeder are necessary. In in-breeding, as in all breeding, the most important requirement is vigor of constitution and perfect health. Never put a weak or inferior specimen into the breeding pen. It is hard enough to produce good specimens without deliberately putting the youngsters under the handicap of weak, poor parentage. Remember that the chicks inherit imperfections, weakness and tendency toward disease just as surely as they do those characteristics which are to be desired, and that the quality of the season's crop of youngsters is in great measure determined when the breeding pens are mated up. Far better to work with a limited number of good birds than to waste time and effort on a larger flock containing many weaklings. We

cannot emphasize too strongly the fact that this is more important than the breed selected, or the method of housing and feeding.

When building up a strain of heavy layers, the trap nest is a great help. Pen records are a valuable guide and one will do well to breed from pens with high average egg yields, but after all this is a faulty method as all pens contain poor individuals. By the use of the trap nest alone can individual records be determined, and though this method of selection is expensive because of the time it takes, it pays in the end.

Fortunately, one does not have to use the trap nest throughout the entire year in order to get a line on the best layers. Records made with hens of many different breeds under a wide range of conditions indicate very clearly that the fall and winter layers are the ones that make the high yearly record. Any pullet that lays 60 eggs between the day she lays her first egg and the first of the next March, may be depended upon to produce upward of 150 eggs before the close of her first laying year. All such are worthy of being permitted to reproduce their kind, and may well be reserved for breeding purposes as long as they lay reasonably well. In fact they may often be used until four years of age.

EXHIBITION GAME COCK
A typically "fancy" breed without much practical value.

There is another fact which should be kept in mind. Tendency toward great laying is more often inherited through the son of a heavy layer than through her daughters, and while the daughters of great producers are valuable the sons are *more* valuable. This is especially true since a cockerel can influence the offspring of a dozen females, thus multiplying his influence in the flock.

In view of the two facts discussed above, the busy poultryman

might well use the trap nest during the comparatively idle winter months in the following way. When selecting the pullets in the fall, place in a convenient house the pick of the flock, those that have made the most uniform growth, are strong, healthy and vigorous, and which most nearly meet the breeder's ideal in form, color, etc. Trap nest this choice flock from fall until the first of March. Reserve as breeders all that lay 60 or more eggs in that time, and head all pens with cockerels from such birds. Rapid improvement in flock averages will result, and the required period of trap nesting will be reduced to the minimum. Further, the work will be done at the season of the year when the time can best be spared.

And finally, the breeder will do well to remember that the very best index of a chick's vigor is the development it makes during its first eight to ten weeks of life. *Begin to select the breeders the day they hatch,* and continue to cull out the weaklings until the breeding pens are mated up. Mark permanently, either by punching the web between the toes, or removing the first joint of a toe, every chick that makes slow growth, that feathers slowly or unevenly, that is sick or shows any sign of physical weakness. Send all such to the block as soon as they are large enough. Reserve for future use only such specimens as show evidence of possessing vigorous constitutions and the ability to consume plenty of food and convert it into bone, muscle and feathers.

Such a procedure may cause you to discard a large proportion of your flock the first year, but if so it indicates that you have been going in the wrong direction in the past. Season after season the percentage of culls will decrease, your flock will improve in every way and your profits will correspondingly increase. Too many poultrymen figure on *numbers* alone, keeping enough birds to fill their houses, and largely ignoring the more important question of quality.

Breed is important; *breeding* is *more* important.

CHAPTER V

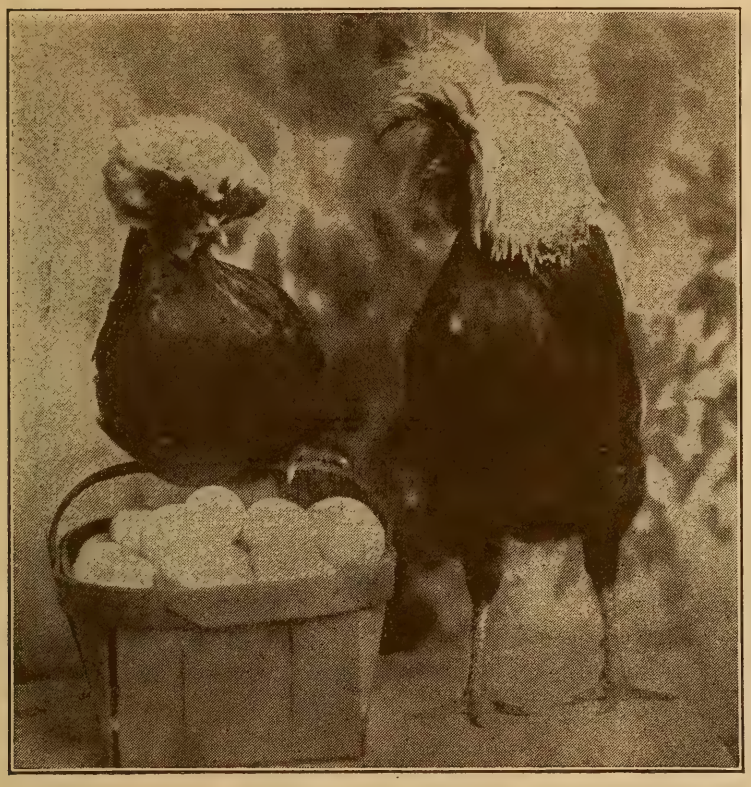
POULTRY FEEDING

A MODEL PLANT

To the student and chemist a study of the composition of the various feeding stuffs and the theoretical balancing of rations is most interesting. However most poultrymen are too busy to devote much time to such things. They want results. In order to prevent any possible confusion this chapter is purposely made brief and simple, merely a statement of essential basic facts and a few feed mixtures which have worked out satisfactorily in practice. To those who wish to go more deeply into the subject we recommend the more recent volumes dealing with feeds and feeding and government and experiment station bulletins devoted to the same subjects.

Most beginners make hard work of poultry feeding. As they gain in experience they simplify their methods and rations, and either secure better results, or the same results at lower cost and with less labor.

Chickens of whatever age require a ration containing feed stuffs of four different classes. Grains, animal food, green food, and mineral matter. These have been aptly called " grains, greens, grubs and grits." If any one of these is omitted the results are bound to be more or less unsatisfactory.



BEAUTIFUL AND USEFUL
White Crested Black Polish.

While this list may seem somewhat imposing it is in reality simple, and a ration containing all four groups need cost no more than one which is incomplete.

The "grains" form the principal part of the ration. The principal grains — whole, cracked, ground or by-products —used by the poultryman are corn, wheat, oats, barley, buckwheat, kafir corn, wheat bran, middlings, feeding flour, corn meal, gluten meal, ground oats, linseed meal.

In the list of "greens" will be found any fresh green stuff, such as green grass, clover, alfalfa, cabbage, cattle beets, turnips, carrots, etc. Such dry material as cut alfalfa, lawn clippings, clover hay, and beet pulp are excellent substitutes when soaked or steamed before feeding. Many poultrymen dampen oats and keep them warm until they grow sprouts three or four inches in length and feed this. Sprouted, or processed, oats are excellent feed, but are expensive.

Under the head of "grubs" are listed the various animal foods, such as natural insect life, meat and skim milk. The commercial feeds of this class are beef scrap, fish scrap, blood meal, green bone and dried milk. Fish scrap is a comparatively new feed, but it gives extremely satisfactory results. However it must be of good quality. Reject any that carries a trace of oil, as it will surely taint the eggs.

The "grits" are the grit or gravel for crushing and grinding the food in the gizzard, the crushed oyster shell for egg shell material,

the granulated bone or bone meal for skeleton building, and the charcoal which corrects simple digestive disturbances.

Every poultryman has available one or more of the materials listed under these four heads, and he should see to it that his birds get them all.

There are three distinct methods of feeding. A few poultry keepers use nothing but whole and cracked grains in addition to the other necessities, using no meals or ground grains at all. Heavy egg yields are seldom secured in this way, but the claim is made that the eggs hatch better and give stronger chicks.

The common method is to use a ground grain mixture, fed either wet or dry. Thus we get wet mash feeding and dry mash feeding.

Wet mash feeding was the more popular until a few years ago. Now most commercial operators prefer dry mash. In the former practice the mash mixture is dampened with milk or water until it reaches a rather sticky but crumbly condition. This is fed once daily. In dry mash feeding the dry mixture is fed in hoppers, which are usually left open and available to the birds at all times.

It is quite possible that a somewhat greater egg flow can be secured by an experienced, skillful feeder using wet mash, but the dry mash is safer, especially in the hands of beginners and hired help, and it also saves labor. These two considerations have resulted in the general adoption of this method of feeding, especially on large farms. Where small home flocks are kept the wet mash is often used as a medium in which to feed the kitchen waste and scraps from the family table.

A YOUNG FANCIER

For best results, the birds should eat about two pounds of grain to one pound of mash. The animal food may

AUTOMATIC POULTRY FEEDER

Many poultrymen find automatic feeders very useful, since they save time, protect the feed against rats and sparrows, and keep a supply available to the birds at all times.

be added to the mash or fed separately in hoppers, as preferred.

A safe basis upon which to proceed is to give each ten hens approximately one quart of grain per day and then let them have all the dry mash they will eat or all the wet mash they will consume for the evening meal. Everything considered, the evening is the best time to feed wet mash. The grain may all be given in the morning, or divided into two meals as desired. Both plans work well if properly used.

Some feeders are reducing labor bills, but getting excellent results, by feeding all grain through automatic feeders, of which there are several types on the market. These are operated by the birds and dribble the grain down into the litter as required.

Green food is esential, not because of its nutritive value, which is slight, but rather on account of its tonic and laxative effect.

The grits should be kept in open hoppers before the birds at all times. This includes grit, shell and charcoal. Beef scrap and fish scrap usually carry enough bone to meet the needs of the fowls. If blood meal, meat meal or milk are used, some bone should be added to the ration.

All feed should be sweet, clean and free from mould or mustiness. Mouldy feeds spell trouble.

In order to induce the necessary exercise, all whole or cracked grains should be fed in deep litter of straw or leaves.

Do not underfeed. So much has been written about overfeeding that many people are afraid to feed a sufficient quantity.

Hens do not get too fat to lay. They get fat because they do not lay. A hen that gets fat on a liberal ration is constitutionally of the

meat type. Weed her out and send her to the block where she naturally belongs.

Remember, each hen must have enough food to sustain her body. All the profit you can get comes from the amount of food she eats beyond her body requirements and converts into meat or eggs for sale.

Any one of the following rations may be adopted with entire confidence that it will bring good results.

At the International Egg Laying Competition held at the Connecticut Agricultural College, Storrs, Conn., five hundred birds of twenty-three breeds and varieties averaged 154 eggs each on the ration given below. Probably ten per cent of the whole flock laid over 200 eggs each. Three pens of five birds each *averaged* more than 200 eggs per bird for the year.

Scratch Grain: Wheat, 60 lbs.; cracked corn, 60 lbs.; heavy oats, 40 lbs.; barley, 20 lbs.; buckwheat, 10 lbs.; kafir corn, 10 lbs.; coarse beef scrap, 10 lbs.

Dry Mash: Coarse wheat bran, 200 lbs.; corn meal, 100 lbs.; ground oats, 100 lbs.; gluten meal, 100 lbs.; middlings, 75 lbs.; feeding flour, 25 lbs.; fine beef scrap, 30 lbs.; fish scrap, 30 lbs.

Green Food: Grass in the runs. Cattle beets and green corn fodder when convenient. Soaked beet pulp the rest of the time.

Grit, shell and charcoal in hoppers.

The dry mash was fed in open pans, available to the birds at all times. The scratch grain was fed exclusively in automatic feeders.

An experiment station which breeds White Leghorns largely, uses and recommends the following ration:

Scratch Feed: Wheat, 60 lbs.; cracked corn, 60 lbs.; oats, 30 lbs.; buckwheat, 30 lbs. The buckwheat is omitted in warm weather.

Mash Mixture: Corn meal, 60 lbs.; wheat middlings, 60 lbs.; wheat bran, 30 lbs.; alfalfa meal, 10 lbs.; oil meal, 10 lbs.; beef scrap, 50 lbs.; table salt, 1 lb.

The mash is fed dry, in hoppers which are opened about half of each day.

Another experiment station specializing in Barred Plymouth Rocks has found satisfactory grain and mash mixtures as follows:

Scratch Grain: By measure, 4 parts corn, 2 parts oats, 2 parts wheat.

Dry Mash: Wheat bran, 200 lbs.; wheat middlings, 100 lbs.; corn meal, 100 lbs.; gluten meal, 100 lbs.; beef scrap, 100 lbs.

On alternate months 50 lbs. of linseed meal is added to the above mixture.

A prominent Buff Wyandotte breeder who is an authority on practical poultry matters, gets good results from his birds on this ration:

Scratch Grain: Equal parts by measure of corn, wheat and oats.

Dry Mash: Mixed by measure. Wheat bran, 3 parts; corn meal, 3 parts; wheat middlings, 1 part; gluten meal, 1 part; ground oats, 1 part; fish scrap, 1 part.

A business breeder of Rhode Island Reds states that he has made his birds pay him an average profit of $2 each per year when fed as follows:

Scratch Grain: By measure, 4 parts corn; 3½ parts wheat; 3½ oats.

Dry Mash: Wheat bran, 100 lbs; wheat middlings, 100 lbs.; gluten meal, 100 lbs.; corn meal, 100 lbs.; ground oats, 100 lbs.; animal meal, 100 lbs.

It will be observed that all of these mash mixtures are fed dry. They would serve equally well if moistened before feeding.

These rations are all in actual use, and they are mixtures which have been worked out by men handling different breeds and varieties in widely separated sections of the country and under different climatic

conditions. The astonishing fact about them is that they are so very similar, and this ought to be sufficient proof that the mixtures are approximately right.

Much of what has been said above refers to the feeding of hens for egg production. But in the main it applies equally well to the feeding of growing stock. Care must be exercised at first to prevent overfeeding, but after the chicks are well started and out on range it is practically impossible to overfeed them on a well balanced ration. In this they resemble a growing boy who has the run of "all outdoors." Good chicks cannot be produced on scanty feeding. Neither can rapid development be secured unless the ration is ample.

For a few days after hatching feed sparingly on a mixture of granulated grains containing plenty of oats and wheat. In addition to this give Pratts Baby Chick Food according to directions for the first three weeks. If possible, give sour milk from the start. Add a little animal food to the ration at ten days and increase this as the chicks can stand it.

Grit, charcoal and bone are essential. Also plenty of tender green food.

As soon as the little fellows begin to get out of doors regularly, feed them a mash, either dry or moist. When they go out on range, feed heavily. Keep them eating and exercising, and they will grow at a rapid rate. Give lots of wheat, oats, and animal food. These are makers of bone and muscle. The fat can be put on later.

Finally, don't neglect the drinking water for birds of all ages. Give it abundantly, and have it fresh, clean and cool. It doesn't cost much, but it is a necessity and a big factor in the final results.

CHAPTER VI

INCUBATION

THE GOOD OLD WAY

The first essential of successful incubation is eggs of the right kind. No matter how faithful the sitting hen or how perfect the incubator, good chicks cannot be hatched from eggs low in fertility, or containing weak germs. Some one has well said that the greatest difficulty is to get the chicks *into* the eggs. A good hen or incubator will bring them out.

Eggs for hatching should be fresh. The fresher the better. Reject all that are imperfect in shape, long, round, or ridged, and such as are abnormally large or small in size. Also any with rough or thin shells.

Small cracks may be detected by gently tapping two eggs together.

Where few chicks are reared each year, the natural method of incubation may well be used. Set the hens where they will not be disturbed, but in a place where they may be carefully looked after. Test each one with a few nest eggs before entrusting her with good ones.

Make the nest shallow and flat so that the eggs will not roll to the center and breakage result from the hen jumping upon them. If

IMPERFECT EGGS
The kind *not* to use for incubating. Reject all eggs that are very large or small, imperfect in shape, or having thin or rough shells.

possible, set two or more hens at one time, so the chicks may be divided into good sized broods and the surplus sitters returned to work.

An arrangement for sitters as illustrated in Chapter III is a great help. Trap nests are a convenience where many hens are set in the same room, as these prevent more than one hen from crowding into a nest and so breaking some eggs and permitting others to get chilled.

Dust each hen thoroughly with Pratts Powdered Lice Killer when she is first placed on the nest, and again before the chicks hatch. Use Pratts Liquid Lice Killer on the nest box to rid it of mites.

Feed and water the sitters daily, and give them a chance to dust themselves and take some needed exercise.

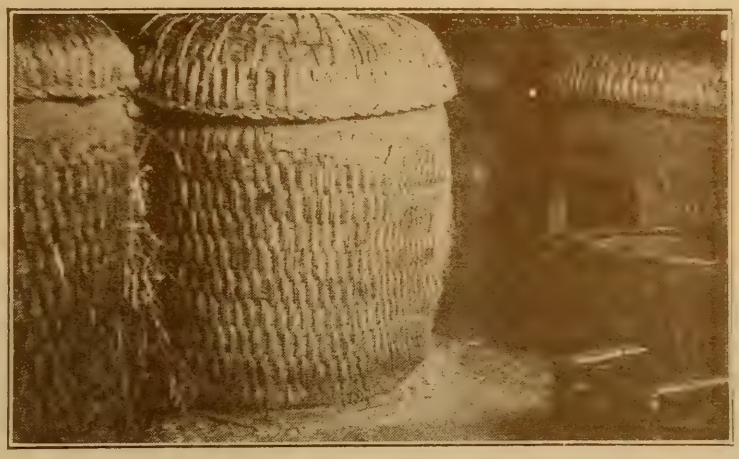
Do not disturb them at hatching time unless they act nervous. Under these conditions remove the chicks as they hatch and keep them in a warm place.

Incubators are a necessity on every plant where many chicks are hatched. The old prejudice against "hatching machines" has worn away as they have become perfected, and they are now found everywhere that

INCUBATOR CHICKS
"Where's mother!"

chickens are kept.

Incubators are made in all sizes, from fifty egg capacity up to fifteen thousand eggs. These latter huge machines, mammoth incubators, are being installed on most large farms and are finding much favor because of their ease and economy of operation. However most poultrymen must be content with the small lamp heated incubators, and to these we refer especially.



CHINESE INCUBATORS

Jars of clay covered with basket work. With such simple contrivances the poultry keepers in China secure wonderful hatches. (Photo from Prof. F. H. King.)

READY FOR THE BROODER

A lined tray, box or basket should be used in transferring chicks from incubator to brooder. This prevents chilling.

Aside from the eggs used, the three factors

which influence results are temperature, ventilation and moisture. Practically all makes of incubators control the first in a satisfactory way and the great difference existing among the many kinds is due to the other two points mentioned. The machine that best controls these gives the most uniform results.

Just a word about incubator operation.

First, follow the manufacturer's directions. He ought to know best how his machine should be run.

Set it in a well ventilated room, in which the temperature does not fluctuate violently.

Be sure that the machine is level, which insures even distribution of heat in the egg chamber.

Overhaul it carefully and be sure you understand it fully.

Heat it up and run it for a few days until you understand just how to manage it. Be sure that the lamp burns freely and the regulator acts promptly and effectively.

Disinfect it carefully before each hatch. This is a most important matter.

Use a high grade of oil which doesn't smoke or char the wick.

Keep the lamp burner clean. Boil it out occasionally if necessary.

See to it that the wick is long enough to reach the bottom of the oil fount. Many hatches are spoiled by having the lamp go out as a result of a short wick. Put in a fresh wick for each hatch.

Fill the lamp in the afternoon. This insures plenty of oil and a fresh trimmed wick for the night.

Put the eggs in in the morning so they may be heated up and the machine regulated before night.

Never touch the eggs with oily hands.

Test on the seventh day, throwing out infertile eggs and weak germs. Test again on the eighteenth day and discard all dead eggs.

Keep the machine dark during hatching time. Do not open it then unless forced to do so.

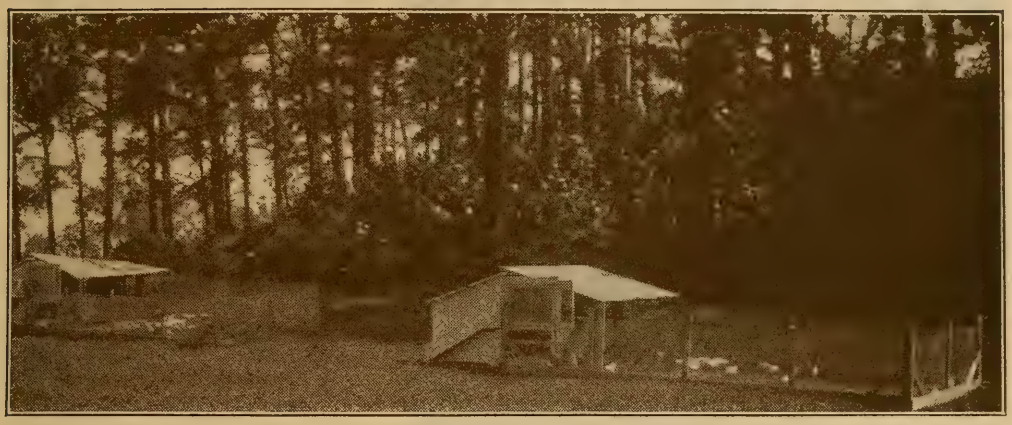
Leave the chicks in the nursery for twenty-four to thirty-six hours after hatching.

Don't bother to help weak chicks out of the shell. They are not worth having.

Follow manufacturer's directions for other details of management.

CHAPTER VII

BROODING AND REARING



COLONY BROODERS AND PORTABLE YARDS

Incubation and brooding are about the most exacting work the poultryman has to do. Failure here spells disaster for the season. In fact the success of a poultry raiser is measured largely by his ability to hatch and rear the annual crop of chickens.

The result of mistakes in mating, feeding, management of the breeders and incubating the eggs will be observed in the brooding. Weak chicks will scarcely do well under the best of conditions, and the quality of the chicks is determined long before they reach the brooder.

A volume might be written on this subject alone, but we must content ourselves with a few general directions which may prove helpful.

Good chicks may be reared either under hens or in the brooders. The method of handling them must be determined by the conditions surrounding each individual case. Success in either case depends upon four distinct factors: Constitutional vigor, inherited from the parent stock; comfort, as freedom from lice, room in which to exercise, etc.; food, of the right kind and in sufficient quantity; protection, from weather, accidents and natural enemies.

WELL STARTED

The questions of vigor and feeding have been touched upon in the appropriate chapters, but we wish to again emphasize the necessity of giving the chicks that strong start during their first three weeks of life that will ever afterward be apparent in their development. These three weeks are really the critical period in their lives.

The term "comfort" includes many things. Proper temperature, freedom from lice and mites, clean quarters of sufficient size to permit exercise regardless of weather conditions, and no overcrowding.

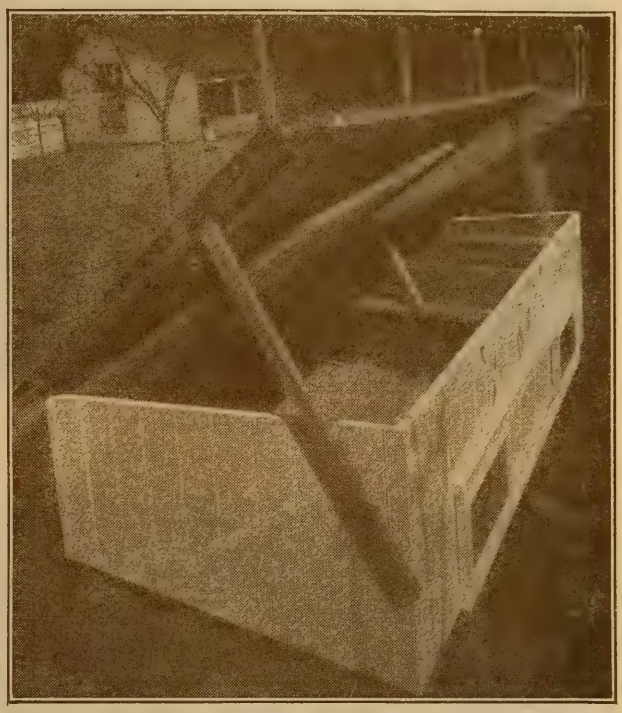
Protection includes the safeguarding against heat, cold and storms, against rats, cats, weasels, hawks and other natural enemies, and such accidents as drowning, smoking lamps, etc.

All of the above can be entirely overcome if the necessary simple precautions are taken and suitable quarters provided. It will not be necessary to further bring these points to the attention of the earnest chicken raiser.

When the chicks are entrusted to the care of hens, safe, roomy coops are essential. Make these tight and comfortable, the larger the better, and keep them clean. Give the little fellows plenty of oppor-

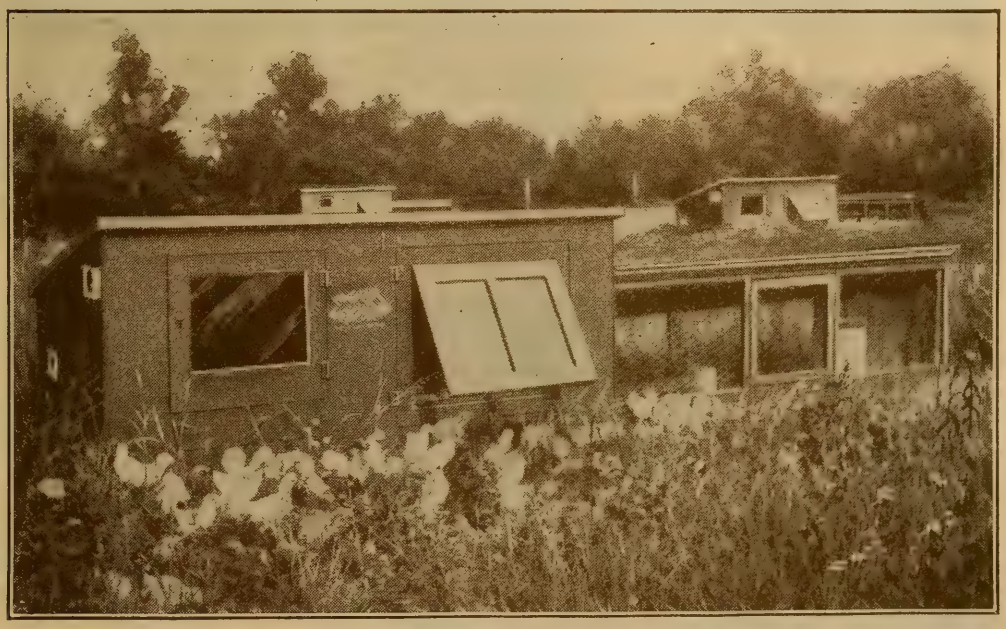
tunity to exercise out of doors. The hens may run with them or be kept confined in the coop and attached run as seems best. The two methods are illustrated herewith. But be *sure* to keep the hens free from lice and the coops clear of mites. This is of the utmost importance.

Artificial brooders of various kinds are available. The poultryman must select the particular form which most appeals to him and best meets his requirements.



SHELTER FOR FIRELESS BROODERS

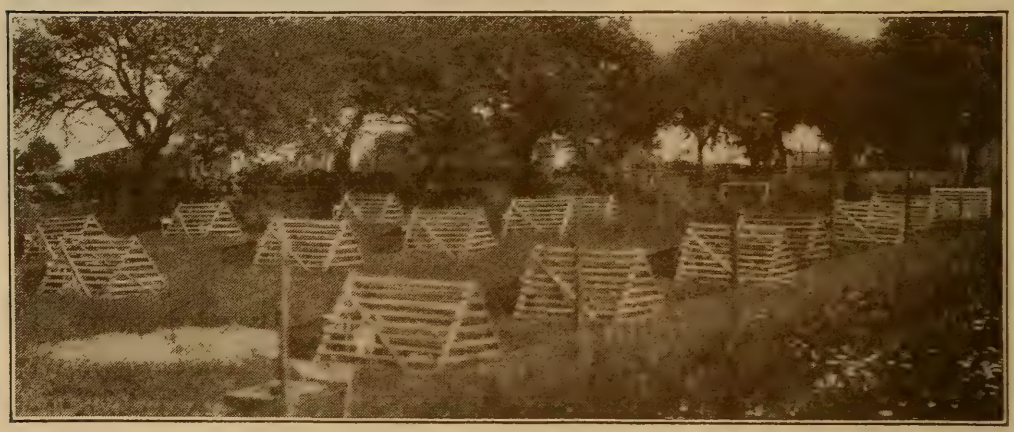
The brooders are removed as soon as the chicks can do without them, and the youngsters remain in the shelter until large enough to transfer to the colony houses.



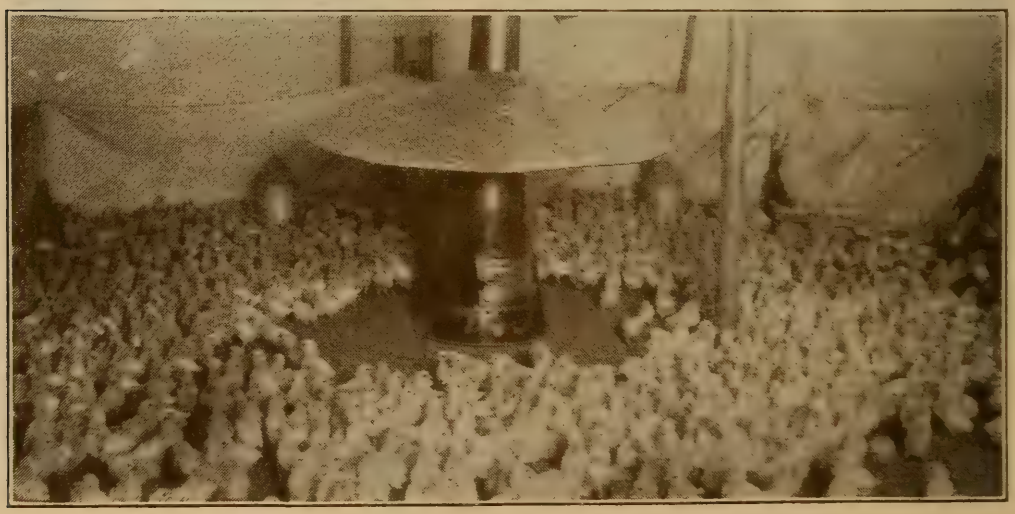
COLONY BROODER WITH ENCLOSED RUN

An excellent arrangement, affording the chicks opportunity to exercise in the open air regardless of weather conditions.

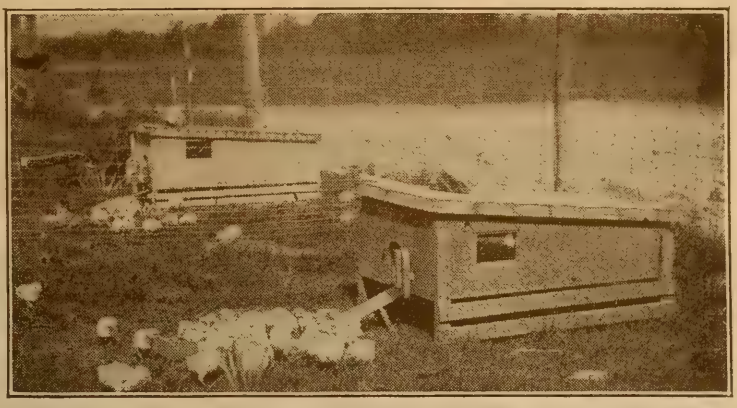
A POPULAR METHOD OF BROODING CHICKS
The hens and their broods are permitted full liberty.



ANOTHER SYSTEM OF NATURAL BROODING
Hens confined in small coops and "A"-shaped lath runs. Chicks given their liberty.



BROODING IN LARGE FLOCKS
In California hundreds of chicks are often successfully brooded in one flock, the heat being supplied by brooder stoves in which distillate is burned.



SMALL LAMP-HEATED BROODERS
An attached scratching shed or covered run would be a big improvement. Chicks must be confined during bad weather and they should have roomy quarters then.

On large plants the long pipe heated system is usually adopted. This concentrates the work and reduces the required labor. The most popular form of pipe systems today is that in which the hot water pipes run beneath the hover floors. The air passes over these, is heated and rises through domes under the hovers. As a rule it pays to purchase the heater system and hover fittings complete.

Many poultrymen have had great success in rearing large flocks of chicks in small houses fitted with brooder stoves. In the West distillate burning stoves

A HOME-MADE BROODER

Portable brooder of unusual capacity. Lamp box and scratching shed on ground floor, hover chamber and feeding room above. Cut at right shows burlap-covered shade frame in position.

are most popular. (See cut.) In the east the oil and coal burning types are preferred. Six to eight hundred chicks are frequently reared in one flock, which saves much labor as compared with lamp heated brooders accommodating from thirty to fifty chicks each.

Much experience and the exercise of considerable judgment is essential to success in handling such large flocks. The beginner will do well to work with smaller numbers at first.

During the past few years the fireless brooder has been widely used. The system is generally satisfactory, but it calls for much attention on the part of the attendant. This is its most serious disadvantage.

Fireless brooders can be cheaply constructed at home, but it will pay anyone intending to use them to purchase one or more of the commercial forms to use as a model.

Lamp heated brooders are of two kinds: indoor, to be operated inside of a comfortable building, and outdoor, or colony brooders, which are practically small brooder houses, each complete in itself. Select machines which are well built, convenient to handle, which have heating systems of sufficient power to control the temperature under all conditions, and which are roomy. Chicks always go back when shut up in small brooders for any length of time, as during continued periods of bad weather.

Here are a few suggestions. Keep the brooders scrupulously clean. Attend to the lamps regularly. Keep the hover temperature high enough to insure comfort and prevent crowding.

Do not overcrowd.

Feed the chicks regularly and liberally.

Supply water in abundance.

Give the chicks opportunity to exercise out of doors.

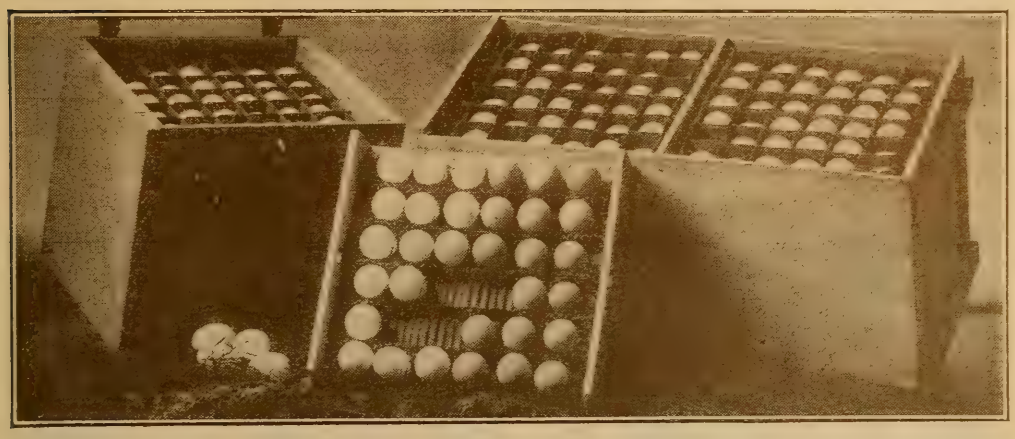
Don't bother with weaklings.

Move the chicks to larger quarters as soon as they can do without heat.

Give the growing stock free range if possible.

CHAPTER VIII

MARKETING POULTRY PRODUCTS



MARKET EGGS

Many poultrymen are very successful in the production of poultry and eggs, but fail in the matter of marketing. As a matter of fact, this part of the business is equally important as the producing end, as in a very large measure the profits of the business are determined by the receipts from the sale of the goods. If the income drops nearly to the point where it only equals or slightly exceeds the cost of production there is but little chance of showing a profit sufficiently large to warrant a continuance of the business. A careful study of available markets and approved methods of marketing will frequently enable the poultryman to greatly increase his receipts without enlarging his output, and this additional sum is clear profit.

It not infrequently happens that poultry plants are operated in defiance of well-established business principles, and that they continue to exist under such conditions, and even make reasonable profits, speaks volumes for the possibilities of this industry when properly managed. The poultry grower who does not produce any of the feed he requires and is not in position to purchase it in large quantities at lowest rates, must go to the retailer and pay any price demanded. If in addition to this he sells his products wholesale to the distributor, at a price set by the latter, he is entirely at the mercy

of others and he may be sure that they will take the lion's share of the profits. And so we see the wisdom of careful buying of raw materials and intelligent selling of the finished product, in order that the cost of production may be lowered and the receipts increased. This adds to the profits at each end of the line, and an astonishing difference in the year's business.

It must be admitted that in certain great agricultural sections, where eggs are produced in such numbers by the general farmer that production far exceeds local consumption and a distant market must be sought, the producer is largely dependent upon the shipper. However co-operative methods of selling may be introduced, especially through the local creamery, cheese factory or grange. Failing in this the dealer should be forced to buy on the "loss off" system, whereby the producer is paid according to the quality of his eggs rather than merely by count. Where this system has been introduced the farmers have been induced to care for their eggs in a better manner, and the quality and price greatly improved.

Country eggs are usually purchased by the local store keeper, who in turn consigns them to the big shippers or packers, from whom they go forward to the great consuming centers. It is evident that in handling such a perishable product as eggs there are many opportunities for deterioration in the quality unless care is exercised all along the line. The common farm practices of including in the market eggs those collected from stolen nests, those held for a rise in price, those stored in warm places or exposed to the sun for a considerable period, the dirty and slightly cracked stock, all react and result in a lower price. This is manifestly unfair to the careful producer who does not resort to such methods, but so long as the "case count" system of buying is in vogue he has no redress. Just as soon as the "loss off" plan is adopted, whereby all eggs are candled as purchased and inferior stock rejected, the honest man receives his due.

The effect of poor eggs on prices paid may be judged from the fact that the loss from dirty eggs, cracked shells, chick development, rot and mould, runs nearly twenty per cent in sections where the greater part of the output comes from general farms. Let the farmer eliminate all such losses himself and the price he receives will be increased from twenty to twenty-five per cent without working any hardship to storekeeper or shipper. This matter is right in the

hands of the farmer and the greater part of the responsibility is his.

In most sections there is a steady local demand for high-grade poultry products. By catering to this the storekeeper and shipper may be eliminated until such time as they offer satisfactory prices.

It has been said that high-grade goods sell themselves, and this is true to a great extent. However, they sell to better advantage in certain markets than in others, and upon this point the producer must use good business sense, not only in locating the best markets but in meeting their requirements in the matter of packages, etc.

WHITE PLYMOUTH ROCK ROASTERS

When bred to market type, White Rocks make fine table poultry. This variety is used extensively by growers of roasting chickens.

According to his situation, the poultryman may choose between these methods of disposing of his goods:

A. Selling direct to the consumer.

B. Selling direct to the retailer.

C. Selling on the open market through a commission house.

The first plan seems to offer the greatest advantage to the producer, as all middlemen and their profits are eliminated. But where a retail route is established the time required to make deliveries may be so great as to offset the better price received. It comes right down to a square business proposition. Can you in this way secure good pay for the time consumed? If not, sell your goods in some other way.

Where a vegetable or milk route is operated the additional cost of retailing poultry products amounts to very little, and under such conditions the retail route is a good thing.

In many cases family trade can be secured in distant cities if the producer can guarantee regular delivery. As a rule, however, the express charges on the small shipments eat up the profits. The development of our national parcels post system may offset this to a very large degree, and enable poultrymen to build up nice retail trade to the benefit of all concerned.

Hospitals, hotels, restaurants and clubs are excellent customers, since they allow good prices and will usually accept the entire output of a fair sized plant. This permits the making of large shipments and correspondingly reduces transportation cost.

Selling to the retailer is a very good plan. Large grocery or provision houses are usually glad to secure eggs and poultry of high grade and will pay a substantial premium therefor.

The easiest method of disposing of poultry products is through the commission houses, since these will receive and sell any quantity and all qualities. Some of these firms specialize in choice eggs, dressed and live poultry, and so establish a fine trade, which enables them to get satisfactory prices for superior goods. Your express agent can secure addresses of such firms in any city to which you wish to ship.

Eggs may be marketed to advantage at any season of the year, but naturally the best prices prevail during the months when laying is lightest. An examination of quotations for a full twelve months reveals the fact that lowest prices begin early in March and continue at a low level during April, May, June and the fore part of July. Then prices move steadily upward until about the first of November, due to the hens moulting and before the pullets begin production. Highest prices are reached in November, December and January, dropping rapidly during February and March when the spring flood of eggs comes on and the low price-level of the year is touched again.

The above outlines the general trend of prices, but does not take into consideration sharp breaks or rises due to periods of weather which may increase or retard egg production. A late open fall keeps prices down; a late cold spring keeps them up.

During the period of heaviest production there are vast quantities of surplus eggs, and prices would go to a ruinously low figure each spring if it were not for the cold storage system.

The egg producer who plans to cater to a select trade in a given locality should respect the prevailing fashion in the matter of egg color.

In certain sections, notably New England, brown-shelled eggs are preferred; in New York white-shelled eggs bring the best prices. The securing of eggs of the proper color is merely a matter of selecting the right breed.

When sorting eggs for market reject all that are small or abnormally large in size, and those of poor shape and with imperfect shells. Slightly soiled eggs may be wiped with a soft cloth. Soaking or scrubbing eggs is unadvisable since they injure the appearance and keeping qualities. Therefore, dirty stock should not be included but retained for home use.

Eggs delivered direct to the consumer should be packed in pasteboard cartons having a capacity of one dozen. These may be printed with the name of the farm, thus serving as a constant advertisement. When shipping to a distant point these cartons may be packed in an ordinary egg case, or in a specially constructed case to hold the required number of dozens.

Shipments to large consumers or to commission men should be packed in ordinary cases of thirty dozen capacity. The common pasteboard fillers are preferred to those in which each egg is held between wires, as the latter require so much time to empty. In all cases enough dry packing material, say excelsior or straw, should be included to prevent breakage in transit.

In the open market eggs are carefully graded according to size, and small stock sells at a price much below that secured for large eggs. A good market egg should weigh two ounces.

Eggs packed specially for cold storage should be full, fresh and sweet, and packed in standard thirty-dozen cases. Cases and fillers must be new and clean to prevent possible loss from mould and objectionable odors.

Live poultry is in demand in all large cities throughout the year, and many poultrymen who specialize in the production of eggs make it a practice to sell their surplus cockerels and old hens alive, thus avoiding the trouble of dressing them. The Jewish trade consumes vast quantities of live birds, and best prices are received during the Jewish holidays. The exact dates vary a little from year to year, but any commission house can supply information on this point.

Well-ventilated crates are a necessity for the shipment of live poultry. They should be of sufficient size to hold a reasonable number of birds comfortably, yet small enough to permit easy handling.

Large crates should have cross partitions to prevent the birds being thrown to one end when the crate is tipped. Much loss is occasioned in this way, which could be avoided by merely putting in partitions when building the crates. A good crate is shown in the chapter on poultry appliances.

Live poultry should reach the market not later in the week than Thursday night. The last thing before shipment the birds should be fed heavily and given plenty of water. Some whole corn should be thrown into the crate when the journey is to occupy more than a few hours.

Considerable shrinkage in weight may be expected, the greatest loss being on turkeys and large, soft chickens.

Dressed poultry should always be carefully prepared. Improper dressing causes many lots of otherwise fine stock to be sold at low figures, while inferior birds will sell to better advantage if nicely picked.

Of course the easiest way to dress poultry is to scald it, but dry picked stock is so much preferred and sells to such advantage that this method should ordinarily be used. Scalded stock is less attractive than that which has been dry picked, due to discoloration and puffing of the skin. Neither does it keep as well.

Market poultry should be starved for twelve to eighteen hours before killing. This insures complete emptying of the crops, a point which should be strictly observed. Water should be abundantly supplied, as this can easily be forced out of the mouth after killing.

Since most market poultry is sold with heads and legs left on the carcass, the method of killing should be such as to prevent mutilation. The best method is to "stick" the bird in the mouth and throat with a knife. The ideal killing knife has a stiff, narrow blade capable of holding a keen edge, and a stout handle. A very good one can be made from an eight-inch file, ground on a stone or emery wheel to the shape shown in the illustration.

POULTRY KILLING KNIFE

An excellent knife may be made from an 8-inch file. The blade should be made 2 inches long, ¼-inch wide, and ⅛-inch thick at the back.

A "pinning knife" with a short, dull blade is a great help in removing the troublesome pin feathers. These are caught between the thumb and knife blade and pulled out.

Another convenience is a small pail, or a tin can with a wire bail to which a hook is attached. This is hooked in the bird's lower jaw to catch the blood. It may be weighted with sand or corn meal. In the latter case meal and blood are useful for feeding.

Some pickers also provide a short, smooth, heavy club, say a hammer handle, with which to stun the bird after sticking.

To kill a bird successfully is not a difficult procedure, but it does require some practice before the best results are secured every time. Two things must be secured; thorough bleeding and speedy unconsciousness, with the relaxation that accompanies the latter.

Hang the bird at a convenient height, by means of a strong cord having an easy-running noose. Hold it under the left arm, back up, head to the front. Open the bill with the fingers of the left hand, then insert the knife, passing the point back to the junction of the neck and skull. Draw the blade across the large blood vessels, severing them and inducing free bleeding.

Now turn the knife edge upward, thrust the point through the roof of the mouth into the brain, and give it a half turn. If this is properly done the bird will give a spasmodic jerk and the feathers will be relaxed and made easy of removal.

Of course all sensation will be lost and no further pain inflicted on the victim.

This plan of sticking in the brain is best, but since it is necessary to strike a certain small section of it, many people prefer to stun with a club. The head is grasped in the left hand, skull uppermost, and a square, sharp blow delivered with the club upon the back of the head, which produces the spasmodic stiffening already referred to.

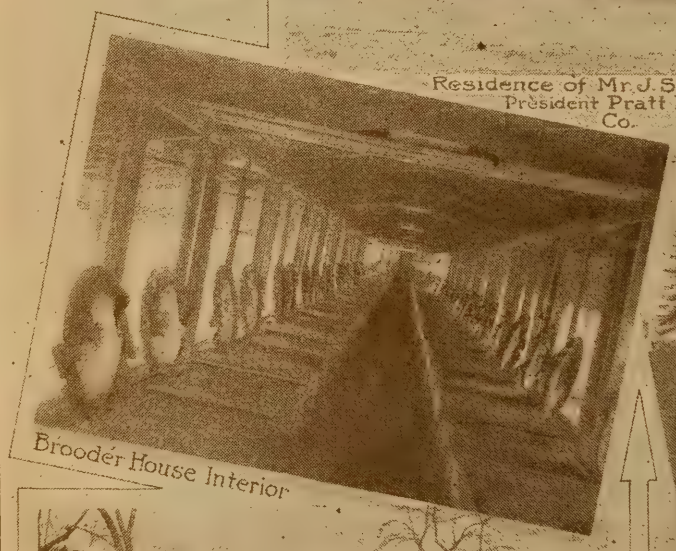
The receptacle for catching the blood is then suspended on the jaw and picking begun at once.

Dry picking is something of an art, but when once learned is not at all difficult. However, no one can dry pick a bird easily unless the sticking or clubbing has been done properly. Under the best of conditions some birds will be torn, but the rents may be easily repaired with a curved needle and fine thread.

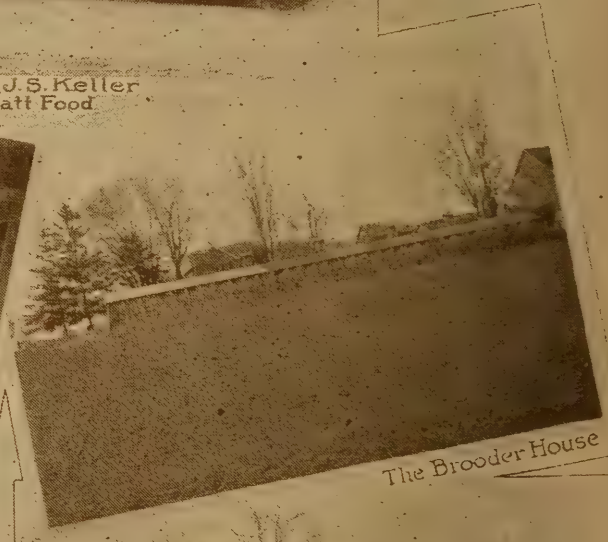
Storehouse, Feed Building and Incubator Cellar

One Type of Building for Special Matings

Residence of Mr. J. S. Keller President Pratt Food Co.



Brooder House Interior



The Brooder House

Special Breeding and Laying Houses

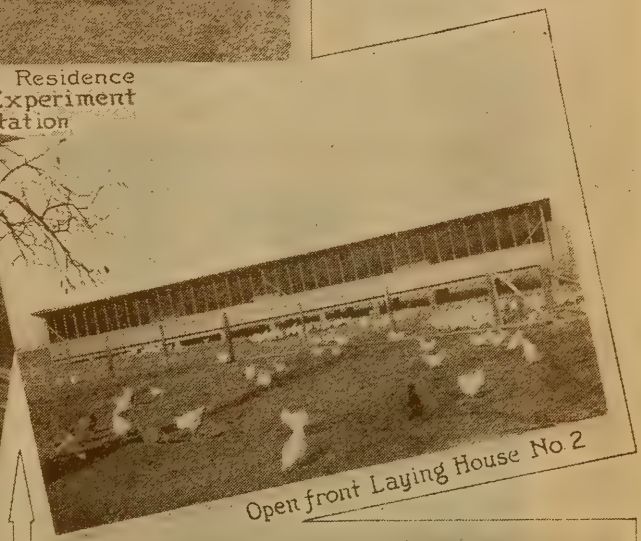
The Flock of Wild Ducks - Many Varieties

Colony Houses in Orchard

Special Breeding House

Director's Residence
Pratt Experiment
Station

Interior of Laying House



Open front Laying House No 2

Open front Laying House No 1

Fresh Air House for Cockerels

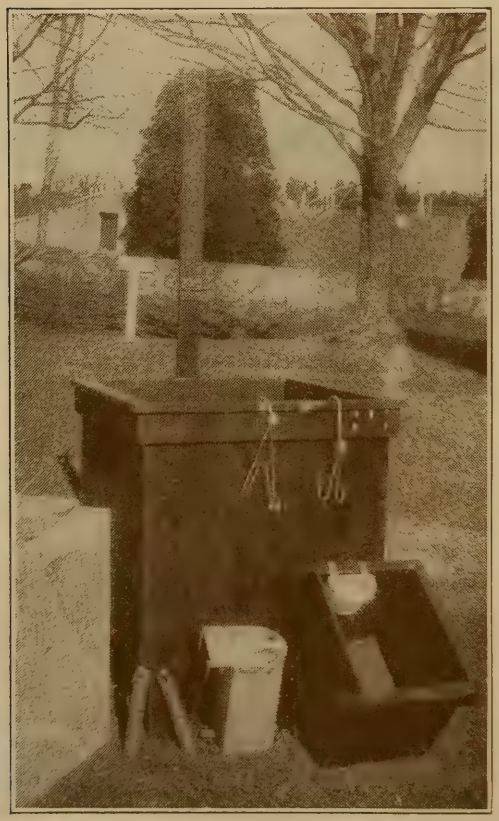
As a rule the coarse wing and tail feathers are snapped out first, after which the breast is plucked. Certain areas are tender, notably on the breast, thighs and wing joints, and these should be picked carefully. The feathers should not be pulled out by handfuls, but removed by a rolling motion of the hand which takes them out a few at a time, and still with considerable speed.

A dish of water should be placed near at hand in which the fingers may be dipped occasionally. This enables one to get a better grip on the soft feathers.

During the process of picking the coarse, worthless feathers should be thrown upon the floor, and all that are salable permitted to fall into a box or barrel for future sale.

Where many birds are dressed a picking box should be built, as this makes the work easier and saves much muss.

A very good style of picking or dressing box is shown in the engravings, which show the various parts so plainly that further description is not necessary.



DRESSING BOX

The illustration above shows the box in use; the other, the various parts of this convenient appliance. Note the cord, with loops for the bird's feet and hooks for the weights; the box for rough feathers; the water cup; the can to catch the blood, including point to hold the bird's head; the weights; and the ¼-inch mesh wire basket which fits inside the large box and may be removed to dry the feathers.

If scalding is practised the birds should be permitted to bleed a while after sticking, and then immersed in water which is kept just below the boiling point. Scald only enough to start the feathers freely, then pluck as rapidly as possible. Do not rub the skin, but pull the feathers out with the tips of the fingers. Do not dip the heads in the hot water.

After the bird is picked clean it should be hung up in a cold place or thrown into the cooling tank. Every bit of the animal heat must be removed before shipping, otherwise the stock will quickly spoil. Before packing, the heads and feet should be washed clean.

As previously stated, market stock is merely plucked, the heads, feet and entrails remaining with the carcass. For fancy private trade it often pays to dress the birds completely, thus making them more attractive to the housewife.

Broilers may be prepared as follows: Run a heavy, sharp knife along each side of and close to the back bone, severing the ribs. Carry the cuts under the neck and below the vent. Then lift out the back bone and the head and entrails will come with it. Remove the legs at the first joint. Open the bird and run the edge of the knife along the keel bone, which may then be removed. When this is done the carcass fattens out in the best possible shape to place on the broiler.

Cut the head from the neck and the latter from the balance of the back bone. Remove the gall bladder from the liver, empty the gizzard, trim out the heart. All of these go to the customer.

Roasters are fixed differently. Cut the skin from the back of the shank, exposing the leg sinews. Catch these over a strong hook in the wall and pull them out. Cut off the legs at the first joint.

Turn the bird back up, and slit the skin along the back of the neck. Cut off the latter close to the body and just below the head. Make a circular incision around the vent, large enough to permit the passage of the intestines, which are then drawn out. Clean up the liver, heart and gizzard, and place these, together with the neck, in the body cavity. Draw the neck skin down over the back and fold the wings back to hold it in place. Pass a clean string around the ends of the legs and tie them down to the pope's nose.

This method of dressing makes a plump, compact carcass, free from unsightly sprawling legs, wings and neck.

When shipping dressed poultry any considerable distance in warm weather, ice must be used. The best package is a clean barrel, in which the cracked ice and birds are packed in alternate layers. A large piece of ice—a "header"—is usually put on top, and clean burlap stretched over all.

Clean boxes are used for dry packing, which is commonly practised during cold weather. The box is first lined with paper and the stock packed in layers, with parchment paper between. Careful grading is necessary, and each box should be carefully marked with the number and kind of birds it contains, the gross and net weight, and the name of the shipper. Convenient box sizes are as below. Dimensions are all *inside measure.*

For one dozen broilers, weighing 24 lbs. and under: 16 x 15 x 3½ inches.

For one dozen broilers weighing 25 to 30 lbs.: 17 x 16 x 4 inches.

For one dozen chickens weighing 36 to 40 lbs.: 23 x 15½ x 4 inches.

For one dozen chickens weighing 45 to 50 lbs.: 24 x 16 x 4¼ inches.

For one dozen chickens weighing 60 to 70 lbs.: 20 x 16½ x 8½ inches.

For one dozen medium hen turkeys or geese: 24 x 19 x 11 inches.

Small boxes may be made of light lumber, ½-inch for ends and ¼-inch for the rest.

Large boxes should have ⅝-inch ends, and the rest ⅜-inch material.

At some seasons of the year or under certain conditions, live poultry will net the producer more than when dressed, especially when the item of labor is considered. The following table shows the average loss in weight in dressing, both when the stock is merely plucked and when heads, legs and intestines are removed. This will enable anyone to determine whether to dress the market birds or ship them alive.

LOSS IN DRESSING (Per cent. of live weight)

KIND	Bled and plucked	Head, feet and intestines removed
Cocks	7.8	23.4
Cockerels	11.0	26.0
Hens	7.7	24.2
Pullets	8.1	25.8

For convenience we present a brief summary showing seasons of the year when certain classes of poultry are most in demand, weights desired, etc.

Broilers: Individual or club broilers weigh 1½ to 2½ lbs. per pair. Most wanted in winter months.

Regular broilers weigh 4 lbs. per pair, best prices being paid during April, May and early June. The demand for these birds continues throughout the year.

MARKETING EGGS IN CHINA
The eggs are packed in baskets and transported by boat wherever possible.
(Photo from Prof. F. H. King.)

Roasters: Chickens weighing 8 lbs. or more per pair. Constant demand. Best prices during late winter and spring. Market usually low in the fall when great quantities of spring-hatched stock are available.

Fowls: Steady demand throughout the year. Best prices for live fowls during Jewish holidays. Old roosters are classed separately and bring low prices.

Capons: The larger the better. Sell best during winter and early spring months.

Turkeys: Wanted in all weights. Best prices at Thanksgiving and Christmas.

Geese: The earliest geese bring the highest prices. Much used by hotels at summer resorts. Also in demand during the holidays.

Ducks: Ducklings, or "green ducks" are in demand during summer and fall months. Adult stock is salable at all seasons.

Squabs: In steady demand throughout the year, but highest during fall and winter.

The soft feathers from all kinds of poultry should be preserved and marketed. Goose and duck feathers are most valuable, but turkey and chicken feathers bring enough to make it well worth while to save them.

Special Points.

When preparing poultry for the large city markets observe the following directions.

Do not remove the heads or feet, and leave undrawn.

Be sure to have all crops empty.

Pick chickens, fowls and squabs clean.

Pick ducks and geese clean or leave feathers on upper part of neck and first joint of wings.

Tie string around geese and ducks to confine the wings.

Pick turkeys clean or leave feathers on upper part of neck and first joint of wings. Leave the tassel on the breast of the toms.

Capons are dressed in a different manner. Leave the feathers on the head and upper part of neck, the tail and a short way up the back, the last two joints of the wings, and the lower joints of the legs. *Always cool THOROUGHLY before shipping.*

POULTRY DRESSING ESTABLISHMENT

From this plant are shipped great quantities of high-grade market poultry. It is located in the famous "South Shore district," near Boston. The live birds are purchased throughout the surrounding territory and are here dressed and packed for shipment.

CHAPTER IX

POULTRY DISEASES

TYPICAL CASES OF WHITE DIARRHEA

One of the pleasant features of poultry rearing is found in the fact that the work varies from month to month and from year to year, and that it has to do with living things. But this latter point is also a weakness, as where life is, so will disease and death be also. There is no more trying or discouraging experience than to have a fine flock of fowls ruined by contagious disease, or have the baby chicks die in spite of one's best care.

There are a great many different forms of disease to which domestic poultry are subject, but fortunately most of these are rare and the average poultryman will seldom be called upon to combat them. They are, therefore, of greater interest to the scientist than to the practical poultry grower, and for that reason they will not be discussed in this volume. The more common ailments are here briefly described, and the cause, symptoms and method of cure given. Should mysterious troubles appear in your flock, consult our Poultry Service Department, from which source you will receive personal advice relative to the proper way of overcoming the trouble. There is no charge for this special service.

We make no apology for recommending the line of Pratts Poultry Remedies in the text of this chapter, as these are the best prepara-

tions of which we know for curing the diseases for which they are specially prepared. If there were better we would certainly manufacture them. Since we do not know of any preparations which equal them in efficiency and convenience, we would neither be fair to our customers nor to ourselves if we suggested other treatment.

From long years of experience we are so certain that the various remedies here mentioned are efficacious and dependable, that we stand behind each one of them with this most satisfactory of guarantees:

"Your money back if it fails."

These goods may be secured of one or more dealers in each town, or ordered direct from us if necessary. You can use them with the utmost confidence, as we take the risk.

But many common diseases need not exist at all. A fowl in perfect physical condition, with digestive apparatus doing its full duty, with reproductive organs strong and active, and with good circulation, will usually throw off disease even if exposed to it. This does not refer to strictly contagious or infectious diseases like cholera, chicken pox, and the like, but it does apply to the great majority of disorders to which poultry flesh is heir.

It is of primary importance that the flock, especially the breeders, possess great constitutional vigor, and that this be maintained. It must be realized that every laying hen is under a constant strain, converting raw material into a concentrated food product, which at the same time affords the means of reproduction. Therefore, hens need very special care to prevent them from breaking down in one way or another, thus permitting disease to gain a foothold. It is right here that a reliable conditioner proves of benefit, keeping all the organs in condition to perform their normal functions and preventing any weak link in the chain from snapping. Pratts Poultry Regulator does just this. It strengthens the organs of digestion, it naturally stimulates and gives tone to the egg producing organs, it keeps the stock healthy and vigorous. This means more rapid growth or heavier egg production at a lower cost, and insures freedom from most diseases.

This subject of constitutional vigor has been given much attention by level-headed poultrymen of late, and its importance is more generally recognized than at any time in the history of the poultry industry. "Breed for health and vigor" is the watchword to-day,

and to this we add "Preserve health and vigor by the regular use of the time-tested conditioner, Pratts Poultry Regulator."

Cleanliness and sanitation are also barriers against disease and vermin. Many diseases are due to germ life, and the various destructive organisms thrive in dirty houses. We, therefore, strongly urge the regular use of Pratts Disinfectant to head off trouble from this source. Spray the houses and coops, scrub out the incubators and brooders, wash the drinking and feed dishes with a strong solution of this powerful preparation and disease germs will never secure a foothold.

Regarding the characteristic appearance of fowls in health and disease, Dr. Salmon says:

"We say that a bird is in good health when it appears lively, has a clear eye, a bright red comb, is quick and active in its movements, has a good appetite, and when the various organs perform their functions in a manner in which they are observed to act in all birds that are vigorous and thriving.

"On the other hand, we say a bird is diseased when some function or functions of its body are not performed as they are in the great majority of individuals, or when some organ presents an unusual form or appearance.

"Disease has, therefore, been defined as a life, the manifestations of which deviate more or less from the normal. Practically, we say, a bird is diseased when we observe that one or more of its functions are not carried on in a normal manner, or when we find unusual growths, injuries, or parasites affecting any of its organs."

It will pay every poultry raiser to learn the location of the various internal organs of a bird and their normal appearance by carefully examining healthy birds dressed for the table. Then when deaths occur post-mortem examinations may be intelligently conducted. Such examinations will frequently disclose the exact source of the trouble and enable one to take the necessary steps to head off further losses from diseases of a similar character.

Dead birds should be inspected as soon after death as possible. The most convenient method is as follows:

Place the bird on its back with legs and wings outspread, and drive a small nail through each foot and the joint of each wing. Slit the skin from the lower jaw right down to the vent and peel it back out of the way. Then with knife or blunt shears cut along the outer

edges of the breast bone and remove the entire breast, revealing the internal organs in their normal position.

Beginning at the mouth the windpipe may be traced to the lungs, and the gullet, or æsophagus, to the crop. The latter is a sack or pouch in front of the breast and partly between the branches of the "wish bone." The lining of the crop supplies certain juices for softening and dissolving the food. Following the food canal backward we find an enlargement, sometimes called the stomach, which also furnishes certain digestive fluids. Just beyond the stomach lies the gizzard with tough muscular walls suited to crush and grind the food.

Next comes a long loop in the intestinal canal, which encloses the pancreas, a flesh-colored organ whose duty it is to furnish the indispensible pancreatic juice. The liver, with the related gall bladder and dark red spleen, are next in order.

The intestine, folded back and forth in the abdominal cavity, sends out two branches or pouches a few inches from the rear end. These are the ceca, or "blind guts," and their exact function is not known. Finally the intestine enlarges and forms the cloaca into which the body wastes are poured and from which they are expelled.

Occupying pockets in the back of the bird may be observed the dark-colored kidneys, with tubes connecting them with the cloaca.

Lying close to the liver the heart will be seen, together with the great blood vessels through which the life-giving blood is pumped.

The ovary and oviduct, or egg tube, are easily located in females that have reached a fair stage of development. These are large during the period of egg production, but smaller or shrunken at other times. The ovary consists of a mass of globules of different sizes each of which may develop into the yolk of an egg. The oviduct conveys the yolk from the ovary to the cloaca, adding the white and shell during the passage.

The testicles of the male will be found in the region commonly known as "the small of the back." They are light colored and vary somewhat in size according to the season of the year.

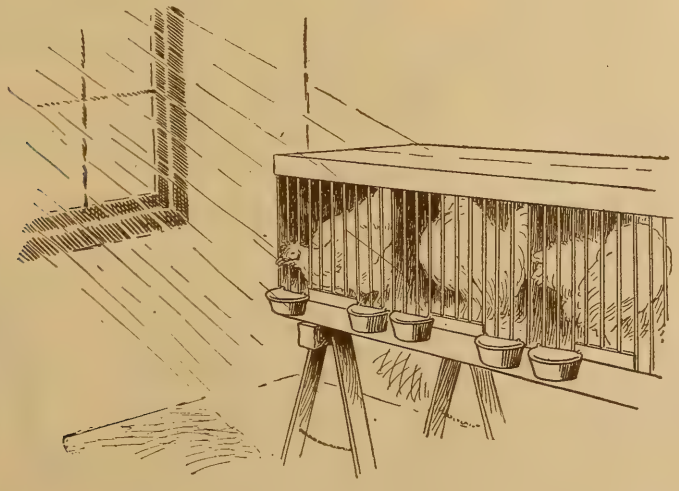
These are the most important organs, and all of them may be affected by disease. When their appearance in a state of health is once learned the changes due to disease are easily noted, and this makes the diagnosis much easier.

Some place should be provided for birds suffering with contagious diseases or which for some other reason must be kept apart from the flock. This will serve to keep diseases from spreading through the flock and also make the work of caring for ailing birds easier and more convenient.

Any small building or room with a southern exposure may be adapted to this purpose. It should be fitted with a few coops having tight sides and slatted fronts. These coops should be smoothly constructed with few cracks in order that they may be easily and thoroughly cleaned and disinfected. There should also be one or more pens of sufficient size to permit convalescent birds to take some exercise.

Fresh air and sunlight are essential. Arrangement should be made to admit the sun to every part of the room, and for thorough ventilation without draughts.

The hospital must be kept scrupulously clean and disinfected at frequent intervals, especially when treating cases of contagious dis-



FOWL HOSPITAL

ease. All food, droppings and litter removed from the coops must be destroyed. Bury deeply or burn. All drinking water should be emptied where none of the other fowls can get at it.

Bury deeply, or burn, every dead fowl or chicken. This is very important.

Drinking and feed dishes should be of such type as to permit frequent disinfection.

Pratts Poultry Remedies are not expensive. Every poultryman should keep a full line on hand for instant use. Get right after every case of sickness when it first appears, and much work, worry and loss will be prevented. In addition to the remedies, the careful poultryman may well procure a clinical thermometer, a pair of long nosed tweezers, a small pair of scissors, a small keen knife, and a supply of absorbent cotton. These conveniences make the work easier and results surer.

GIVING A PILL

When treating the whole flock, the medicine is most easily given by putting it in the drinking water or mixing it with soft feed. Treatment of individual birds is not difficult, but requires time and patience. The easiest way is to administer the remedy in pill or tablet form when possible. A few drops of liquid or a small amount of powder can be mixed with corn meal or flour and rolled into pills. To give these, proceed as follows: Hold the fowl under one arm and gently open the mouth. Push the pill well down into the throat, then release the bird's head and the pill will be swallowed.

Small doses of liquid may be dropped into the open mouth by means of a medicine dropper or fountain pen filler.

GIVING LIQUID WITH TUBE

Large doses of liquid, liquids which are objectionable to the bird and may be refused, or heavy oils which may clog the throat and cause strangulation, are best passed directly into the crop by means of a glass tube or small catheter. Proceed as follows: Suck the medicine up into the tube and immediately seal the upper end of the tube with the finger to prevent the medicine from running out. Insert the lower end of the tube in the bird's mouth and gently pass it down the gullet and into the crop. Then blow the dose into the crop and remove the tube. Exercise care when inserting the tube to avoid tearing or injuring the mouth, tongue and gullet.

The tube should be thoroughly cleaned before using it for another case.

APPLYING LICE POWDER

The easiest way to rid fowls of body lice is to dust them with Pratts Powdered Lice Killer, which is packed in sprinkler top cans. Hold the fowl by the legs, head down. This causes the feathers to fall open and permits the powder to sift through to the skin. Sprinkle on a liberal amount of the powder and with the fingers work it well into the plumage, especially into the fluffy feathers around the vent.

If the fowl is held above a tray or shallow box, the surplus powder which drops off will be saved.

Mites are easily disposed of by spraying or painting the walls near the roosts, also nests, roosts and dripping boards with Pratts Liquid Lice Killer.

The more common poultry diseases are discussed below. The symptom chart on page 94 will be found most convenient, since the particular disease may be referred to without reading the entire text.

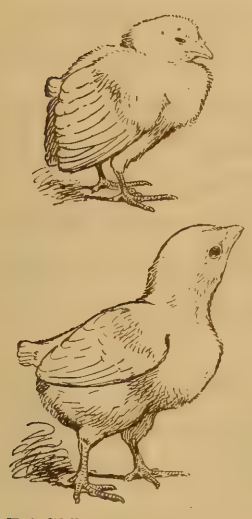
1. **Apoplexy.** *Symptoms:* Sudden death or paralysis, due to rupture of blood vessel in brain. *Cause:* Poor condition, over-fatness. *Treatment:* Useless to treat affected individual, but flock should have attention. Reduce the ration, feed less corn, supply Pratts Poultry Regulator to improve condition.

2. **Aspergillosis.** (Fowls.) *Symptoms:* Weakness, inability to stand, general exhaustion, rough plumage, dragging wings, rapid breathing, rattling in throat, emaciation. *Cause:* Growth of mould in air passages. *Treatment:* Since this mould comes from mouldy grain and litter, these should be avoided. Treatment of badly infected birds useless. Avoid cause and keep flock free from infection. Disinfect buildings with Pratts Disinfectant. Give Pratts Poultry Regulator to put flock in condition to resist disease. (Chicks.) *Symptoms:* Chicks sleepy, dragging wings, rapid breathing, diarrhea, usually light colored. Yellowish tubercles on lungs. Cause and treatment as above.

SYMPTOM CHART

Find symptom on chart, then refer to paragraph bearing corresponding number

SYMPTOMS	SEE No.
Abdomen distended	13
Blood in eggs	4
Canker	8, 25
Comb frozen	15
Cough	6, 16, 25
Crop distended	11, 12
Cuts	29
Diarrhea	2, 3, 11, 27, 28
Difficult breathing	9, 25
Discharge from eyes	9, 25
Discharge from nostrils	9, 25
Discharge (white) from vent	28
Dragging leg	5
Dragging wings	2, 3, 5, 11
Drowsiness	11
Emaciation	2, 3, 12
Eruption on head	10
Exhaustion	2
Gaping	16
Gasping	16
Lameness	24, 27
Limping	7, 24
Limp neck	20
Loss in weight	12, 27
Nits	19
Organs protruding through vent	14
Pale heads	22, 27
Paralysis	1
Patches in mouth	8, 25
Picking among feathers	19
Scratching body	19
Scaly legs	26
Short backs	3
Sleepiness	2, 3, 11
Sneezing	9, 25
Sores	29
Sores on head	10
Stiff joints	24
Straining as though laying	23
Sudden death	1
Swollen eyes	25
Swollen joints	24
Thirst	11
Uneasiness	19, 23
Weakness	2, 12, 22, 27
Weak legs	18
Weak neck	20
Whistling	6
White diarrhea	3
Worms	17
Worms in droppings	17
Wounds	29



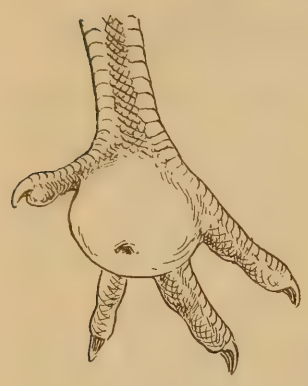
BACILLARY WHITE DIARRHEA. INFECTED AND NORMAL CHICKS.

3. Bacillary White Diarrhea. (Young Chicks.) *Symptoms:* Sleepy, chilly, drooping wings, rough feathers, emaciation, diarrhea—usually white or creamy—short backs, most deaths under three weeks. Livers usually show streaks and patches of red, intestines nearly empty and light in color. *Cause:* Bacteria. The disease may be inherited from hens with infected ovaries, or pass from chick to chick. In latter case, greatest period of danger is during first three days after hatching. Disease may be brought upon farm by infected breeders, eggs for hatching, or baby chicks. Do not buy these from plants where the disease has appeared. *Treatment:* Badly infected chicks not worth curing. Prevention best. Disinfect incubators, brooders, feed and water dishes regularly and thoroughly with Pratts Disinfectant. Keep chicks in *dark* incubator two or three days after hatching, reducing temperature gradually. Give Pratts White Diarrhea Remedy in drinking water for one week. It will prevent the disease from spreading and cure mild cases. Never let a chick that has shown these symptoms be used as a breeder. Feed Pratts Baby Chick Food for three weeks to give vigorous start.

4. Bloody Spots in Eggs. *Symptoms:* Small clots of blood on yolks and in whites of eggs. *Cause:* Rupture of blood vessel in ovary or oviduct. Usually due to weakness of these organs. *Treatment:* Reduce ration for a few days and give Pratts Poultry Regulator to strengthen reproductive organs.

5. Broken Bones. *Symptoms:* Dragging leg or wing. *Treatment:* Join the ends of the bone and hold them in place by means of splints and soft bandages. Keep bird in small quarters. Give moderate ration and Pratts Condition Tablets.

6. Bronchitis. *Symptoms:* Rapid breathing and cough, at first whistling sound, later rattling or bubbling in throat. *Cause:* Development of common cold, inhaling of dust. *Treatment:* Place bird in dry quarters. Give teaspoonful castor oil, and Pratts Bronchitis Remedy.



BUMBLE FOOT

7. Bumblefoot. *Symptoms:* Limping. *Cause:* Abscess on bottom of foot from bruises or small wounds. *Treatment:* Place bird in small pen with soft litter. Operate as follows: Tie soft cord tightly above foot to check blood. Prepare strong solution Pratts Disinfectant in which to wash the foot and knife. With sharp blade cut deeply into abscess and remove all pus. Wash wound thoroughly with solution. Anoint with Pratts Healing Ointment, and bandage to exclude dirt. Remove cord. Repeat if necessary. Give Pratts Condition Tablets.

8. Canker. *Symptoms:* Cheesy patches in mouth and throat. *Cause:* Growths of pus germs due to injury or digestive troubles. *Treatment:* Put birds in good condition with Pratts Poultry Regulator. Apply Pratts Disinfectant, undiluted, to the canker patches with small cotton swab.

9. Catarrh. *Symptoms:* Somewhat resembles early stages of roup, but is not contagious. Sick birds appear dull, sneeze, breathing is difficult, with watery discharges from nostrils and eyes. *Cause:* Exposure, drafts, dampness. Birds in poor condition most affected. *Treatment:* Put entire flock in good condition with Pratts Poultry Regulator. Give affected birds Pratts Roup Cure to control the disease, and Pratts Condition Tablets to quickly restore to condition.

CHICKEN POX

10. Chicken Pox or Sore Head. *Symptoms:* Eruption on parts of head not covered with feathers. At first small, gray in color. Soon increase in size and extent. Head and comb become covered with scabs. Sores on eyelids frequently close eyes. In extreme cases disease spreads to other parts of body. *Treatment:* Contagious. Remove sick birds and clean and disinfect buildings and furnishings with Pratts Disinfectant. Treat all cases with Pratts Sore Head (Chicken Pox) Remedy.

11. **Cholera.** One of the most fatal and highly infectious of poultry diseases. *Symptoms:* Diarrhea, usually yellow, but frequently green in color. Drowsiness, drooping wings, head drawn down, weakness, great thirst, crop distended with food. In last stages the fowl apparently drops into a deep sleep, lasting a day or two before death. The disease will sweep through the whole flock unless arrested. *Cause:* Bacteria. May be brought upon the farm by affected birds or on tools, feet of the attendant, etc. Separate sick birds from balance of flock as soon as the first symptoms are noted. Move healthy birds to new ground if possible. Disinfect, with the utmost care, houses, furnishings, tools, pails, everything used about the birds. Pratts Disinfectant in strong solution is best for this. Sprinkle the yards with lime and disinfectant solution, and grow heavy crop of vegetation. Give entire flock Pratts Poultry Regulator. Use Pratts Chicken Cholera Remedy both as a cure and preventive. Burn all dead birds and all litter, food, droppings, etc., taken from the coops. We cannot emphasize too strongly the necessity of thorough and frequent disinfection.

CHOLERA

12. **Crop Bound.** *Symptoms:* Crop packed with food, usually solid. Bird becomes weak and emaciated. A healthy fowl appears hungry and continues to eat until the crop is distended to the utmost. *Cause:* In some cases due to paralysis of the crop, as in cholera. Where no disease of this character is present the trouble is due to stoppage of the œsophagus, or passage through which the food passes from the crop. Frequently due to coarse hay, corn fodder, or pieces of gristle. *Treatment:* Affected birds must be given individual treatment. Give liberal doses of warm sweet oil, as much as the crop will hold. Then knead the contents thoroughly. Persistent work will frequently clear the passage. Or use warm water, washing out the contents and then using the oil as above. In extreme cases, operate on valuable birds. Make a clean cut through the outer skin and crop wall. Remove entire contents, using care to remove the obstruction. Take a few stitches in the opening, using fine needle

and silk thread. During the operation, keep the hands and instruments clean, washing them in a strong solution of Pratts Disinfectant. Confine the bird and supply a limited amount of soft food until recovery.

13. **Dropsy.** *Symptoms:* Abdomen distended, filled with liquid. Fowl feeble, with pale comb and poor appetite. *Cause:* Bad feeding, unsanitary conditions. *Treatment:* Severe cases not worth treating. Prevent by keeping flock in condition with Pratts Poultry Regulator and quarters sanitary with Pratts Disinfectant.

Egg Bound. See Obstruction of Oviduct No. 23.

14. **Eversion of Oviduct.** *Symptoms:* Portion of the oviduct protruding through the vent. *Cause:* Straining to lay large egg; straining to lay when oviduct is obstructed; constipation. *Treatment:* Thoroughly wash the protruding oviduct and adjacent parts with lukewarm solution Pratts Disinfectant; grease well with Pratts Healing Ointment and replace. Confine the fowl, feed lightly and give Pratts Condition Tablets.

15. **Frozen Comb.** *Symptoms:* Comb appears white and bloodless. Later turns dark, may get sore, and a whole or part drop off. *Cause:* Extreme cold. Especially affects birds of low vitality and those kept in damp quarters. *Treatment:* Prevent by keeping entire flock in good condition with Pratts Poultry Regulator, and housed in dry buildings. Frozen combs must be treated separately. Rub each with snow or hold in cold water until frost is drawn out. Then grease liberally with Pratts Healing Ointment and rub briskly until the blood returns to every part of the comb.

GAPES

16. **Gapes.** *Symptoms:* Usually afflicts young chicks. Frequent gasping; gaping; coughing; discharge of mucus and worms from throat. *Cause:* Small Y-shaped worm, about ½-inch long. May be either pale or red in color. Attaches itself to interior walls of windpipe, weakening the chick by sucking the blood, and also causing strangulation. This apparently double-headed worm is really two worms, one of each sex, joined together. *Treatment:* Use Pratts Gape Remedy. Disinfect floors of coops and runs with Pratts Disinfectant.

17. **Intestinal Parasites.** Poultry of all kinds and ages harbor various types of worms in the intestines. When few are present these do no particular harm, but cause much damage when in large numbers. *Symptoms:* Small worms and segments of tape worms are found in the droppings. The affected bird may be dull and in poor condition. *Treatment:* The regular use of Pratts Poultry Regulator will control this trouble. Severe cases should be treated individually. By means of a tube give one teaspoonful of oil of turpentine mixed with an equal amount of olive or sweet oil. Follow in twenty-four hours with teaspoonful of castor oil.

18. **Leg Weakness.** (Chicks.) *Symptoms:* Chicks walk in a wobbly, weak-kneed fashion, often resting or hobbling along on the joints. *Cause:* Feed lacking in bone and animal matter; close confinement; lack of exercise; over-heating in brooders. *Treatment:* Feed young chicks on Pratts Baby Chick Food. Give fair amount of beef or fish scrap and bone meal. Afford opportunity for exercise, especially on the ground. Avoid bottom heat in brooders. Feed liberally on green food. Add small quantity Pratts Poultry Regulator to the ration.

19. **Lice.** There are at least eight species of lice which live upon fowls, five being commonly found. *Symptoms:* Uneasiness; scratching and picking among feathers; general unthriftiness; lice present among the feathers; "nits" or egg clusters at base of feathers, especially near the vent. *Treatment:* Dust thoroughly and frequently with Pratts Powdered Lice Killer. Continue treatment until after all nits have hatched and been killed. Spray or paint roosts and nests with Pratts Liquid Lice Killer or Pratts Disinfectant.

20. **Limberneck.** *Symptoms:* The affected bird loses control of neck muscles, the neck becoming limp and the head hanging. Common in the South. *Cause:* Usually caused by eating decayed meat, but may come from indigestion or the action of internal parasites. *Treatment:* Clean up and disinfect the premises. Give the entire flock Pratts Poultry Regulator. Treat individual cases with Pratts Condition Tablets, following liberal dose of castor oil.

21. **Liver Diseases.** There are several diseases of the liver, with no prominent symptoms. If the flock is not doing well, kill several birds and examine the livers. If these are found to be abnormal treat the whole flock. *Treatment:* Put the buildings in sanitary con-

dition with Pratts Disinfectant. Feed a light ration containing plenty of green food and Pratts Poultry Regulator. Induce exercise, especially in the open air. Individual treatment does not pay. If the flock fails to respond to the above treatment, kill and market the birds and replace with healthy stock.

22. **Mites.** The common red mite is a minute eight-legged animal related to the spiders. It lives in cracks and crevices of the roosts, dropping boards, nests, coops and brooders, visiting the chicks and fowls only to suck the blood. *Symptoms:* Chicks are pale and weak; hens are much disturbed at night and appear ill-nourished; sitting hens frequently die on the nest. The mites will be found in cracks, under cleats, in the nesting material, etc. When present in large numbers they give off a peculiar odor, which the experienced poultryman will quickly recognize. *Treatment:* Clean out the accumulated droppings at frequent intervals. Remove and burn old litter and nesting material. Paint or spray the house, particularly near roosts and nests, with Pratts Liquid Lice Killer or Pratts Disinfectant. Dust the fowls with Pratts Powdered Lice Killer.

23. **Obstruction of Oviduct.** (Egg Bound.) The affected bird appears restless; visits the nest frequently and strains as though laying. Gentle pressure of the fingers on the sides of the abdomen enables one to feel the egg if one is lodged in the lower portion of the oviduct. *Treatment:* Grease the vent thoroughly with Pratts Healing Ointment, rubbing the material well up inside. If relief does not follow, hold the bird above a kettle of boiling water, permitting the steam to strike and enter the vent, thus relaxing the parts. Then grease again as above. In extreme cases gently force the egg toward the opening until the end can be seen. Break the shell with an awl or blunt knife, and with a small spoon remove the contents. Then pick out the rest of the shell with tweezers. Disinfect the parts with a strong solution of Pratts Disinfectant. Place the bird in small pen, feed sparingly and give Pratts Condition Tablets.

24. **Rheumatism.** *Symptoms:* Lameness; stiffness and swelling of the joints. *Cause:* Exposure to cold and dampness. *Treatment:* Remove the cause by making quarters dry and sunny. Improve general condition with Pratts Poultry Regulator. Rub affected parts with Pratts Liniment.

ROUP

25. Roup. *Symptoms:* Bad smelling discharge from the nostrils; sticky discharge from the eyes; feathers under wings and on back smeared and sticky, where bird has wiped its head; sometimes coughing and sneezing; eyes stuck shut; eyes closed and swollen out; mouth forced open by cheesy growth; patches of canker in mouth and throat. *Treatment:* The disease is very contagious. Remove all birds showing symptoms. Clean up and disinfect the quarters, using Pratts Disinfectant liberally. Give entire flock, sick and well, Pratts Roup Cure. Give the healthy flock Pratts Poultry Regulator. Treat the sick birds with Pratts Condition Tablets in addition to the Roup Cure. Burn the bodies of all birds that die, and all material removed from the hospital.

SCALY LEG

26. Scaly Leg. *Symptoms:* Scaly, rough, crusty appearance of feet and shanks. *Cause:* A minute mite which burrows under the scales and into the tissues of the leg. *Treatment:* Apply Pratts Scaly Leg Ointment as directed.

Sore Head. See Chicken Pox, No. 10.

27. Tuberculosis. *Cause:* A minute germ. *Symptoms:* Steady loss in weight; paleness of comb, wattles and face; general weakness; lameness; ruffling of feathers; frequently diarrhea. Eye bright; ravenous appetite. *Treatment:* The disease is contagious and will spread through the flock unless proper precautions are taken. Remove affected birds. Disinfect the poultry plant and suroundings with Pratts Disinfectant. Kill birds in advanced stages. Give the whole flock a nourishing ration, and include Pratts Poultry Regulator. Use lime freely. If disease continues to spread, dispose of entire flock, disinfect with greatest care, start anew with healthy stock.

28. Vent Gleet. *Symptoms:* Excrement voided frequently and in small quantities. Vent is red, dry and swollen. A discharge soon makes its appearance, at first watery, but later white, thick and offensive. This collects on the feathers, obstructing and irritating

the vent. Sores or ulcers may appear, due to the bird constantly picking at the affected parts. *Treatment:* Give liberal dose of castor oil. Soak the affected parts with warm solution of Pratts Disinfectant, made very strong, then remove the accumulated matter. Apply the solution again, injecting a liberal quantity well up into the vent. Dust the sores with Pratts Healing Powder. Continue until a cure is effected. Birds having advanced cases should be killed. *Warning—The attendant should exercise extreme care to prevent any of the discharge from getting into cuts, sores, or the eyes. Inflammation will follow if this occurs.*

Worms. See Intestinal Parasites, No. 17.

29. **Wounds,** cuts, sores, should be bathed with a solution of Pratts Disinfectant, and then treated with Pratts Healing Ointment or Pratts Healing Powder, according to which is more convenient.

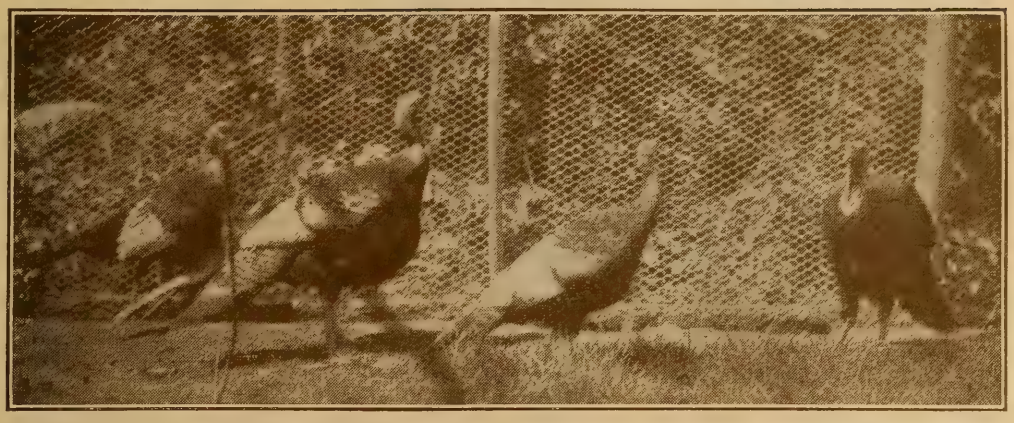
White Diarrhea. See Bacillary White Diarrhea, No. 3.

ADVANCED CASE OF ROUP.
Eye closed and forced out and mouth forced open by cheesy growth.

"Pratts Handy Chart of Poultry Diseases" contains the essential portions of this chapter. It may be tacked on the wall of the poultry house for consultation with the ailing bird right at hand. Write for a free copy.

CHAPTER X

TURKEYS



BRONZE AND WILD TURKEYS

The turkey has been aptly called "the king of the poultry yard." This magnificent bird is probably the best contribution that America has made to the list of domestic animals, and because of its beauty and strength, its courage and economic value, Benjamin Franklin contended that it deserves the place now occupied by the eagle as our national emblem.

When the Spaniards came to America they observed the turkey, both wild and in a state of domestication. Cortes found them abundant in Mexico, where they supplied "the cheapest meat." They were taken to Spain somewhere about the year 1520 and shortly thereafter appeared in France.

In the year 1524 turkeys were imported into England, probably from Spain. For a great many years they were rare, but gradually increased in numbers until they became common upon the tables of rich and poor alike. Certainly by 1573 they were so used, as a poet writing of Christmas fare at that date mentions

"Pig, veal, goose and capon,
and turkey well drest."

Turkeys formed one of the principal dishes at the wedding feast of Charles IX of France and Elizabeth of Austria. This was held

in June, 1576. According to the records "a large number of these birds had been sent over from Boston to St. Malo, and when the ship reached that port the provincial governor despatched a dozen of them to the chef of the king's kitchen, thinking they would be a welcome addition to the royal table. These twelve turkeys were stuffed and served on the spits, like so many larks, and the great dignitaries of the court, as well as the Cardinal de Lorraine and the Queen-mother, ate so much of them that they all had an attack of indigestion. Charles IX was so pleased with them that he began to breed turkeys in the forest of St. Germain, and his example was soon followed by many of the great landowners."

Certain it is that the turkey rapidly spread over Europe, its popularity being then, as now, due to its great size and flesh of fine quality.

The Mexican species is dark, almost black in color, and it is also smaller than its northern cousin, the American Wild Turkey. In all probability the former is the kind that first appeared in Europe, followed later by the larger and more brilliantly colored type. From these sources have sprung all of our present recognized varieties.

In spite of their great size, which makes them desirable prizes for the sportsmen, wild turkeys are still found in certain parts of America, even as far north as Pennsylvania. This is very fortunate,

A TURKEY PARK
Woodland enclosed with poultry netting. Note the nest and roosts.

as the wild stock supplies a fountain of vigorous blood which may be resorted to when necessary to build up the domestic flocks that frequently deteriorate in size and vigor. A few flocks of pure wild turkeys are now being carefully bred, and toms from them are in big demand.

THE KING OF THE POULTRY YARD

Our breeders recognize six varieties of turkeys, the Bronze, the Narragansett, the Buff, the Slate, the White Holland and the Black.

Of these the Bronze is the most popular, since it is by far the largest variety and possesses the handsomest plumage. Weights for this variety are as follows: Adult cock thirty-six pounds, cockerel twenty-five pounds, hen twenty pounds, pullet sixteen pounds.

The smallest variety is the White Holland, with the following weights: Cock twenty-six pounds, hen sixteen pounds, cockerel eighteen pounds, pullet twelve pounds.

Any of the turkeys mentioned will prove entirely satisfactory provided the stock is healthy and vigorous. The Bronze is best for the production of huge carcasses, while the White Holland dresses up to a popular size for small families. This latter variety is gaining in public esteem because it is more domestic, less inclined to wander, than the others. This is a big advantage, especially in thickly settled communities where trespassing birds cause endless trouble.

While breeding turkeys have been kept in large enclosed yards with some degree of success, and even induced to use trap nests, it is not wise to attempt to breed them in confinement. They are peculiarly a farm bird, delighting to roam at will over pasture, tillage and wood land where they find the best natural conditions and pick up a great deal of their food in the form of worms, grasshoppers, weed seeds, and other turkey dainties. In this way they do a tremendous

MEXICAN POULTRY SELLERS

Owing to the hot climate turkeys and other poultry are sold alive, being carried to market on the backs of burros and men, as shown above.

amount of good to the farmer, and pay for the privilege as well in the form of great carcasses of dainty flesh.

Because of their peculiar habits and characteristics, therefore, turkeys are most easily and cheaply grown on large farms. During recent years some breeders have been successful in protecting their birds from thieves and natural enemies by keeping them in huge parks, made by enclosing a large area with three-foot poultry netting, above which a few strands of barbed wire are stretched at intervals of ten to twelve inches. Such enclosure should include an orchard or tract of woodland, a dry, sunny field, and a spring, pond or stream. Under these conditions the cost of raising is increased not only on account of the fencing expense, but because more feed must be supplied. On the other hand losses are greatly reduced and the difference of a few birds to market each fall makes a big increase in the season's income. It is quite probable that this system will be commonly used in the future. Present prices of dressed turkeys seem to warrant the investment of a considerable sum in the necessary equipment for raising them.

Excepting in the more northerly section of the country where the cold is unusually severe and snow fall heavy, adult turkeys require no special buildings. They will be comfortable and thrive if permitted to roost in a thicket of trees, or under the protection of a high barn or other large building. It is a common practice to put up high roosts near the south side of a building and permit the adult birds to perch thereon during the entire year. In some cases further protection is provided in the form of a roof, and occasionally a board shield is nailed up back of the roosts. Thus it is evident that little money is needed for buildings, and this may permit of the erection of a park as described above, without making the investment top-heavy.

The best breeding birds are medium in size, with stout bones and big frames. It is essential that their breasts be long and deep, as these make the best market carcasses. In every case the stock should be perfectly healthy and free from such deformities as crooked backs and breasts. Uniformity in the type is desirable, as this will mean a fine, even lot of youngsters.

So far as possible avoid inbreeding. The male should never be closely related to the females. There is no fixed rule regarding the number of hens allowed one tom. Everything depends upon the

vigor of the latter. In common practice the number runs from six to twelve.

When breeding stock has free range they require but little special care in the way of feeding. They should receive a fairly liberal ration of mixed grains. In fact any good grain mixture for hens will prove entirely satisfactory. An occasional feed of mash will be relished and may be used to advantage as the laying season approaches. Crushed oyster shells should be supplied at this time also.

The hens begin laying early in the spring, in many cases so early that the eggs are spoiled by chilling during the cold nights. As in other races of poultry, the females vary in their capacity for egg production, but from twenty to thirty eggs is the average. In exceptional cases double this number are produced.

Turkey hens seldom lay in farm buildings, preferring to secrete their eggs in nests under brush piles, in fence corners and other out of the way places. Some growers endeavor to induce the hens to make their nests near the house by providing brush piles and other desirable places right at hand. This practice frequently pays well as much time and many valuable eggs are saved.

As the laying season approaches the turkey hens begin to act uneasy and frequently wander off alone searching for suitable nesting spots. At this time they should be watched until the various nests are located, and then these should be visited daily in order to collect the eggs as they are laid. These should be removed without disturbing the nest in the slightest degree, and common hens' eggs with brown shells substituted. After three or four nest eggs have been deposited no more will be required.

The turkey eggs should be carefully marked with the number of the turkey hen and the date laid, packed in dry bran, large end uppermost, and stored in a cool, dry place.

Should the turkey hen show signs of broodiness after laying a fair clutch of eggs she may be permitted to sit, or the nest may be broken up, as seems best. In the latter case she will usually make a new nest and begin laying again.

Turkey growers differ in their opinion as to the proper course, but the majority use common hens to hatch the first clutch of eggs and permit the turkeys to hatch the second. In view of the fact that common hens seem to harbor the organism which causes the most destructive of turkey diseases—black head—the wisdom of this pro-

cedure is open to debate. At any rate many of the most successful raisers of turkeys state their belief that best results are secured where turkeys are kept entirely apart from fowls, not even permitted to range over the same land.

Some attempts to hatch and rear turkeys by artificial means have been made in recent years, and a fair degree of success secured. It is to be hoped that this method will be perfected, as the eggs are so valuable that it seems a pity to devote the turkey hens to the work of incubation when they might be kept laying.

YOUNG BRONZE TOM

If the eggs are put under fowls the nests may be located in a safe place and protected from the various enemies that break up so many nests out in the open. When the turkey hens are permitted to sit in their own nests they should be afforded as much protection as they will permit. In exceptional cases birds that are particularly tame will allow the placing of a large coop directly over the nest. Even timid hens will usually accept the situation if a fence of poultry netting is swung around the nest at a distance of a few feet, and this will serve to keep out dogs and foxes at least. Of course coop doors and fence gates should be opened daily to permit the sitter to come off for food, and again closed before night.

Each sitting hen should be given only such eggs as she can completely cover. The eggs are worth too much to be wasted.

At the beginning of the period of incubation, again at the end of ten days, and a third time just before the hatch is due, the sitters

should be thoroughly dusted with Pratts Lice Killer. This is a simple precaution, but it will prevent heavy loss in many cases.

The eggs hatch in twenty-eight or twenty-nine days, and at this time the sitters should be watched very carefully. Sometimes a hen will walk away from the nest with the first poults that appear, leaving the rest to die in the shell. Losses of this kind are easily prevented if the attendant will stay on the job.

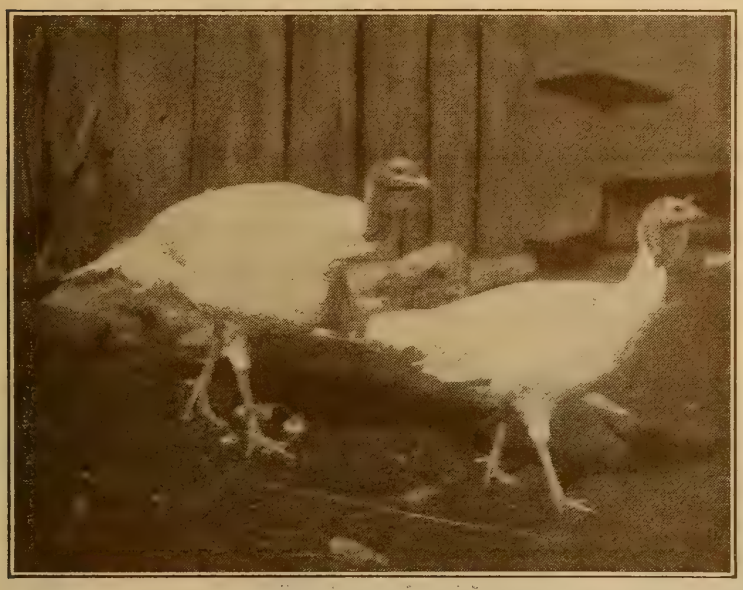
From the time the poults appear until they have become well feathered and reached the size of pigeons the turkey raiser is on the anxious seat. The youngsters are so tender and are so easily killed that they demand constant attention. Just how the wild turkeys manage to increase in numbers when exposed to the weather and the raids of so many natural enemies is a question that is hard to answer.

When the poults are entrusted to the care of common fowls they are easily kept close at hand. But the turkey hens, while they are excellent mothers, delight in taking their young on long rambles from which many never return. In view of this fact it is best to restrain the turkey mother until the danger period is past.

The poults must be guarded against dampness and fed with much care. This means constant vigilance, but it pays.

While the rations supplied by different growers very in many ways, almost all recommend milk curds, baked corn bread, or Johnny cake, cooked potatoes and greens, especially dandelions. A farm woman in New York state who is noted for the number and quality of her annual crop of turkeys, feeds as follows:

When the poults are twenty-four hours old each one is given a good-sized pill made from equal parts of mashed potatoes, bread crumbs and black pepper mixed with sour milk. Two hours later they receive curds made from sour milk. The curds are supplied five to six times daily for three or four days. Then an occasional meal of mashed potatoes and bread crumbs is given, but the curds still form the major part of the daily bill of fare. Gradually a little chick feed is added, and at six weeks of age they are eating con-



WHITE HOLLANDS

siderable hard grain. This is increased in quantity, but the curds are supplied during the entire growing period.

After the poults are well feathered there is little to be feared, and they should be permitted to range at will. Of course they should be fed regularly, especially at night, so they will be sure to return to the farm buildings and not wander away. As the best market is usually at Thanksgiving it is good policy to push their growth so they may be in condition to kill at that time. The thin and undeveloped individuals may be retained until Christmas or New Year's, thus giving them an additional month in which to lay on flesh. Directions for dressing turkeys will be found in the chapter dealing with the marketing of poultry products.

Since good stock is the foundation of success in turkey growing, as in other branches of poultry husbandry, the very finest of the year's crop of youngsters should be reserved for breeding purposes. Select those specimens that make the most rapid growth and show the greatest amount of constitutional vigor. Too often the best are sold at Thanksgiving and the small specimens, those which are worth the least on the market, are held over for another year and used in the breeding flock. This plan brings in the most ready money, but the policy is suicidal in the long run, as these birds will surely reproduce their kind and the flock will rapidly deteriorate in size, productiveness and the ability to return the largest profits. *Keep your best birds and breed from them!* It pays big.

Adult turkeys are subject to comparatively few diseases, but there is one which is peculiar to them and causes great havoc when it once gains a foothold in the flock. This disease is commonly called

"black head," and it has nearly ruined the turkey growing industry in certain sections where these birds were formerly bred in vast numbers.

The exact cause of the disorder is still in doubt, but it is undoubtedly a microscopic organism that is frequently found in birds of all kinds. There is no known remedy, and in view of the present knowledge of the disease the best advice seems to be to dispose of the entire flock in which it appears, making a fresh start with stock bought

A FLOCK OF WHITE HOLLANDS
Turkey growing is a good industry for women on large general farms.

from uninfected territory. It is also the part of wisdom to keep the turkeys from mingling with other kinds of domestic poultry, so far as this can be prevented.

Black head attacks both old and young turkeys, being especially fatal to the latter. It produces no marked external symptoms until the advanced stage is reached. The victim then loses its appetite, keeps apart from the rest of the flock and is inclined to sit with drooping wings. The head and comb turn dark and diarrhea develops.

If the presence of the disease is suspected a post-mortem examination should be made. In typical cases the liver will be found marked with distinct whitish or yellowish spots. The organ is usually much enlarged also. The ceca are generally inflamed and plugged with pus and fecal matter.

This disease is so obscure, so difficult to handle, that profitable turkey production is most difficult on farms where it has become well established. However, there is a strong probability that the results of the scientific work now under way at our experiment stations will be of such a character as to enable us to control this trouble as we now do the more common poultry diseases.

JAPANESE BANTAM
The children's joy. One of the most attractive varieties of the bantam race.

WHERE DAIRYING AND POULTRY RAISING ARE SPECIALTIES

This large farm specializes in these two branches. Most of the feed for cows and hens is produced on the place.

THE LARGE LAYING HOUSE ON THE FARM SHOWN ABOVE

Advantage has been taken of the slope of the land to make one portion two stories high. This building has a central alley with pens on the north and south sides, which is faulty. The manager reports 25% less egg yield in north pens.

CHAPTER XI

WATER FOWL

AFRICAN AND EMBDEN GEESE

Ducks and geese might well be given a place on every farm and poultry plant, if for no other reason than to produce a few good roasts for the family table. As table delicacies, water fowl have long been held in high regard and they are grown in large numbers in all parts of the world. In China, especially, duck breeding has been carried on for centuries, and the goose was a sacred bird in Egypt fully four thousand years ago. It is most interesting to note that though this bird has been bred in domestication for such a long period it has been modified but little as regards external characteristics, and the goose of to-day is practically the same bird that was so highly valued by the ancients.

Wild ducks of unnumbered breeds are found in all parts of the world, and these display a wonderful variation in size, color and markings. The plumage of certain kinds is exquisite, in many cases having a wonderful brilliancy that cannot be described, but which commands instant admiration when seen.

To our list of domesticated ducks Europe, Asia and America have made contributions. The present interest in the breeding of wild varieties bids fair to add several to the list of those now domesticated. Some of the wild kinds are particularly attractive because of their wonderful plumage, and these will naturally appeal to the fancier.

IDEAL CONDITIONS FOR BREEDING STOCK

Others have a distinct value for table purposes, and because of this they will undoubtedly appeal to the commercial poultry grower.

The American Poultry Association recognizes as pure bred ten distinct breeds of ducks, and two of these are bred in two varieties. The most popular are those which, because of their size, are useful as table poultry. The widely bred table kinds are the Pekin, the Aylesbury, the Rouen and the Muscovy. The Indian Runner is a great egg producer and is frequently kept for this purpose. It might be added that English breeders recognize other birds, some of which possess considerable merit.

The adult Pekin drake weighs eight pounds and the duck seven pounds. The plumage is pure white, the legs and bill yellow.

This is undoubtedly the finest breed for market use, meeting the market demand in color and size. Since the sexes are about of a weight the youngsters can all be marketed at one time, which is a big advantage when the business is conducted on a large scale.

The Aylesbury is the favorite English duck, but does not equal the Pekin, which it resembles, in popular esteem in this country. The plumage is white, but the legs and feet are paler

GOOD FOR A LITTLE "PIN MONEY"

than we demand. The weights of both sexes exceed the Pekins by one pound.

The Rouen has long been widely bred in small flocks, and ducks of this characteristic color and marking are met with on farms in all sections of the country. This breed has the same weights as the Aylesbury, and by many is preferred for table use. It is said to be the favorite duck of France, where some of the world's finest table poultry is produced.

The Rouen is undoubtedly a direct descendant of the wild Mallard, which it still closely resembles. Its color, a combination of brown,

DUCK HOUSE

Simple, inexpensive structures are entirely satisfactory for these hardy birds.

gray and green, prevents it from taking a leading place among market ducks.

The Muscovy duck is a native of South America. The drakes are unusually large in size, weighing ten pounds, but the ducks are comparatively small, the desired weight being but seven pounds. This breed is represented by two varieties, the colored and the white, the latter being quite rare.

Possessing the valuable qualities of hardiness and the ability to make rapid growth, and at the same time about the best body lines of any of the large ducks, this breed would be popular with market growers were it not for some serious faults.

In the first place the adult birds can fly like hawks, and it is difficult to keep them confined. The difference in the size of the sexes results in an uneven lot of ducklings, and finally their flaming red faces covered with small bunches like warts, make them repulsive to some people. However, there is no better duck for the production of meat for the home table.

Duck breeding is one of the few branches of poultry culture that can be profitably conducted on a very large scale. There seems to be no limit in the size to which duck farms can be developed. There are many farms that have an annual output of from ten thousand to forty thousand ducklings, and in at least one instance the yearly crop approximates seventy-five thousand. The reasons which underlie the continuous success of large duck farms are probably the hardiness of the adult birds, their ability to do well on ground that has been continuously used for this line of work, and the comparative ease with which the ducklings may be hatched and reared by artificial methods.

There seems to be but little profit in commercially growing ducks in small numbers, unless the producer has a private trade. The large growers are able to practise many economies in the matter of feed, labor, labor-saving devices, and in dressing and marketing that are not possible to the small producers. However, the small flock is a

PEKINS ON LAND RANGE

valuable asset to the farm since ducks at liberty require but little care and the ducklings and eggs are particularly good eating.

Instead of attempting to discuss in the limited space of this chapter the various methods of duck growers, we will content ourselves with carefully describing exactly how one successful man houses, feeds and manages his birds.

THE STOLEN NEST

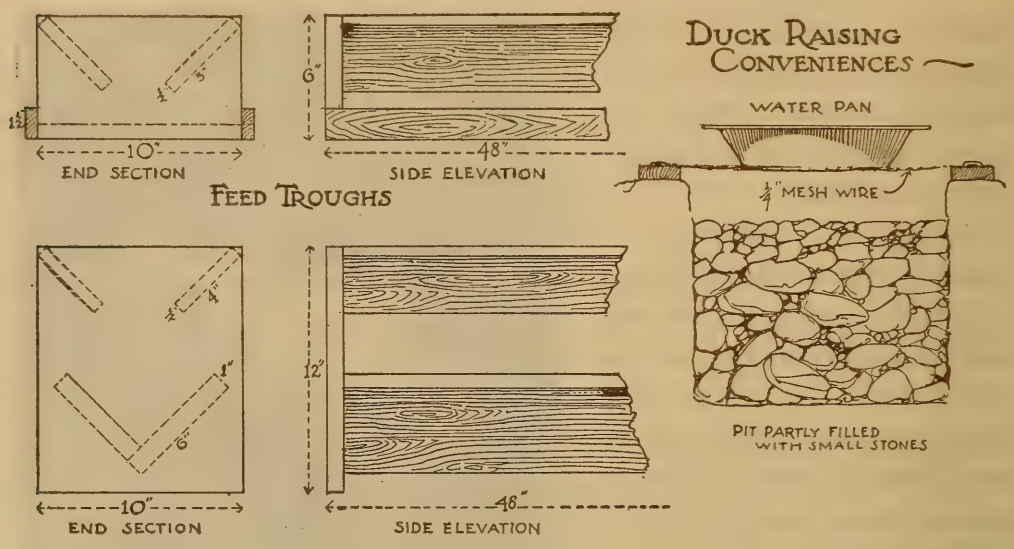
The exclusive duck farm should be located within easy reach of a large city market, and close to a station affording good transportation facilities. Any point within two hundred miles of the market will serve the purpose, though the closer the better.

There should be a sufficient area of land to afford free range for breeders at certain seasons of the year and to permit the growing of crops for green food. The most suitable soil is that which is open and well drained, as ducks soon make filthy the surface of heavy soil. A good sized stream or pond is very desirable, though not absolutely required. However, the breeding birds thrive better and produce stronger young when allowed access to a large swimming place.

Ducks do not seem to require much shelter, even in the most severe weather. Frequently they refuse to use buildings provided for them and remain out under the open sky throughout the year. This is not conducive to early egg production, and as the earliest ducklings bring the best prices commercial duck growers keep their breeding stock in storm-proof shelters.

A small flock may be left to seek such shelter as they require about the farm buildings, or may be provided with a cheap colony house.

On large duck farms the breeding houses are usually fifteen to eighteen feet wide, as long as required, and divided into suitable pens.



Almost any form of building will serve the purpose, provided it furnishes, during the winter, dry, well-ventilated quarters, free from draughts, and is not excessively hot during the summer season. During the warm weather ducks confined in yards naturally retire to the house during the daytime, seeking the shelter from the sun that those at liberty find beneath the trees. An alley along the rear wall may be provided, or a board walk running along the tops of the partitions if preferred.

On the farm referred to the pens are twelve by sixteen feet in size, the dividing partitions being two feet high. In the south side of each pen is a large window and a door to permit the birds to pass in and out. The yards are made as large as possible, and run down to a stream. Each one encloses a good amount of swimming space. The fencing on the land is but two feet high and no gates are provided as the attendant can step over the fences when it is necessary to enter the yards. The duck house furnishings are simple. The stream supplies the drinking water, so no water dishes are required. The feed troughs are of the common V-shape, long enough to permit the flock to feed without crowding. A grit box and nests complete the equipment. The nests are soap boxes with the fronts cut down to four inches in height, set along the partitions. The ducks do not always use these, many eggs being dropped on the floor of the pen. However, it pays to provide the nests as they are an aid in keeping the eggs clean. The floor of the pen is kept deeply covered with dry litter, preferably straw or planer shavings. This is added a

little every day, thus keeping the surface clean and dry. This litter is removed whenever necessary.

Pekin ducks are used, exclusively, and thirty are placed in each pen at the rate of one drake to five ducks. In late spring two of the drakes are removed and sold, leaving three with the pen of twenty-five ducks. The drake is distinguished by the curled tail feathers, and also by his lighter voice.

YARDS ADJOINING DUCK BROODER HOUSE
Note low fences, feed boards, continuous water trough, and brush shelter.

The breeding ducks are selected from the May hatches each year, none but the strongest and finest being reserved. They are picked out when six weeks of age and are at once turned out on a grassy range with a large swimming pool.

The best of the old ducks are reserved until they reach the age of three years.

In the late fall these prospective breeders are again culled and transferred to the laying houses where they are fed sparingly to prevent too early laying. Fall eggs are not desired.

A WINTER SWIM
Pekins and Colored Muscovys in a hole in the ice.

On many farms the regular ration consists of corn meal, wheat bran, beef scrap and green food in varying quantities. In this particular instance a better ration is used which may in a measure account for the superior results secured.

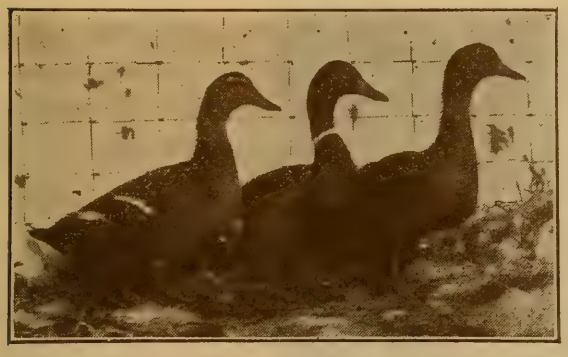
The ration for fall feeding is made up as follows, by measure:

1½ parts corn meal.
1½ parts ground oats.
1½ parts ground barley.
1½ parts wheat bran.
1 part beef scrap.
½ part sharp sand.
2½ parts green stuff.

This is moistened and fed twice daily. The feeding is not heavy at this time, a little less than the ducks would eat if given all they wanted.

Early in December the feed is changed, both in make-up and amount. The increase in quantity is made gradually until the birds are receiving all they will eat morning and evening. The laying ration is mixed by measure, and contains the following:

2 parts corn meal.
2 parts ground oats or barley.
1 part wheat bran.
2½ parts beef scrap.
½ part sharp sand.
2 parts cut green stuff.



ROUEN DUCKS

At noon a light feeding of dry grains is given, consisting of 1 part oats, 1 part wheat, 2 parts cracked corn. Coarse sand and crushed oyster shells are kept in the grit boxes at all times.

By the first of January the eggs begin to come, in small numbers at first, but in a perfect torrent later. The ducks lay early in the morning, between five and seven o'clock, and they are kept confined in the pens until after the latter hour. The eggs are picked up promptly and stored where they cannot be chilled. In hot weather they are gathered early also and removed to a cool place.

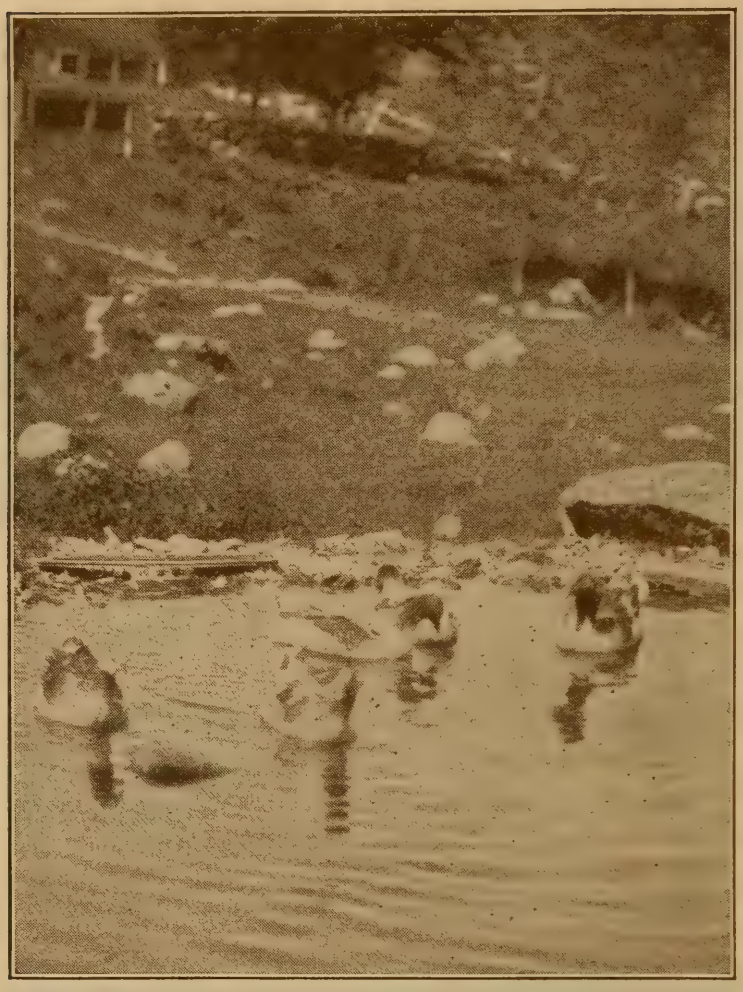
Egg production continues until midsummer, and an average output of one hundred eggs per duck is not unusual.

The eggs may be hatched under hens, or in incubators. Of course the latter system is used where many ducklings are produced. Ducks on range often steal their nests and hatch and rear their own young. It is best to set the eggs while they are still fresh, but under proper conditions they may be held for two or three weeks. Dirty eggs may be wiped off with a damp cloth, but never scrubbed.

The incubator should be operated in accordance with the special directions furnished by each manufacturer.

Pekin duck eggs hatch in twenty-eight days, while those from the Muscovy require incubation a week longer.

INDIAN RUNNER DUCKS
Famous as egg producers.



TOULOUSE GEESE
The rough, rocky land here shown is excellent for goose growing, especially if streams or ponds are available.

Hens will brood and care for ducklings, but the small lamp brooders or hot water pipe systems are the reliance of the duck farmer. On the farm under discussion the pipe system is used.

The ducklings are left in the incubators until they are thirty-six to forty-eight hours of age, when they are transferred to the brooder pens. As each one is dropped into the brooder its bill is dipped into the water so that it will learn how to drink.

The hover temperature is regulated at ninety degrees at a point three inches above the floor, and it is held here for three days. On the fourth day the temperature is reduced five degrees, and then gradually lowered to seventy degrees at the end of ten days.

The brooder house pens are littered with cut straw and are kept clean and sanitary. Before each new hatch is placed in the brooder, the floor, walls and pipes are thoroughly sprayed with a good disinfectant. This reduces the loss from diseases that appear in unsanitary quarters.

Ducklings are much hardier than chickens and may, in moderate weather, be transferred to cold quarters after they reach the age of three to four weeks. Abundant shade and comfortable quarters must be provided, however.

When the ducklings are first placed in the brooder, dishes of water and feed are set on a board close to the hover. The little chaps will soon come out and help themselves, but frequently do not know enough to return to the hover. They must be watched for a time and gently pushed back after feeding, until they learn the ropes.

During the first week they are fed every two hours, then four times daily for five weeks. Thereafter the meals are given three times per day.

WHITE CHINESE GEESE

For three days the feed consists of three parts bread crumbs and one part boiled eggs. Infertile eggs from the incubators are used for this purpose. On the fourth day a little corn meal and five per cent sharp sand are added. The next day the corn meal is increased and a small amount of wheat

AFRICAN GEESE

bran is worked in. The eggs and bread are gradually dropped and the grain increased so that at the end of the first week the little fellows are receiving the regular growing ration, which is mixed by measure as follows:

1 part corn meal.
1 part oat or barley meal.
2 parts wheat bran.
7/10 part beef scrap.
3/10 part sharp sand.
2 parts green food.
Slightly salted.

The green food is absolutely essential. Any vegetables, grass or growing grain will do. In case of need cut clover hay may be substituted.

After the ducklings are six weeks of age they are fed the fattening ration. This contains:

5 parts corn meal.
2½ parts wheat bran.
1½ parts beef scrap.
1 part green food.
and a small amount of sand.

This is continued until the time for killing arrives.

A regular supply of fresh water must be given. Any good fountain of large capacity will answer for ducks, but many breeders prefer to use open pans. Much of the sloppiness usually observed near the water dishes may be prevented by digging a hole two feet deep, filling same with small stones, placing a frame covered with quarter-inch mesh wire over the top, and setting the water pan on this. Any that is spilled will run off between the stones and be absorbed into the earth.

The common V-shaped feeding troughs in suitable sizes will serve the purpose fairly well, but they permit the ducklings to waste much feed by walking on and soiling it. The protected troughs illustrated are a big improvement over the old form.

Pekin ducklings are dressed when from nine to ten weeks of age. Refer to the chapter on Marketing for directions.

Ducks of all ages are timid and may easily be stampeded, piling up into the corners of the building and killing or injuring many. They must be protected against sudden frights.

The most troublesome disorders are diarrhea, catarrh, convulsions, leg weakness and apoplexy.

Diarrhea is due to over heating in the brooders, filthy food or water. Correct the conditions that cause it.

EMBDEN GOOSE AND GOSLINGS
Movable yard made of boards.

Catarrh is manifested by a watery discharge from eyes and nostrils. It is due to sudden changes in temperature and is especially troublesome during the warm weather of spring and early summer. Disinfect the quarters and food and water dishes and prevent overheating.

When ducklings are permitted to get thirsty, then drink greedily and go out into the sun, many of them will die in convulsions. Use the proper precautions and no trouble will be experienced.

Leg weakness usually follows over-heating in the brooders. Keep the temperature regulated properly.

Over-feeding frequently brings on apoplexy, indicated by a staggering gait, failure of eye sight, gas in the crop, small appetite and thirst. Make the mash more bulky by adding green food and bran.

The growing of geese is seldom, if ever, made an exclusive business. Most of the market stock is picked up by dealers from the small flocks found on general farms. These are either dressed or sold to professional fatteners who put them in fine condition before killing. The best market geese come from these fattening establishments, of which there are many. Some of the fatteners handle thousands of birds each season.

Geese, like turkeys, do best on large ranges. They are grazing fowl, and will make tender grass a large part of their ration if given an opportunity to range over good pasture land. Like ducks, they will thrive even if denied a swimming pool, but they do better if a pond or stream is available for their use.

In many cases geese are permitted to roam at will over the farm. Some growers limit their activities by erecting a low fence about some suitable field and confining the birds within this enclosure. Rough, swampy land, with a fair proportion of dry areas, serves the purpose beautifully.

Geese seldom seek the shelter of buildings, but most growers provide dry sheds to which the birds may retire in extreme weather and during long continued storms. It is well to supply protected nests, and for this purpose barrels are generally used. These are covered with heavy roofing paper to keep out the rain, and are laid on their sides, so braced as to prevent moving. Cut straw or hay makes the foundation of the nest, which the laying goose completes with feathers plucked from her own body.

The adult stock thrives on a simple ration. Where the pasturage is ample the birds do not require heavy grain feeding. Some growers feed whole and cracked grains only, others supply a mash occasionally. A very satisfactory plan is to give one feed of mash and one of grain each day. Animal food in some form is necessary, also green food in the absence of good pasturage. Oyster shells and grit should be kept before the birds all the time.

Geese normally begin laying very early in the spring, and the first eggs are especially valuable as the early goslings bring the greatest

returns. However, in practice it is not wise to hatch the goslings until fresh grass is available for them.

The generally accepted plan is to collect the eggs daily, leaving one or more nest eggs in the nest. The first litter of eggs, and frequently the second, are hatched under hens, though these do not ordinarily make good mothers for the goslings. Fortunately the latter are easy to rear and may be grown in any good brooder. The goose is permitted to incubate her second or third clutch of eggs, and these goslings are safe in her care. In any event the youngsters should be kept confined in rather limited yards until they have gained strength and a little sense. In warm spring weather they may be removed from the brooder, if one is used, and placed in a cold coop when two to three weeks of age.

The goslings require plenty of water, sharp sand and crushed oyster shells from the very start. They delight to pick at rotten wood, and careful growers keep them supplied with this material.

In addition to plenty of fresh green food, preferably grass, the goslings should be fed regularly in order to induce rapid growth. Stale bread mixed with eggs, any good chicken or duck mash, and cracked corn, scalded at first, will serve. Baked Johnny cake, made of one part corn meal, one part ground oats and two parts bran, is a favorite food. This should be crumbled before feeding. The addition of a small amount of bone meal helps in the building of big frames.

The fattening period arrives when the main wing feathers reach the base of the tail, and continues for about three weeks. During this period a heavy mash, composed largely of corn meal and carrying ten per cent of beef scrap, is fed liberally. At night a full meal of whole corn is given.

Green geese, as the youngsters are called, are in demand all through the summer resort season, and also at Thanksgiving and the Christmas holidays. They are killed and dressed in the same manner as ducks.

Fortunately goslings are subject to few disorders and such as they have are similar to the duck ailments previously discussed.

Geese frequently live to an advanced age and those that prove to be reliable breeders should be retained. Good geese lay from thirty to fifty eggs per year.

Sometimes they are mated in pairs, but the usual custom is to allow each gander two or three geese. Frequently four to six geese are kept together and two ganders used, alternating them every day or two.

The breeds most commonly used by market growers are as follows:

The Toulouse, an attractive gray goose, weighing from fifteen to twenty, and occasionally twenty-five pounds.

The Embden, white in color, ranging in weight from sixteen to twenty pounds.

The African, with mixed plumage of gray, black and brown, weighing from fourteen to twenty pounds.

The Chinese, white or brown according to variety, from eight to twelve pounds weight.

The Wild, or Canada, goose weighs about the same as the Chinese and is largely gray in color. This breed is sometimes bred pure, but is more commonly used for crossing on the common domestic breeds, thereby improving the flavor of the resulting goslings.

DUCK BROODER HOUSE

Breeding pens on both sides of a central alleyway. Rooms for the attendant on second floor of feed house in center.

CHAPTER XII

SQUAB GROWING

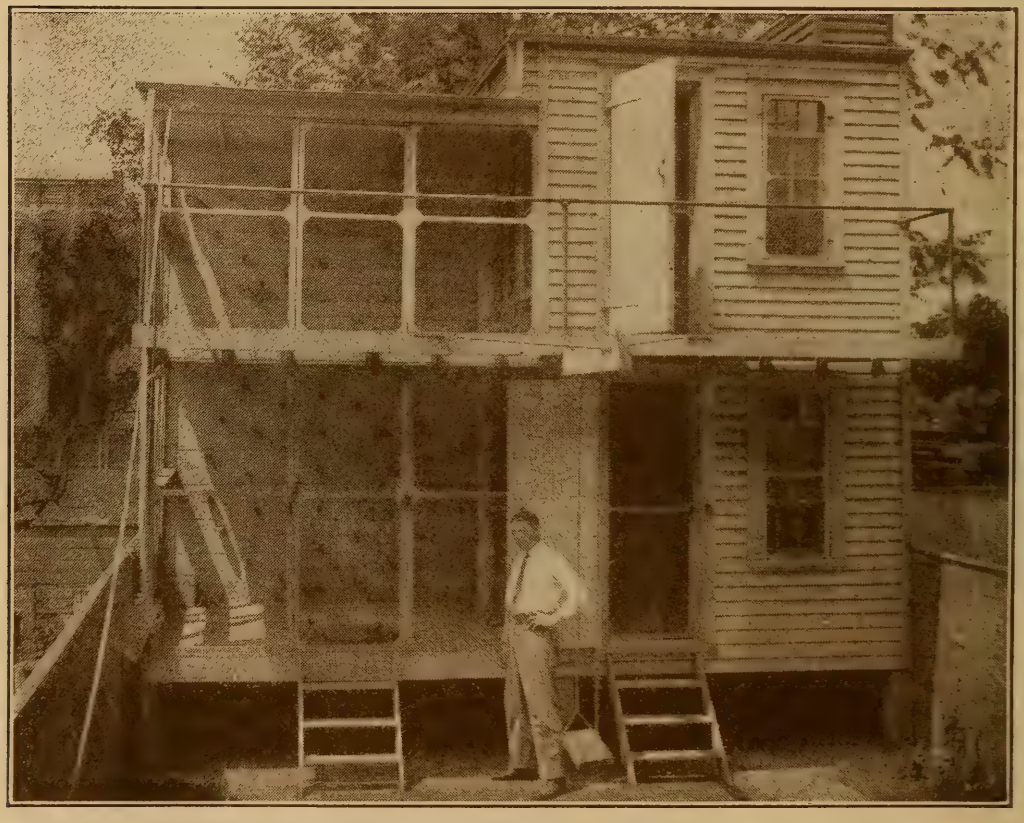
BREEDING HOMERS

The breeding of fancy pigeons is a most interesting hobby, and ardent pigeon fanciers are found in all parts of the world. Untold generations of boys have taken pride in a few pairs of "doves" acquired in one way or another, and in many cases they have continued to breed the dainty feathered beauties for a lifetime. Scientists have secured most satisfactory material in the pigeon cote; business and professional men have found these birds a source of interest and amusement; working men have maintained small flocks as a source of recreation. In fact, all classes of people are attracted by these beautiful pets and for various reasons have found them to be truly "worth while." The ease with which they may be cared for, the slight expense of securing the birds and providing quarters for them, the wide range of shape and color in which they are bred, are all good and sufficient reasons for their great popularity as pets.

The earliest recorded instance of man making use of pigeons in a practical way seems to be found in that portion of Holy Writ which refers to the great flood. Noah took advantage of the pigeon's homing instinct and sent one out of the ark to determine whether or not the waters were receding. Since that day, and possibly before, pigeons have found favor with man.

Just what kind of pigeon the wise Noah used is a question that will of necessity remain unanswered, but it is certain that our domestic breeds and varieties, of which between one hundred and two hundred breed true, are descended from a common origin, the wild Blue Rock Dove. Of this there are several types found in different parts of the world; it is probable that they were early domesticated, and that the mixture of the blood from these various sources made possible the production of so many distinct kinds. Certainly when we consider the great range in shape, size, color and characteristics, it is difficult to believe that all came from a single variety of the wild stock.

But while there is much pleasure in the breeding of strictly fancy or exhibition pigeons, very few men are able to make much of a financial profit from this line of work. There are very few breeders who make this their sole occupation and a means of livelihood. True, there are many who find it a profitable sideline to which they devote their spare time, but as an exclusive business there seems to be "little in it."



A CITY LOT PIGEON PLANT

Neat, attractive, practical, affording quarters for a good sized flock. Upper floor reached by inside ladder built in corner by the door.

CARNEAUX SQUABS
Fully grown, ready to be dressed for market.

There is a branch of pigeon breeding, however, that is attracting considerable attention and which has business possibilities for the person possessing the required personal characteristics and located in the right section of the country; the production of market squabs.

Squabs—as immature young pigeons are called—are one of the most delicious products of the poultry farm. The demand for them is steadily increasing and the price has risen steadily in common with that of other special poultry products.

The reason for this is plain. Our consuming population is rapidly growing, and, in addition, table luxuries are more commonly used and are constantly demanded. In comparatively recent years the public markets commonly carried great quantities of game birds of various kinds. Wild ducks, partridge, woodcock, prairie chickens, quail and wild pigeons were abundant, and were widely hunted for market. Selling readily at fair prices and costing nothing to produce, they were systematically preyed upon by professional pot-hunters, as well as by sportsmen. Many farm boys made a fair amount of pocket money from this source, in addition to contributing the material for many pot-pies for the home table.

Naturally the slaughter was appalling and game birds rapidly decreased in number.

The settling of the country, which decreased the natural covers, also had its effect, and bird-lovers and sportsmen soon awoke to the

fact that the game birds must be protected or they would be exterminated. Gradually stringent game laws were enacted, and this movement spread until practically every section of the country fell into line. In a great many cases, especially in the East, these laws are so stringent as to prevent the sale of most game birds, and they are no longer commonly found in the markets.

Under protection of this kind certain birds seem to be increasing in number, but it is not at all probable that we will ever again see the time when they will be marketed in any great numbers. This opens up a special field for the poultryman, as clubs, hotels and restaurants must have something to take the place of the game that formerly was found on every bill-of-fare. This call must now be met with lightweight broilers, green ducks, guinea chicks and squabs. Each of these specialties may be produced at a profit under existing conditions, as has been clearly demonstrated by progressive poultrymen during the past ten years.

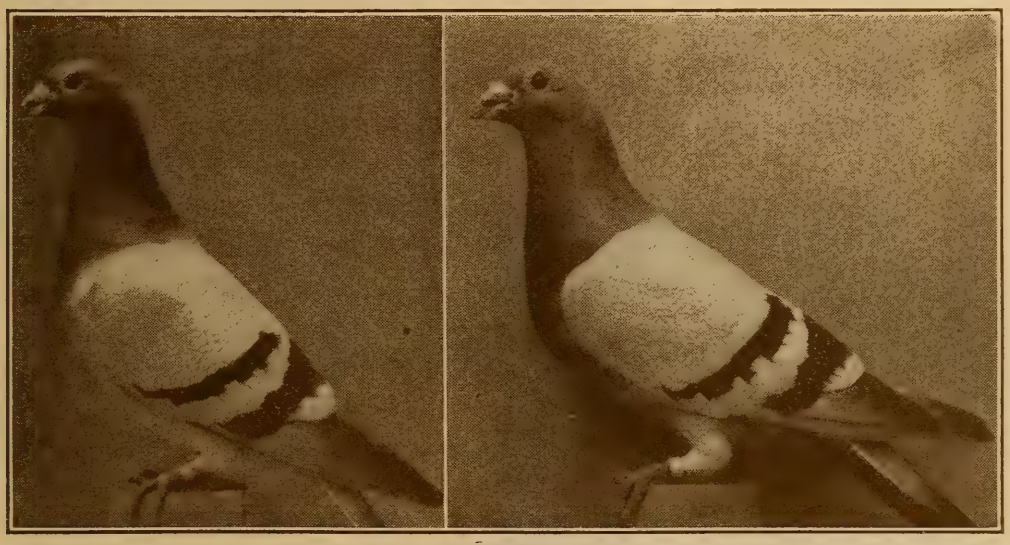
However it must not be thought that everyone can make a big profit from these lines, as this is far from the truth. Within the past few years there have been "booms" in both duck and squab raising, and many people have embarked in them and experienced costly failures. But a certain proportion have succeeded and are today making nice incomes from these lines. The failures may, therefore, be considered due to lack of experience, poor location, or some other vital factor that was ignored when the business was established.

Squab raising possesses certain very definite advantages as compared with other branches of poultry keeping or animal husbandry. It may be conducted as an exclusive business, combined with other lines of poultry farming, or operated as a side-line to furnish the home table with a regular supply of delicious and nutritious meat.

Possibly the very best advice that may be given the interested beginner is that which applies to all branches of poultry husbandry. Start on a small scale and develop the business as experience is gained and results warrant. Such a plan involves but a small initial investment and prevents heavy loss if events demonstrate that the individual is not fitted for the work.

Perhaps the greatest advantage enjoyed by the squab raiser lies in the fact that all the work of hatching, brooding and feeding the youngsters is performed by the parent birds. The experienced poul-

tryman will tell you that the most exacting and trying portion of his yearly duties is the raising of the season's crop of chicks, work that requires almost hourly attention on his part. Many persons whose business calls them away from home the greater part of the day and who have no one in the family to look after things during their absence are for this reason prevented from attempting to rear chicks. But such can keep pigeons and reach a reasonable degree of success by devoting some time morning and evening to the care of their birds. There are many men, and some women, employed during the day who in this way secure much pleasure and some profit from their pigeons.



BLUE BARRED HOMERS

A favorite variety among squab growers. The sexes are much alike, but the female is usually "trimmer" than the male. In the above illustration the hen is at the reader's left.

Another big advantage lies in the fact that the squab raiser needs but a small amount of land, and quite a start may be made with a comparatively limited amount of capital. The breeding pigeons are never allowed their liberty, but on the contrary are kept confined in the house and adjoining flight or exercising pen. The large amount of land that the chicken raiser requires for his breeding stock and growing youngsters is not, therefore, necessary for this particular line.

Vigorous pigeons make very good breeders until they reach the age of six to eight years, and this does away with the necessity of renewing the breeding stock every year or two, which is the most vexing problem of the grower.

Finally, there is no necessity for providing incubators, brooders and special houses, yards and range for the growing squabs. They are hatched and brooded by the parent birds and remain peacefully in the nest until they reach market age. Poultrymen know that a large part of the investment for chicken raising equipment must be used to secure the special apparatus and buildings which are devoted to the hatching and rearing of the youngsters.

But while these good features exist, it must not be thought that squab raising on a commercial scale possesses no disadvantages, because this is far from the truth. It is a business of endless detail and requires very special knowledge and experience on the part of the manager. Disease may cause trouble, poor breeders may reduce the profits.

But what is probably the worst feature in localities where a local market does not exist is the fact that the flock must be large enough to insure a sufficient number of squabs each week to make good sized shipments possible. The squabs must be dressed when they reach the proper size; they cannot be held until enough accumulate to make a lot which may be shipped economically, neither can they be kept until market conditions improve. This is one of the big problems which the owner of a small or medium sized flock must constantly face.

It is exceedingly difficult to estimate the net income of successful squab plants, and little specific information on this point is available. Claims are made that the profits run from $1 to $3 per pair of breeders. It is clearly evident that everything depends upon the skill of the man behind the birds.

We know of one establishment that has been operated many years, the owner of which states that his profits have approximated $5000 per year for some time. This business was started by the present proprietor, a mechanic, with an initial investment of $1000, and the additional capital has been drawn entirely from the profits.

Interest in squab raising has been steadily increasing during recent years, and many breeds of pigeons which possess the desirable characteristics have been brought forward. Some have proved themselves worthy of a place in the breeding pen; others have failed to make good. Doubtless new kinds made by crossing the existing breeds will be introduced from time to time, but the commercial

producer will do well to stick to the breeds of demonstrated value until the new claimants have proven their worth.

The ideal squab breeding pigeon produces white-skinned squabs which weigh eight pounds or over per dozen and which reach market maturity in the shortest possible time. In addition they should be hardy, active and vigorous, persistent breeders and good feeders. These characteristics are more prominent in certain breeds than in others, but after all selection is based on individual performance. In all recognized squab breeds there are birds which combine all of these good qualities, and these qualities may be preserved and intensified by intelligent breeding. The offspring of such breeders should be preserved to stock additional pens and the flock built up in this manner.

Of course the largest squabs are most in demand and bring the highest prices, but it often happens that these are not as profitable as smaller squabs which are produced in greater quantities. It often happens that birds which produce the very heaviest youngsters do not breed freely enough to insure satisfactory returns.

At present there are two breeds contending for first honors in the squab producing field. These are the Homer and the Carneau (plural Carneaux), the latter being a comparatively recent introduction into America.

The Homer is more generally bred than any other breed, and it deserves its popularity. It possesses in a large degree the desirable characteristics already specified, and Homer squabs are plump and heavy, and come to market size in about four weeks. Further, the eggs are unusually well fertilized and by far the greater portion of them hatch.

BLUE CHECKED HOMERS

This breed comes in a wide range of color, including blue, blue checked, red, red checked, black checked, white, silver, etc. It might be added that the color of the plumage does not affect the skin color of the squab. Some poor and dark squabs will come from any variety, and this difficulty must be overcome by selection of the breeders.

Because Homers are so widely bred it is possible to secure good foundation stock of this breed at lower prices than are commonly charged for breeds that have not yet become generally distributed.

The Carneau is somewhat larger than the Homer and produces very fancy squabs. Carneaux are usually deep red, splashed with white, though individuals, with solid red, solid yellow, or yellow splashed plumage are found.

A cross of the two above breeds makes fine breeding stock. The accepted cross is a Carneau cock and a red checked Homer hen.

The largest pigeon is the Runt, though this breed is seldom found on squab farms. The young Runts are too slow in reaching the size for killing, and many of them are dark skinned. Sometimes a slight infusion of Runt blood in other breeds is used to increase the size.

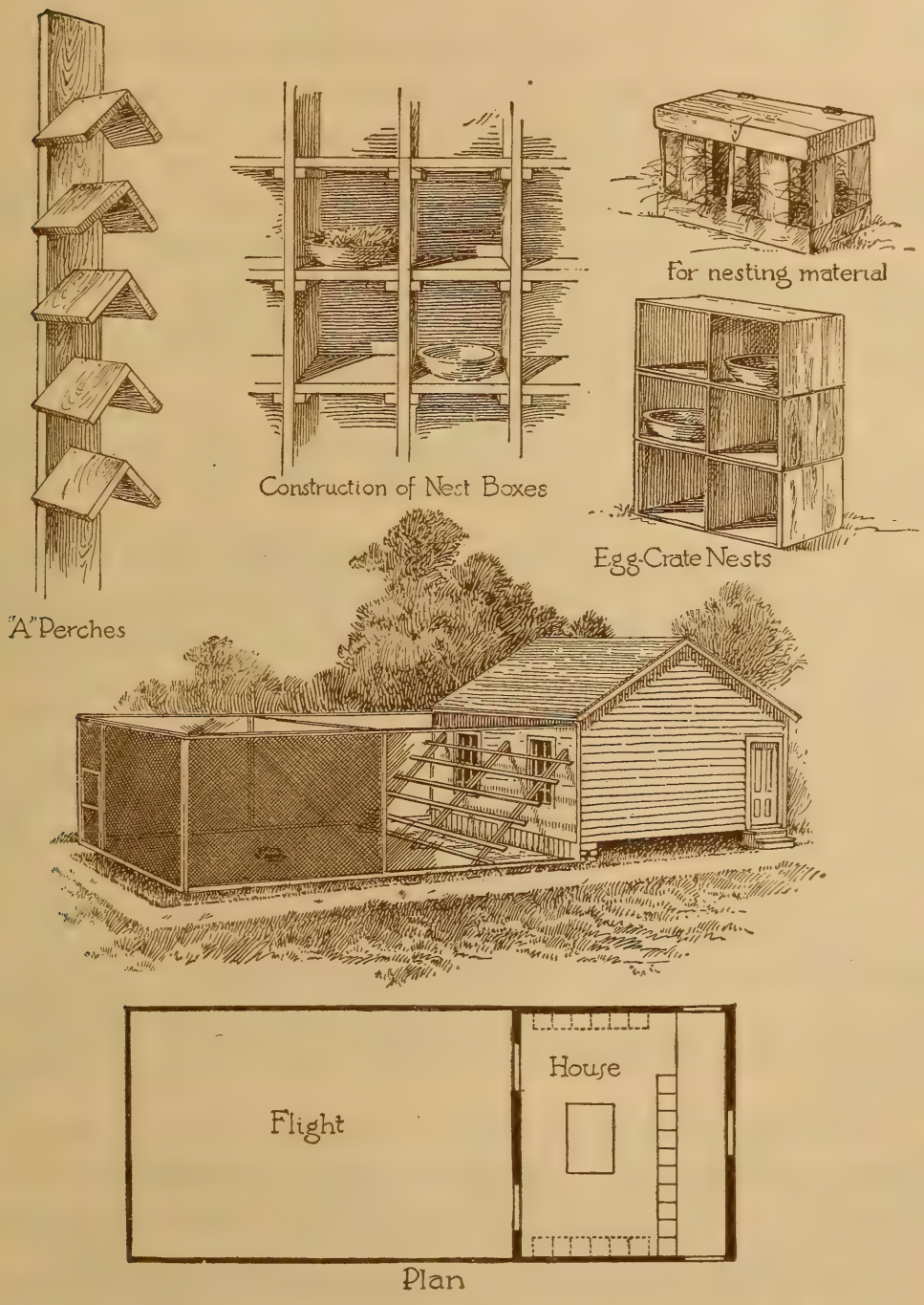
In certain sections, notably in New Jersey, the Duchesse is a favorite. It possesses no advantage over the sturdy Homer, while it has the disadvantage of feathered legs.

Another very good pigeon is the Dragoon, which is a large, close-feathered bird with many good qualities. Its squabs are somewhat slower to develop than Homer squabs. However it makes a very good bird for crossing purposes.

The Swiss Mondaine is a large, clumsy pigeon, but has an immense breast development. Like the Dragoon its chief value is for crossing.

Remember always that the value of a breeding pigeon is determined by individual performance. Bearing this in mind the question of breed resolves itself into the following: Use Homers, Carneaux, Duchesse or Dragoons, pure or possibly crossed, or with a slight addition of Runt or Mondaine blood.

Get good stock to start with. Purchase well developed, mated pairs, either locally or from a reliable dealer who will stand back of his goods. Then build up your flock with the offspring of your best breeders.



UNIT SQUAB HOUSE, FLIGHT, AND FURNISHINGS

This type of house is very satisfactory. Each unit is complete in itself, and additional units may be added as needed.

Quarters for a small flock may usually be provided in some existing building. As the business grows special houses should be erected. But regardless of the character of the breeding pen, it should always be dry, free from draughts, light, sunny and free from all kinds of vermin. Allow the birds as much house room as possible, though they will do fairly well even when somewhat crowded. Not more than fifty pairs should be kept in a single flock, and a room ten feet square and eight feet high will accommodate this number.

The unit squab house is the type most favored by Mr. E. E. Rice. The illustration shows one pen or unit. The building may be extended as occasion requires by merely adding more units to the east or west ends of the original structure.

This building is twelve feet wide, sixteen feet deep, seven feet to the plates and twelve feet to the ridge. The roof is even span sloping north and south.

The entire frame is covered with inch boards, then building paper and shingles. If preferred, a good prepared roofing may be substituted for the paper and shingles, thus reducing the cost of construction.

The floor is made of two thicknesses of boards and is elevated two feet above the ground.

Two double-sash windows are set in the front or south wall of each pen, and a small window in the north side to light the passageway.

An alleyway three feet wide extends along the north side of the building, in which much of the regular work is done without disturbing the birds. Water fountains and grain feeders are frequently placed on the floor of the alleyway, next to suitable openings in the partition. These appliances may be set on the floor of the pen if preferred.

An enclosed flight is an absolute necessity. Pigeons kept in confinement breed better and are protected against shooters and other enemies, also from vermin and disease which might be introduced by stray pigeons.

From end to end the flying pen is twenty feet in length. It has the same width as the pen. Next to the house is placed a series of roosts on slanting supports. The floor of the flight should be of clean sand or earth, renewed occasionally as it gives indication of becoming filthy.

The furnishings of this house will serve for any pigeon pen. The more important things are shown in the drawing.

Nest boxes, two for each pair of breeders, may be empty egg cases piled one above the other, or specially constructed, similar to pigeon holes in a desk. A good size is a foot square, but ten by eleven inches will do. In the boxes place nest bowls, or nappiers, purchased from any dealer in pigeon supplies.

Drinking water may be supplied in any of the accepted poultry fountains that keep it fresh and free from contamination.

Water must also be provided for bathing purposes. Any large pan will serve for the bath tub, provided it is not too deep. Galvanized iron pans such as are commonly used to catch the drip under refrigerators will do nicely, but they should be filled only to a depth of three inches.

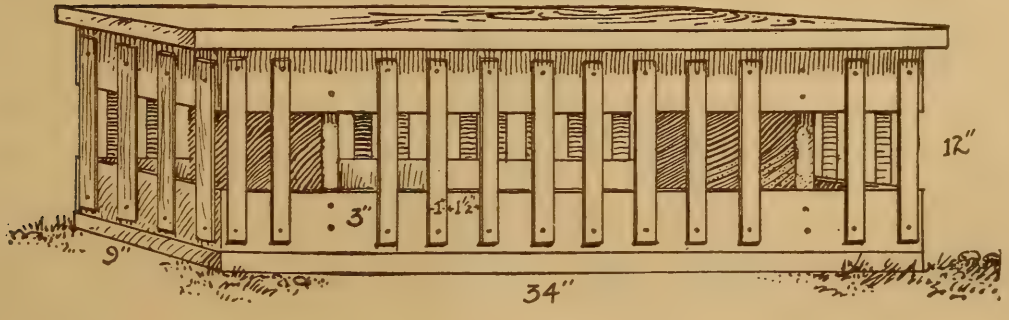
In the warm season the bath may be given out in the yard, but during cold weather it should be located in the pen. Much water will be splashed out, so it is well to set the pan in an old sink or tight box with a waste pipe, to protect the floor from constant wetting.

Pigeons spend much of their time in the nest boxes, but a few perches should be attached to the wall. A very simple form is the "A" perch, built of pieces of board six inches wide and seven or eight inches long. These may be placed one above another, as their form prevents the soiling of any bird roosting below another.

Common berry crates make excellent holders for nesting material, as they prevent the birds from soiling or scattering it around, and still permits them to help themselves.

Hoppers of the usual form, as described elsewhere, are used for grit and shell.

FEED HOPPER for PIGEONS



Feed hoppers similar to those used for poultry may be adapted to meet the needs of pigeons. They should be so constructed as to prevent the wasting or soiling of feed, and large enough to permit several birds to eat at the same time.

A very simple, yet satisfactory, feed hopper is illustrated herewith. The one shown has one large and two small compartments, but it can be made any desired length and divided as desired.

Anyone can easily construct this appliance. The bottom is a box three inches deep, seven inches wide inside, and as long as necessary to permit a fair proportion of the flock to feed at one time. The partitions are solid pieces of board ten inches high, and on these the upper frame is nailed.

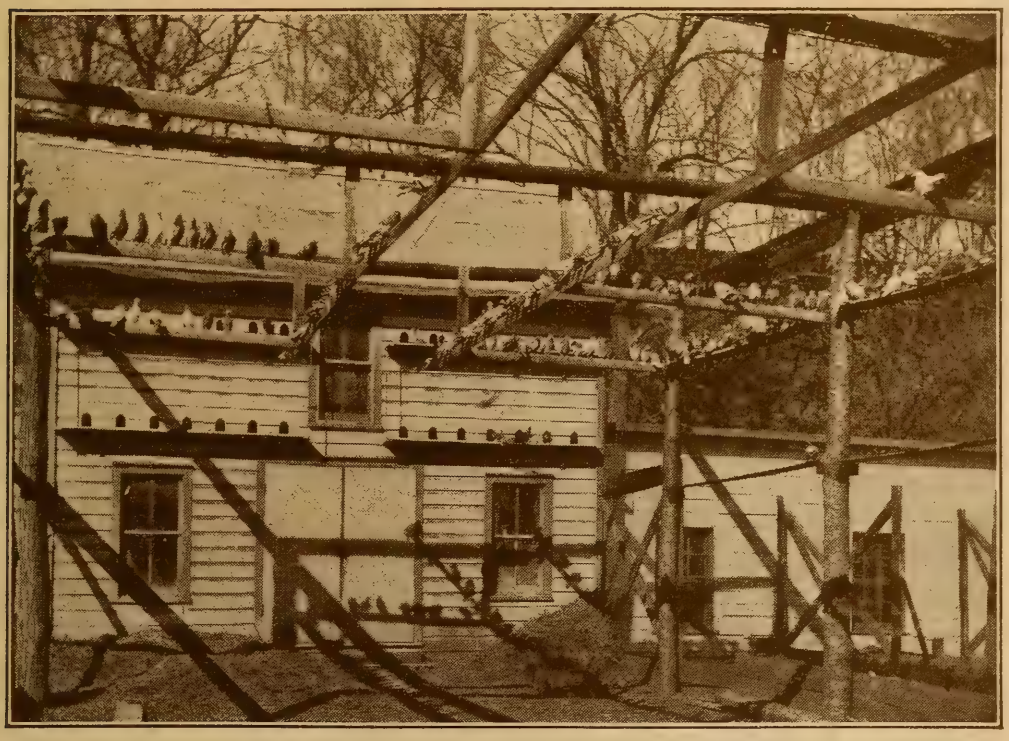
The slats are made of lath, the edges of which have been planed smooth. These are set one and a half inches apart, and through the openings so left the birds thrust their heads to get the food. They may eat at will, but cannot throw grain out, nor soil it in the hopper.

The cover is flat, merely a board projecting two or three inches over all sides of the hopper. A few cleats nailed at proper places inside prevent the cover slipping either way when in position.

A soft net stretched on a large ring, and the latter mounted on a light pole, will be found a great help in catching individual birds, either in the pen or flight. This work should be done outside whenever possible, to avoid confusion among the nesting birds. Leg bands are a necessity. These come in two forms—seamless and open. All are made of aluminum, the open band being a strip of the metal which is bent around the leg. The seamless band is a ring which is slipped over the foot of a squab early in life. By the time the youngster can leave the nest the foot has grown so large that the ring cannot be slipped off, either intentionally or by accident. In this way a permanent means of identification is provided.

Leg bands may have numbers, initials, etc., stamped upon them, making record-keeping a simple matter.

Rations for pigeons are much alike, varying only in the proportion of the various grains used. The staple feeds are cracked corn, red wheat, kafir corn and Canada peas, with hemp, buckwheat and German millet as dainties. Where stale bread is available it may be used to advantage. Recent tests seem to indicate that broken peanuts—peanut waste—make an excellent feed.



A COMBINATION BUILDING
Pigeons in the two-story section, hens in the one-story wing.

The following mixtures have all been tested and found satisfactory:

45% cracked corn,
45% red wheat,
10% Canada peas.
Hemp and buckwheat in small quantities at intervals.
During the winter increase the corn; give more wheat in hot weather.

25% cracked corn,
25% red wheat,
25% kafir corn,
25% bread crumbs.
Add 10% hemp seed to the above mixture.

50% cracked corn,
50% red wheat.
Give an occasional meal of Canada peas, buckwheat and hemp seed.

50% red wheat,
10% cracked corn,
10% kafir corn,
10% buckwheat,
10% Canada peas,
10% millet.
In addition, supply an occasional meal of hard-baked corn bread.

Feeding methods vary as greatly as in other branches of poultry husbandry. Some prefer to give the birds heavy meals, morning and evening, with a light feeding of dainties at noon. Others keep feed in hoppers available at all times. Probably the latter plan is best when squabs are being hatched in large numbers, as they must be fed regularly and heavily in order to secure satisfactory growth and heavy weight. On the other hand birds which are not feeding youngsters may get too fat on unlimited feeding.

Everything considered, the best plan is to give non-breeders meals at regular intervals, just what they will clean up in a short time. Those rearing young should have a mixture of the staples available in hoppers practically all the time and be given an occasional meal made up from the list of dainties.

Remember, big squabs are never found where scanty feeding is practised. They cannot make quick growth of bone and flesh without a liberal supply of raw material.

In addition to the grain mixture pigeons require a supply of grit, crushed oyster shells and salt. Granulated charcoal is often a help in keeping the digestive tract in proper shape to perform its functions.

For nesting material nothing equals tobacco stems. These should be cut or broken somewhat, as the birds make bulky, open nests from long stems, and many eggs are lost. Pine needles are also excellent. Straw or coarse hay may be used if the above are not available.

Prior to nest building the birds begin " driving," the male following the female about and picking at her constantly, apparently endeavoring to show her that it is time to begin nesting. Where much driving is observed there will usually be many nests in a short time.

The eggs are two in number, laid at intervals of about thirty-six hours. During the time between the laying of the first and second egg the nest is watched with jealous care, but incubation seldom begins until both eggs are deposited.

The cock and hen both do their share of the work of hatching, taking regular turns on the nest. The squabs appear after about

seventeen days. At first they are the most helpless creatures imaginable, but they soon begin to grow at an extraordinary rate and often equal or exceed their parents in weight at four to five weeks of age.

Until the squabs are able to leave the parent nest, they are fed entirely by the old birds. The feeding process is interesting, the food being disgorged from the crop of the old bird into that of the youngster. For the first few days the food is a soft material called "pigeon's milk" which is secreted in the crops of both parents. By degrees half-digested grain is included, until at last the grain is given in its natural state, and only a little softened by soaking in the crop.

The rapid growth of a squab is probably due to the fact that it practically has two digestions at work for it in addition to its own.

After about four weeks healthy Homer squabs will be found large and heavy, firm in flesh, and with wing and tail feathers two-thirds grown. They are then ready for market.

The evening before they are dressed they should be placed in crates where they cannot be fed by the parent birds. This is to insure empty crops, a point which must not be overlooked.

Some markets will accept squabs unplucked, but the better plan is to dry pick them, taking off all the feathers excepting those on the head.

The squabs are usually hung up by the feet and stuck with a sharp knife in the same manner as chickens. A hook with a small weight attached is inserted in the lower jaw and picking commenced at once. Some prefer to simply break the neck, but the other method seems to be better.

After the feathers are romoved the squabs are left in cold water for several hours until the animal heat has been completely removed. They are then removed, the feet and heads carefully washed, dried and packed. The most popular packages are light wooden boxes holding from one to four dozen. These boxes should be neat and clean, and where the shipment is not iced, should be lined with clean paper.

Local markets should be developed by the small producer, as it is not a profitable procedure to pay express charges to distant points on small shipments. The large breeder will usually do better to find an outlet in some city, selling direct to hotels, clubs and restaurants, or through some commission man who specializes in this line. The

demand is steady for white skinned squabs, plump, fat, weighing eight pounds or more per dozen. Of course smaller, inferior stock sells also, but the price is usually low. Therefore it is evident that it is good business to retain as breeders only such birds as breed freely, feed heavily, and grow youngsters meeting market requirements. All others should be instantly discarded.

Before their squabs leave the nest, good breeding pairs will have another nest built and eggs incubating. This explains the necessity of providing two nest boxes for each pair of breeders.

Pigeons are unprofitable when constantly disturbed by strangers, when the house and appliances are permitted to become filthy and unsanitary, when vermin torture young and old, or when rats have the run of the loft, eating eggs and squabs. Rats are particularly destructive and must be kept away at all cost. Elevating the floor of the building is one means of discouraging these pests, as this does away with their favorite hiding place.

Regular cleaning of the nests, perches and floor is essential. The droppings should be carefully preserved, either for use as fertilizer or for sale to tanners, who use this material in the preparation of fine leathers. Quite an income is frequently derived from this source.

Cleanliness does much toward keeping down lice and mites. Where necessary, the nest boxes should be painted with liquid lice killer and squabs and adults dusted with lice powder. A liberal pinch of the latter in the nest is a preventive, and it is a good scheme to add this as soon as the baby squabs appear.

Probably the most troublesome pigeon disease is canker, a cheesy growth which forms in the mouth and throat. It is transmitted from old to young while feeding, and also sweeps through the mature flock.

Remove the canker with a flat stick and swab the sores with Pratts Disinfectant, undiluted; repeat as needed. Also use Pratts Roup Cure in the drinking water.

"Going Light" is a wasting disease, the exact cause of which has not been determined. Keep the birds in the best physical condition by the use of Pratts Poultry Regulator.

Bear in mind these simple facts: Success in squab breeding is secured only by using as breeders selected birds that produce the right number of squabs; keeping the stock in prime physical condition; keeping the quarters clean, sanitary, and free from vermin; furnishing an abundance of suitable feed; studying the market and selling to best advantage.

A COLLEGE CLASS IN POULTRY HUSBANDRY

The agricultural colleges and experiment stations are doing great work in behalf of the poultry industry. The above cut shows a typical "short course" poultry class containing men and women from all walks in life.

PRATT EXPERIMENT STATION

The Pratt Food Company is sincere in its desire to help the poultrymen of America make a success of their business, to be a big factor in the development of the great poultry industry. Each year we expend a considerable part of our profits in work of a constructive character.

For years we have been conducting a Poultry Service Department, the purpose of which is to give our customers personal advice and assistance in the solving of the many perplexing problems which are constantly arising.

No charge is made for this service. Every letter of inquiry is given conscientious attention and receives a frank, detailed reply. Thousands of our customers regularly take advantage of this service, and all bear testimony to the fact that we are able and glad to help them. If you need help in the matter of poultry buildings, breeds, rations, incubating, brooding, diseases, write us. Address your communication to Poultry Service Department, Pratt Food Company, Philadelphia. You will receive a prompt, helpful reply, without charge.

We have established the Pratt Experiment Station for practical research work in poultry husbandry. Photographic views of this place are reproduced on pages 80 and 81 of this book. These show most of the principal buildings, but convey no adequate idea of the beauty of the location, the extent of our operations, or the quality of our flocks of breeding fowls and ducks. To really appreciate what we are actually doing one should pay a personal visit to the Station. The invitation to do so is freely extended. Come any day except Sunday. The Director will be glad to welcome you, and will give you any information and advice which you may require.

The Pratt Experiment Station is located at Morton, Pennsylvania, a suburb of Philadelphia. There are both railroad and trolley connections, so that the station is easy of access.

In character, the entire establishment is unique. It is not operated with a view to securing financial profit. Rather as the name indicates, it is a place where careful research work is conducted, bearing especially upon the industry as it affects the business of the Pratt Food Company and its hosts of customers. Here we conduct careful tests of the various Pratt preparations before and after they are offered to the public.

The equipment is complete but not extravagant. Everything is designed to produce practical results.

Several varieties of chickens and ducks are bred, sufficiently high in quality to win leading prizes at the largest poultry exhibitions. We are usually in position to furnish breeding stock and eggs for hatching at moderate prices.

When in Philadelphia, be sure to visit the Pratt Experiment Station

THE NEW PARCELS POST LAW

Poultrymen will be much interested in the new Parcels Post Law. Poultry products, including hatching eggs, eggs for the table, dressed poultry, etc., can all be mailed, when properly boxed, to all points throughout the United States.

The law provides as follows:

"That hereafter fourth-class mail matter shall embrace all other matter, including farm and factory products, not now embraced by law in either the first, second, or third class, not exceeding eleven pounds in weight, nor greater in size than seventy-two inches in length and girth combined, nor in form or kind likely to injure the person of any postal employee or damage the mail equipment or other mail matter and not of a character perishable within a period reasonably required for transportation and delivery."

For the purpose of carrying this law into effect the United States is divided into zones with different rates of postage applicable to each, as follows:

Weight.	1st zone.		2d zone, 50 to 150 miles.	3d zone, 150 to 300 miles.	4th zone, 300 to 600 miles.	5th zone, 600 to 1.000 miles.	6th zone, 1,000 to 1,400 miles.	7th zone, 1,400 to 1,800 miles.	8th zone, all over 1,800 miles.
	Local rate.	Zone rate, 50 miles.	*Rate.*	*Rate.*	*Rate.*	*Rate.*	*Rate.*	*Rate.*	*Rate.*
1 pound	$0.05	$0.05	$0.06	$0.07	$0.08	$0.09	$0.10	$0.11	$0.12
2 pounds	.06	.08	.10	.12	.14	.16	.19	.21	.24
3 pounds	.07	.11	.14	.17	.20	.23	.28	.31	.36
4 pounds	.08	.14	.18	.22	.26	.30	.37	.41	.48
5 pounds	.09	.17	.22	.27	.32	.37	.46	.51	.60
6 pounds	.10	.20	.26	.32	.38	.44	.55	.61	.72
7 pounds	.11	.23	.30	.37	.44	.51	.64	.71	.84
8 pounds	.12	.26	.34	.42	.50	.58	.73	.81	.96
9 pounds	.13	.29	.38	.47	.56	.65	.82	.91	1.08
10 pounds	.14	.32	.42	.52	.62	.72	.91	1.01	1.20
11 pounds	.15	.35	.46	.57	.68	.79	1.00	1.11	1.32

The local rate is applicable to parcels intended for delivery at the office of mailing or on a rural route starting therefrom.

It will be observed that the rates of postage are largely reduced and that the limit of weight is increased from four to eleven pounds. Parcels will be delivered at all free-delivery offices and to patrons residing on rural and star routes; they may be registered and may be accorded special-delivery service on payment of the usual fees, and they may be insured against loss in an amount equivalent to their actual value, but not to exceed $25, upon payment of a fee of five cents. Distinctive stamps must be used on all parcels, but they may be mailed in quantities of not less than 2,000 identical pieces without stamps affixed, the postage being paid in money.

EXPERIENCES

If you would like to read some rather interesting experiences with **Pratts Poultry Regulator,** just peruse the following:

December 7, 1911.

I am enclosing order for some more of your supplies. After a long experience I find Pratts Poultry Regulator to be absolutely the best tonic to keep a flock of poultry in condition. Just as soon as I find a pen is not doing well, I use the Regulator in their mash. Almost immediately I notice their appetite improves, their combs redden and they lay better. I have also made trial of your other remedies and I find them all absolutely reliable.

JOHN S. MARTIN, Breeder,
Regal Strain, White Wyandottes.
Port Dover, Canada.

September 24, 1911.

I have used Pratts Poultry Regulator for the last 20 years and always had the best of results. It is a great egg producer and the best feed to keep little chicks strong and guard off that terrible disease, bowel complaint. In fact, I cannot do without it for its good is seen in every part of the poultry business.

GEO. WM. LYON,
Cherokee, Iowa.

February 20, 1911.

I am a breeder of "Buff Rocks" exclusively for 8 years and have never been without Pratts Poultry Regulator.

I recommended your Regulator to Charles T. McIntosh & Son, 268 King Street, this city. They begged me for your address. Quote them prices at once. They will give you an order.

GEO. G. HUNEKEN,
124 Cannon St., Charleston, S. C.

May 15, 1912.

I have had such satisfactory results in the use of Pratts Poultry Regulator, that I now use it every day at the rate of 36 lbs. of Pratts Poultry Regulator to 1800 lbs. of mash.

A year ago last winter, cholera, or some bowel trouble broke out among my fowls, 75 soon died, others became droopy and lost appetite and I feared the trouble would go through my flock of five or six hundred. Egg production dropped from two to three hundred a day to only 25.

My attention was called to Pratts Poultry Regulator and I began to use it every day. The bowel trouble was checked, and gradually, in a few weeks my fowls picked up, were soon in good condition and egg production normal.

I have since used Pratts Poultry Regulator regularly and my flock has been in good condition and egg production large.

The egg record for 900 fowls for 5 months the past winter, was as follows: Dec. 50%; Jan. 43%; Feb. 55%; March 69%; April 69%. The lower record of January was caused by some pullets moulting.

I have been asked if the use of Pratts Poultry Regulator affected the fertility of the eggs for hatching and would say that fertility of eggs averaged 87% in December to over 90% later in the spring.

J. H. RANKIN,
South Easton, Mass.

P. S.—This spring I made a test for fertility of eggs taking ten eggs from each of 38 pens with the following results:

11	pens tested			100% fertile.
only 4	"	"	as low as	60% "
a few	"	"		70% "
all others		"	80% and	90% "

One of the four pens testing only 60% tested 100% on second test and with one of the other three pens the fault was in the cockerel and he went in the pot.

December 5, 1911.

I am both selling and feeding Pratts Poultry Regulator, and make a specialty of high-bred Buff Orpingtons. I have at least 12 cockerels worth from $20 to $75 each, and they were all placed in healthy condition by use of Pratts Poultry Regulator and their quarters disinfected with Pratts Disinfectant.

W. H. Topp,
Westgate, Iowa.

June 12, 1912.

I have used Pratts Poultry Regulator and find it excellent for moulting and also for making hens lay. They lay 50% more now since I used it.

Rudolph Kuzdas,
1235 64th Ave., Oak Park, Ill.

May 3, 1912.

I have been using Pratts Poultry Regulator and consider it fine. It certainly does make the hens lay and eggs hatch well; out of 112 eggs I got 106 chicks and have only lost two. I am recommending your Remedies to all of my friends.

J. C. Fink,
Fink, Va.

January 27, 1912.

Anybody that keeps chickens and wants eggs when they are high should use Pratts Poultry Regulator. I am glad there is such wonderful food for chickens.

A. E. Hopkins,
128 Webster Ave., Syracuse, N. Y.

March 11, 1912.

Up to two weeks ago I was using ——— Poultry Food, but it did not do the work so I tried a package of Pratts Poultry Regulator, and was surprised to see a change in two days. I have at last found the one food that does what they claim for it. I might say I have tried several different kinds, but they do not compare whatever with Pratts.

Henry H. Walker,
Box 11-A, Alvin, Texas.

RAISING LITTLE CHICKS

You will gain many valuable pointers about growing little chicks if you will read the letters printed below:

July 19, 1912.

I want you to know what I think of Pratts Baby Chick Food. I have great faith in it and have had wonderful success in starting my chicks this year, having hatched out about 2800, and I think I have lost less than 200 altogether from the start to the present day: a part of these were taken by hawks and crows and a few got caught out in the rain. But the little, weak chickens which we generally expect to lose within a few days seem to live and grow just as well as the others on the Pratts Baby Chick Food.

I cannot say too much in favor of Pratts Baby Chick Food. For starting them it certainly produces wonderful results and no need of losing any chicks.

I have just got to feeling I must have it when I have little chicks coming along, as they take such a start and the weakly ones brace up and seem to be as strong as the rest.

Lester Tompkins,
Concord, Mass.

May 13, 1912.

When I received your glowing recommendation of Pratts Baby Chick Food, I made due allowance for the enthusiasm of an agent, but was considerably impressed by what you wrote; sufficiently so to order two bags. Now, after trying it for ten days, I want to report that you did not say half of what that food would warrant. I did not conceive it possible for the mind of man to invent a chick food that would give such astonishingly good results.

I took off 295 chicks ten days ago, hatched by sixteen hens and my incubator. I gave the chicks to fifteen hens, twenty chicks to a hen, and fed Pratts Baby Chick Food only. Two weaklings I killed, ten have been trampled to death, two of them by a loose hen fighting with one in a coop. That leaves 283 ten days old. I went over them carefully this morning and could not find one case of "pasted up behind" or any sign of bowel trouble of any kind, and not a case of "long wings"; every Leghorn breeder will know what that means. I never saw a plumper, thriftier looking lot of chicks.

I honestly believe that if Pratts Baby Chick Food were used exclusively for the first three weeks by all the poultry raisers in the United States the saving would amount to millions of dollars.

George A. Cosgrove,
Willington, Conn.

June 20, 1912.

I have just had a chance to test out Pratts Baby Chick Food. On June 1 I took off a hatch of 263 White Rock chicks, as bright a lot as I ever saw. On the morning of the 7th, when I raised the hovers, I found forty of them dead. Upon examination I detected that bowel trouble had set in and I at once thought of Pratts Baby Chick Food. I immediately began feeding it with the following results: June 8, 17 dead; June 9, 8 dead; June 10, 3 dead; June 11, none, and June 12, one. Since the 12th I do not think we have lost a chick from that hatch, and they are now growing like weeds.

Kindly send me, by express, to Plainfield, Conn., ten pounds. I feed it dry and the chicks are crazy for it.

W. J. Tilley,
Packer, Conn.

August 12, 1912.

I take great pleasure in heartily endorsing Pratts Baby Chick Food and in recommending it to any one that raises poultry. The early part of this hatching season we had tried several other Chick Starters and had had considerable difficulty in raising our chicks past the danger line, in fact, lost quite a few chicks. Pratts Baby Chick Food was recommended to us, and since using it we have had little or no trouble in raising our chicks. We now have over 2000 young stock on hand growing nicely, all of which were started on Pratts.

I consider that there is nothing as good for baby chicks as Pratts Baby Chick Food.

Angelo J. Myers,
Prop. The Linfield Poultry Farm.
Linfield, Pa.,

June 25, 1912.

Pratts Baby Chick Food is the best thing for little chicks that I ever sold or used. I am in the Poultry business and have been for twenty years. Don't change your formula; you have it just right.

T. H. Ireland,
Mexico, Indiana,

July 6, 1912.

I wish to state that Pratts Baby Chick Food has proved most satisfactory. Never had chicks do as well. They feathered very evenly and made that growth so much desired, those long, deep and shapely bodies, and give every promise of being very fine show specimens, having taken on their first feathers in a most pleasing way. Am much pleased and have now purchased a large bag.

Frank B. Hood,
Somerset, Mass.

March 20, 1912.

I must say I am very much pleased with Pratts Baby Chick Food and would like to know who has it for sale in Moorestown, N. J. I have used it on a flock of young chicks that I put out a week ago, and they are all hale and hearty, and I have not lost a single chick.

B. W. Cooper,
Geo. L. Wetherill & Co., Inc.,
114 N. Front St., Philadelphia, Pa.

A GOOD LICE KILLER

is needed almost every month in the year. The testimony of some prominent breeders printed herewith may assist you in getting *the best*:

Pratts Poultry Lice Killer is the most meritorious preparation of its kind I have ever sold or tried. It certainly destroys the lice.

Dr. A. C. Brown,
Secretary Board of Health, Mosells, Mo.

I found recently 200 red mites under the end of each roost. I painted the roosts and inside of the brooder with Pratts Liquid Lice Killer, using it freely, letting it flow into all the cracks and crevices. A few days later I found a few mites and I gave it another dose. I painted the roosts with your Lice Killer once a week until cold weather, and after the first week I did not find a single mite.

In the big coops where I was troubled with mites last year I painted the roosts once a week all summer and found no signs of mites.

Wm. B. Jaycox,
Peekskill, N. Y.

November 3, 1909.

I have used Pratts Lice Killer on vines and young plants and find that it destroys all lice and bugs on them and leaves them in a healthy growing condition.

W. S. STANDARD,
Hyde, Ga.

March 9, 1911.

I have been using Pratts Lice Killer for three years and like it better than any I ever tried. I use it for killing all kinds of insects. I can't afford to quit using it.

MRS. W. W. BOLDING,
Route No. 2, Houlka, Miss.

May 27, 1912.

I used Pratts Lice Killer last year and found it very good. I used the ———— Powder but lost eight chicks in two days so I don't like to run any more chances of losing more.

MRS. H. PAECHT,
184 Thompson St., New Haven, Conn.

ROUP IS DEADLY

See what these folks have to say about the methods they used to quickly cure this disease:

December 29, 1911.

All our chickens were sick two months ago and we purchased a box of Pratts Roup Cure and found it very successful indeed. One of our neighbors cut off the heads of twelve of his chickens before he knew what was the matter with them. I told him to get your Roup Cure. He did and saved all the rest of his fowls. I told eight of my neighbors and they all found it successful.

FRANK SWEIGERT,
Cressona, Pa.

March 7, 1911.

I just want to let you know how good Pratts Roup Cure is. My entire flock was infected with cold and roup, so I bought a box of your cure. In less than 9 days my whole flock was in as good a condition as ever.

WILLIAM C. MELCHER,
Bally, Pa.

January 3, 1911.

I gave Pratts Roup Cure a careful test on a flock of 50 growing White Wyandotte chicks in October which were infected with bad colds, nearly all running at the nose, and after treating one week with your Roup Cure, nearly every one was well. This I never accomplished with any other Roup Cure before.

EDGAR BRIGGS,
Pleasant Valley, N. Y.

January 9, 1912.

In November and thereafter and until present date I gave my 16 chickens Pratts Roup Cure about two times a week in their drinking water and the result was that they do not know anything about roup. My mother has about 200 chickens, and she did not give anything to them, and the result was, she was losing two and three every week with roup. I told her to give them Pratts Roup Cure, and you can go out now and you won't see another roupy hen among the flock.

E. M. MENGEL,
Drehersville, Pa.

August 10, 1911.

My hens were sick with the roup last winter. One nearly died and another was past eating. I got a box of Pratts Roup Cure, gave it to the one so near dead. To my surprise she was able to eat in two days, and the rest came along nicely, and up to now I have 148 chickens from 11 hens and have not lost a chicken this summer. My chickens are laying and moulting right along.

MRS. WM. SHIPLEY,
Ordway, Colo.

March 3, 1910.

I have used Pratts Roup Cure and cured the severest cases of roup where all other roup cures failed. I can conscientiously recommend it to any one wanting a sure cure.

L. B. WILSON,
Edinburg, Ill.
(Breeder Rhode Island Reds, Partridge Cochin Bantams.)

January 25, 1912.

Please quote me your lowest figures on quantity lots of Pratts Roup Cure as I have a large flock of fowl, and have found that this remedy is the best that we have so far tried. I want to get it in quantities from one dozen lots up.

J. E. STANLEY, Genl. Mgr.,
Wallkill Land Co., Sussex, N. J., R. F. D. No. 2.

April 11, 1912.

I am using Pratts Roup Cure and Regulator. It does just as you say. I had a cockerel that had a bad case of the roup; his head and tail hung on the ground and I gave him the Roup Cure as directions said, and in three days he was walking around and eating. Now he is as well as ever.

GEO. O. SCHEIRER,
Box No. 105, Hokendauqua, Lehigh Co., Pa.

April 16, 1912.

Enclosed please find 50c. for another box of Pratts Roup Cure. I got a box last fall and think it the best I ever used. I don't care to be without it now, for with that on hand I feel safeguarded against roup, so please send at once by mail and oblige.

MRS. FRED M. NASH,
Baynesville, Va.

WHITE DIARRHEA IN LITTLE CHICKS

No need to lose the baby chicks if you follow the advice of the breeders printed below:

May 21, 1912.

Please find post office money order for which send me Pratts White Diarrhea Remedy. I have tried four different kinds without any results till I tried yours, and have lost but few. You will *rush* it as I am out.

D. G. WHITE,
R. D. No. 1, Creston, Ohio.

July 1, 1912.

I have used Pratts White Diarrhea Remedy with much success, and my neighbors are now wanting to try it too. So please send me two 50c. boxes of Pratts White Diarrhea Remedy at once.

MRS. I. E. MOORE,
R. R. No. 2/14, Perryville, Mo.

April 18, 1912.

I received Pratts White Diarrhea Remedy. It certainly is fine. I didn't lose one chick. I want another 50c. box for myself, and a 25c. box for a neighbor. I also want a 50c. box of your Cholera Remedy and a 25c. box of Head Lice Ointment. Also one 50c. box of Gape Remedy.

MISS BERTHA DEWITT,
Hoyes, Md.

April 15, 1912.

I enclose check for two dollars for which please send me by return mail its worth in Pratts White Diarrhea Remedy. It is a good thing.

E. E. WHEAT,
Downs & Wheat, Ramsey, N. J.

December 4, 1911.

I have used Pratts White Diarrhea Remedy and I wish to say that I have had some chicks that started with the White Diarrhea and I gave them the tablets in their drinking water, and have not had any trouble since. They are growing fine.

R. C. FOSTER,
Box No. 67, Summerville, S. C.

HERE ARE

PRATTS POULTRY REMEDIES

"MONEY BACK IF THEY FAIL"

Pratts Poultry Regulator

This is the original Poultry Regulator of America, in use by the most successful poultry raisers everywhere.

It is a guaranteed egg producer, and when regularly used, hens lay throughout the year.

It is a perfect digestive and tonic and will prevent chicken cholera, gapes, roup, rheumatism, expel worms, prevent leg weakness, egg eating. It also greatly improves turkeys, geese, ducks, pigeons and guineas—insuring quick, healthy growth.

100-lb. bags, $9.00; 25-lb. pails at $2.50; 50c. pkgs., weight 4 lbs.; $1.00 pkgs., weight 9 lbs.

Pratts Baby Chick Food

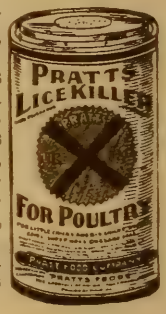
This is one of the greatest Money Savers and greatest Chick Savers ever placed on the market. Every man, woman or child who raises little chicks, turkeys, ducks and geese should try at least one package of Pratts Baby Chick Food. It is a scientific food ration to be fed for the first three weeks. If you want *real success* with your hatches, if you want to save all the baby chicks, if you want them to grow fast—get Pratts Baby Chick Food on our recommendation for your first trial, after that you will never be without it. Put up in 1-lb., 3-lb., 6½-lb. packages, also 14-lb., 25-lb., 50-lb. and 100-lb bags.

Pratts Liquid Lice Killer

is the strongest liquid preparation on the market for the destruction of poultry lice and lice on horses, cattle, cows, and hogs; ticks on sheep, and fleas on cats and dogs. 1 qt., ½ gal. and 1 gal. cans.

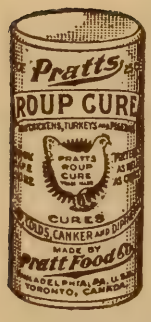
Pratts Lice Killer

(Powdered Form)



It quickly and thoroughly kills all lice on little chicks, big chicks, setting hens, and incubator chicks. It rids horses, cattle, hogs, dogs and cats of lice, and destroys ticks on sheep. It destroys insects and bugs on vines, plants and flowers. A valuable deoderizer and disinfectant, for all poultry houses, barns, stables, and dwellings. Drives out moths from closets furniture, carpets and clothing. 25c. and 50c.

Pratts Roup Cure



is a scientific preparation compounded into a fine powder, and when mixed with water, is absorbed by the blood at once, purifying the system, allaying inflammation and reducing the fever. It not only cures, but prevents roup, colds, canker, catarrh and diphtheria, and should be given to all fowls frequently to keep diseases away.

Pratts Roup Cure is quite different from many so-called roup cures, which may cure a cold, but never a genuine case of roup.

Extra large boxes, 50c. and $1.00; smaller size, 25c.

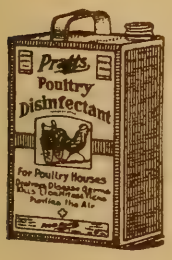
Pratts White Diarrhœa Remedy

This remedy will positively save many dollars worth of little chicks to poultry raisers. It has taken us nearly three years to find a remedy for White Diarrhea and we are so sure that we have it in this article that we authorize our dealers throughout the world to refund the purchase price in case it fails. Extra large box, 50c.; small size, 25c.

Pratts Poultry Remedies continued on next page

PRATTS POULTRY REMEDIES

Pratts Poultry Disinfectant



If poultry keepers would regularly spray the chicken houses, roosts, dropping boards and utensils with Pratts Poultry Disinfectant, most all their troubles would vanish. This great Disinfectant is a real wonder-worker in the poultry yard. Put up in 1-qt., 35c. and 1-gallon cans, $1.00.

Pratts Cholera Remedy

is an unfailing remedy for this disease and is a "guaranteed or money back" article which is prepared under our own supervision in our own laboratories. It is administered in the drinking water, and will be found of great value, not only for treating cholera, but also in cases of indigestion, sour crop, dysentery, diarrhea and bowel trouble.

25c. and 50c. a box.

Pratts Head Lice Ointment

causes immediate death to the Head Lice which kill so many thousands of little chicks yearly. Head lice weaken the chick's health—and a chick in weakened condition easily contracts many other diseases. Pratts Head Lice Ointment prevents this. It is non-poisonous, and is also the best remedy for Scaly Legs. Sold in 25c. tins.

Pratts Gape Remedy

An unfailing guaranteed remedy for Gapes. If used in the drinking water from the start until the chicks are four week old, gapes will be practically unknown. Prices, 25c. and 50c.

Pratts Bronchitis Remedy

Bronchitis in poultry is fatal in a few days unless promptly checked with Pratts Bronchitis Remedy. This remedy is sure, safe and quick and will *save your birds.* 25c. and 50c. boxes.

Pratts Condition Tablets

A "bracer" for overworked, run-down poultry. Keeps show birds in the pink of condition; puts flesh on thin birds; prevents colds, roup and liver troubles. We guarantee this Remedy to satisfy you or refund purchase price. 25c. and 50c. a box.

Pratts Sore Head (Chicken Pox) Remedy

From costly experience poultrymen have learned to dread the disgusting disease known as Sore Head or Chicken Pox. They know it will practically ruin the flock unless quickly checked. We guarantee a sure, rapid cure if Pratts Sore Head (Chicken Pox) Remedy is used. 25c. and 50c. a box.

Pratts Scaly Leg Remedy

You can quickly root out the little insect which digs the scales of the feet and legs of your chickens by the use of Pratts Scaly Leg Remedy. This disease not only impairs the vitality of your birds, but also ruins their appearance. Our remedy will keep the legs clean and healthy. 25c. and 50c. a box.

PRATTS PREPARATIONS—for Horses, Cows, Hogs & Sheep

Pratts Healing Ointment

(For Man and Beast)

This is a humane preparation for the quick cure of all sores, cuts, scratches, grease wounds, burns, scalds, corns, harness and saddle galls, barb-wire fence cuts, itching, eczema and eruptions. Heals naturally, permanently and leaves no dangerous scabs.

Excellent for human use, too. Extra large box, 50c.; small size, 25c.

Pratts Worm Powder

Specially prepared for destruction of worms in horses, cows, hogs and sheep. Has a strong tonic effect that builds up and helps the animal to regain strength. Unquestionably the quickest, surest and most thorough worm-destroyer procurable. 50c.

Pratts Veterinary Colic Cure

It is a positive remedy in all cases of flatulent colic (sometimes called bloat), spasmodic colic, gas colic, kidney colic; and acute indigestion. Its action is quick, and a cure certain.

Extra large bottle, $1.00; small size, 50c.

Pratts Liniment

(For Man or Beast)

acts both as a counter-irritant, drawing out the inflammation, and as a penetrant. Can be used either to blister or without blistering by regulating application.

Cures rheumatism, lameness, sprains, bruises, contracted muscles, shoulder or stifle lameness, thrush or canker, sweeney, kicks, quinsy, curb, splint, capped hocks, shoe boils.

Large bottle, $1.00; smaller sizes, 25c., 50c.

Pratts Distemper and Pink Eye Cure

goes direct to the seat of the disease, purifies the blood, prevents weakening of the internal organs.

50c. per bottle.

Pratts Animal Regulator

This is the original and pioneer Stock Regulator of America. It keeps horses well and strong, improves their wind, and makes their coat sleek and glossy.

Cows give more and richer milk, the percentage of butter fat being increased, and their calves are strong and healthy. Steers fatten in half the time.

Hogs are raised and fattened quickly and kept free from disease. Sheep are kept healthy, and their meat and wool improved by its use. Test it on our guarantee to do the work or money refunded.

25-lb. pails, $3.50, are popular with our customers; also in 50- and 100-lb. sacks and small packages.

Pratts Dip and Disinfectant

has received the U. S. Government rating for sheep scab (1 part Dip to 70 parts water). Cures sheep of ticks, foot-rot and other diseases; cures cattle of mange, ringworm, scabies, screw worms; cures horses of mange, ticks, lice, ringworm, thrush, galls, cuts, wounds; cures hogs of mange, lice, eczema, fly and maggots; cures dogs of fleas, lice and mange.

1 qt., ½-gal. and 1-gal. cans.

Pratts Healing Powder

A guaranteed remedy for harness galls, sores, grease heel, bleeding ulcers, etc. It will arrest hemmorrhage and check blood flow. Dirt and dust cannot get into wounds as the Powder forms a coating over it. Large 4-ounce can, 25c.

Sample tin free for 4c. in stamps.

Pratts Heave, Cough and Cold Cure

is a positive remedy for heaves, coughs, cold and catarrh. A single day's treatment helps the worst case of heaves. Several doses show a vast improvement, and in a few days the cough will stop and the breathing be natural.

Large box, $1.00; smaller size, 50c.

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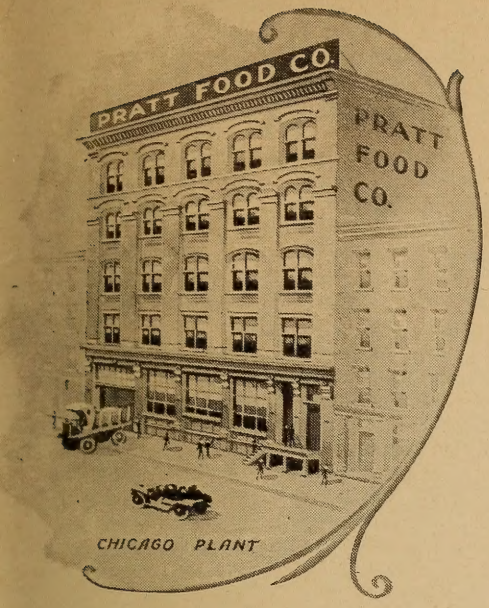
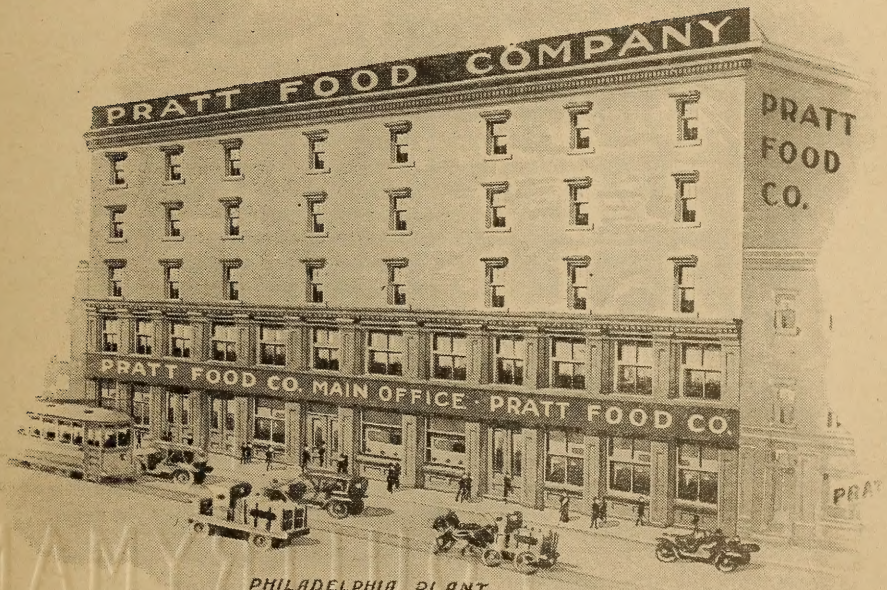


CHICAGO PLANT



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