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TREATISE
ON
CARE AND DISEASES
OF
POULTRY

(Extracts from The Modern Veterinary Practitioner)

By W. H. HAYES, V. S.
SEATTLE, WASHINGTON

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Poultry Domestic Fowls

We here now submit some of our practical experience, of which the results have been remuneratory, or of supplying a profitable recompense. An individual who possesses a reasonable allowance of ambition, even though your capital perhaps is limited, yet by and through energetically devoting similar attention to this branch of industry, within three years of time you can be on Easy Street, and within ten yours you should have accomplished a sufficiency to support you comfortably for the remainder of this life; and to leave a sufficient amount for your heirs to litigate over.

Breeding.

The same rules on producing thoroughbreds, which has been thoroughly explained in my previous instructions on this subject, refer to those.

How to produce a distinct breed of Buffs: Cross with full blood Brahma hens and the Brown Leghorn cockerel. If you desire to change the shade or color with any of the various breeds: If you wish light, select those of the lightest for breeding purposes. To change to darker colors, reverse the conditions. In two years' time you will be surprised at the accomplishments. We sometimes meet with conditions where the hens have become so fat and oily that the shells are insufficient; with those, reduce the cereal supplies and increase the shell food. Be careful not to over do this plan, or the eggs will not hatch, unless you crack the shell slightly on the twentieth day of its having been nested for hatching purposes. Sometimes accidents occur and we find broken eggs in the nest. In some cases the odor is something fierce (perhaps will cause you to say that a sick hen laid those eggs). Carefully remove all parts, wash the other eggs in a weak solution of salty warm water and return them. If the nest has become so filthy that it is real strong, remove it also. Prepare a

warm, new nest; place one or two other eggs in the new nest; permit the hen the work of fixing the nest. While she is doing this business be careful to retain a warmth of about one hundred and five degrees, Fahrenheit, or a few degrees above that of the human body; now remove the fresh eggs and place the others in the nest as soon as convenient. In these modern times we resort to various modes for the hatching purposes. Not wishing to change the subject too abruptly—but will you permit me? I refer you to the act of the Apostles, Acts Five, one to twelve, inclusive; but the conditions of which we shall now mention are quite different. At Dumont, Iowa, I have a brother-in-law, the Squire, a Mr. Melvin S. Needham, who in the month of June, 1872, made an outing trip from Dumont to Storm Lake, Iowa. While the party were in camp on the bank at Storm Lake, some of the boys found a wild goose on duty on a nest of eggs. She, the goose, had too much wing for the other fellow, but the magistrate appropriated the eggs and kindly and carefully placed them in his bosom, as the party were ready to break camp and start for home, the Squire hoping and praying that the eggs and himself would keep warm until they reached home. His petition was granted; but before they reached their destination most of the Bi-pennate were hatched and were ready for the boys to divvy rations with them; since that time the Squire has shed most of his hair and some of us expect to see a crop of feathers replace it; but up to the present writing only a few pin feathers are discernable about the shoulder blades. A part of this is parable, but the hatching statement is an honest truth. With eggs which are hatchable and subjected to a temperature of from about one hundred and four to one hundred and seven, Fahrenheit, whether in the original way of nature or by artificial means. I shall call your attention to the various leading methods of artificial hatching; the various plans are well worthy of thought and the means are reliable and profitable. It is advisable to start the first year on a small scale, then as you become more familiar with the business increase as your desire prompts you; by adopting this method you will be certain to succeed.

For the general purpose in our experience, the Black Minorca rooster and the Black Spanish hen produce a

gratifying inducement. To be successful in this business, cleanly surroundings, dry air, a good roof with proper ventilation, and a reasonable amount of windows, on the sunny side of the building, will amazingly augment the profits; also these hygienic methods aid in maintaining healthful conditions. If this plan of procedure is methodically adhered to by, and through this means, if we were to locate two men of about equal intelligence, ambition and tact, the one on a ten-acre chicken ranch, the other on a hundred and sixty-acre farm, allow the poultry man about one-third the amount of capital of that which will be needful or requisite for the farmer, at the expiration of ten years investigate the financial results, including the bank accounts, also the worthless and worn out machinery on the farm, for which a junk Sheeny, perhaps partly out of sympathy, would be willing to haul it away, that by so doing it would perhaps be a means of prevention of accidents to the stock or to the children, the farmer's wife, the farmer or his friends, bargain, "Yes, Ih gipp you gash dirdy-vife zendz, gash fun to vole peexness, dos been blendy, voss say, duh." "Well, Jacob, I suppose that we had best call it a bargain; of course, that outfit cost me well onto two thousand dollars, but wife has been insisting that we, in some way, have it gotten out of the way as several of our animals have already been injured on some of those rusty irons, and had it not been that we were so fortunate as to have in the house a bottle of the Dr. Hayes Anti Ferri Virus Liniment, I am confident that matters would have become more serious. Say, Jake, come in and take dinner with us; the boys and I will help you to finish loading this afternoon; glad you came along."

How different we find conditions with the poultry family and their ranch—no worn out machinery. The birds should all be sold before they arrive at the conditions of senile decay; birds which are plump and fat are always in good demand at a fair price. If you follow my plan you can fatten the birds surprisingly soon, keep the floor well swept, darken the apartment, or shade them so that they have barely a sufficient allowance of light to partly guess their way about; with poultry, as well as with all the domestic animals, by pursuing this plan or method we can save about one-half of the expense in preparing them for

market, or for slaughter. This plan once tried will never be denied.

It is now no experiment on my part, as I have tested its efficiency. If you will test this method, you will know what to say for it, also with the hairy domestic animals. If, in fly time, we derive benefits in various ways, the ventilator should be in the cone or highest part of the roof. The fowl guano should be swept and shoveled out on an outside floor; a good cheap plan to roof it over, and protect it from the sun, dew and rain. When thinly spread over the field the next year and succeeding seasons, you will derive gratifying and profitable benefits in the extra yield of crops; after having spread the guano, it is advisa-

THE GOLDEN POLAND CHINAS

ble to harrow that part of the field as soon as convenient. If the surface is considerably packed or crushed over, a good plan is to run a cultivator over it, then harrow.

The question is sometime asked, "How many hens should be allowed for each rooster?" While an approximate answer, or to some extent, at least, a hypothesis reply can be given: with game cocks, about twenty, while with the large weighty birds, from ten to twelve would be advisable. Comparison: a customer once asked me how long a cow's tail should be. My answer: "About long enough to reach from where it is attached to the body to within a few inches of her heels."

Hatching or Incubation.

Anthropology, the science of man, need have no boundry lines. An Irishman was standing on the pavement in front of a hardware store interviewing a stack of nicely finished incubators. He said to one of the clerks: "Frind, plase till me phat are these quare looking things fir?" "Yes," the clerk replied, "those are incubators." Patsy said, "Yes, I suppose so, but can yes bate anything wid them?" Clerk: "Why, my dear sir, those are one of the best inventions of the last several decades as you can see here. We can place several hundred eggs in those apartments. We then secure our warmth through those vacuums, so you will understand one of those fixtures is capable of doing the services of which would require quite a flock of hens, and the hens can be on other duties of which the incubator would be a failure."

Average incubative period:

Chicks	21 days
Geese	31 "
Ducks	29 "
Turkeys	28 "
Guinea fowls.....	28 "
Pheasants	25 "
Ostrich	41 "

Regarding the plan for the poultry rooms, you should know how you want those. If you can have an earth floor most of it should be covered with chaff or straw, or screenings, to be replaced with fresh, clean material as conditions require. We have obtained best results by placing boards on the smooth earth; we mix sand, gravel, ashes, lime and shells in one place where the sun will have a chance to shine through the large windows, which should be on the south and south-east of their house.

For ventilation and sky-light, a cheap and convenient method, which also prevents an unreasonable amount of draft: Prepare the desired number of windows to be placed on the roof, near the cone; we make a frame, fit it snugly in the roof, prepare it so that the window will fit in snugly; attach hinges on the upper part, now fasten a ring, staple, or hook on the under side. Attach a small

rope or cord to this; by this means you secure a control of ventilation; also if they are placed on the south half of the roof, this plan will admit of more sunlight, and when raised, if only a few inches, this plan will admit the escape of foul gases, gas being lighter than air, it will escape quickly.

Dry, warm apartments, well ventilated, with a good supply of windows, a dry comfortable floor with no draft under it will be a means of prevention of diseases, a saving on feed; also the birds will thrive much better, and the hens will very soon well repay you for your duties well done. But never permit of a low direct draft to punish your birds. With this kind of a structure, if the walls are what they should be, the hens, if properly supplied with fresh water and the proper kind of feed, will lay about as well during winter as in summer months. We do know that fresh ranch eggs never fail to be in good demand at a nice price here on the Pacific. During Fall and Winter months we depend largely on storage of Eastern eggs, which have been shipped here; they retail here at thirty-five cents per dozen, and we consider that if one-third of them are usable we think we have struck it lucky. During our recent holidays, I purchased a supply in the hope that they would aid us in faring sumptuously, but, alas, I started to go through the kitchen at about the noon hour and one of our helpers had accidentally dropped a pan on the hot stove; in this pan my boss said that "these were only six or seven Eastern eggs." I found the kitchen deserted, the doors and windows opened wide; but friends, permit me to remark, please be generous on expanding your imagination. Words fail me to explain on paper the fierceness of that odor. The fumes were something surprising, a sufficiency for at least fifty persons, but I had it all to myself. One of our party hallooed from an adjoining room: "Doctor, isn't thar sothin' ye can pout on the sthove that will make it smil bether?" "Yes, Bridget, you get some limburger cheese." "Och, ye git out, ye mane devil." "Never mind, Bridget, there is a man here that's gone." Later in the day I returned home. My friends asked me what I thought about it. I answered: "If those Eastern hens were not sick, they expected to be soon."

While the poultry industry, at first thought, perhaps,

would have the semblance of a minute feathery endeavor; yet the fact remains just about the same, that with a small capital, in this industry, any man, woman or child, who is physically able, and possessed with a reasonable amount of intelligence, industry and economy of which it has been said (it is the road to wealth), in this industry. A person can consistently make the start with five dollars, and by attending strictly to business, in the space of three years one would be favorably surprised at the thousands of birds and the daily cash income, of which it is possible for one to have at their command.

The first consideration in reason and propriety should be to prepare suitable apartments for their comfort and healthfulness. This method will not only be pleasant to your thoughts, but will result advantageously at headquarters. We believe that we have quite well covered the thought for the minimum.

The universal law of cause and effect will be applicable at this juncture:

Hatching and raising with a man-made mother. This accomplishment or attainment, of obtaining profitable results, with a reasonable allowance of intelligence and some experimental practice we can accomplish profitable results. Stay by it, you will win, proceed with a determination of (know no defeat), there is always room at the top for this class of individuals.

I deem it to be advisable, if you are not a practical chicken man, to start in on a small way. Select pure bloods, even though some breeds are quite expensive; but bear in mind that very soon you will own high price birds and they are almost invariably in good demand, at a nice price. Place yourself on record as being the owner of as good birds as the other fellow owns. If we start right, the mistakes will be of rare occurrence, and the results materially more meritorious, costs less for feed for good stock than it does to care for scrubs and the dunghills. Also, you will feel less like sneaking out of sight when friends call to view your outfit. The best quality of individuals are almost invariably interested in good blood, regardless of where it is. Establish the reputation of owning as good as the best, and then if you are favorably constructed with character your amiable ambition will aid your efforts; it

is profitable to endeavor to obtain this accomplishment. Reputation is that element of which the people think we are, while character can be seen only by omnipotence.

The Honorable Professor Keen of Philadelphia, Pennsylvania, U. S. A., writes: "My first experiment in hatching by artificial means was with eccalobeeon, about four feet long, two feet high and two feet deep, two feet square, placed near to one end; the drawers encompassed with a sheet of water three inches, connecting with a large bed,

WHITE DORKINGS

two feet square each way, through which an iron stove pipe passed to heat the water. In the top drawer are two openings, one front and one back, with valves, connected by a small iron shaft; in the front valve there is inserted a glass tube with a bulb at each end, nearly filled with mercury, so regulated that when to warm or cool, the mercury will expand or contract, throwing the weight from one end of the valve to the other, opening or closing the valve, as required. This self-regulator of the heat in

the drawers removes the necessity of so close attention to the heat.

"I hatched eggs that had been partly under the hen and produced the chickens from the first warming of the eggs, up to the eighteenth day. Then the tin case sprang a leak and all the water ran out, but I had sufficient evidence that the eggs would have hatched, had the case been made of copper, perfectly tight. I then had recourse to bricks piled around the stove in place of the water. I found the heated air would pass around the stove as well as the water and kept up a uniform heat, that would have hatched eggs equally well but attended with more personal care, which led me to experiment with the accumulations in the horse barn as a means of generating heat, which has resulted in perfect success in producing fine healthy chickens in twenty-one days from the commencement of their heating. This mode will be useful to the farmers, as they have the material at hand and the only cost attending it would be a little labor to accomplish the hatching of eggs to any desired extent. This manel (to use the Egyptian name) I will now give a minute's description that every farmer may build one for himself and be able to perfect the hatching of eggs and rearing of chickens without the aid of a hen. It is a building thirteen feet by sixteen, with a tight-grooved partition dividing it into two apartments, the front one seven feet, the other nine feet; in this partition are two openings to receive the front ends of the ovens. These ovens are six and a half feet long, two feet, two inches wide, nineteen inches high on one end, and eighteen on the other, in the clear back end closed and made entirely inch boards; lined with two solid, water-tight with shutters in two equal parts, hung to the bottom and in the middle with hinges, and buttons to close the front end; in the upper part of the shutter there are two sliding valves, each four inches by six, to give air and regulate the heat, the outside of the ovens and the partitions should be well coated over with pitch. To exclude moisture and prevent the wood from decay, the ovens should be placed eighteen inches above the ground, supported with posts at the back end and four feet apart, with an open board partition, the boards running up and down ten inches apart, to divide the manure between the

ovens and yet not entirely separate, so, that in renewing the manure of one oven the other may not be chilled. There should be a window in the back to give air and receive the manure through. The manure should be such as is made in well littered horse stables, and use straw and manure mixed and well watered, while being thrown in a pile where it is to remain twenty-four hours to soak and permit the redundant water to pass off. It should be placed loosely around the ovens, which will not require renewing for two weeks, then only renew half the length of the oven at a time, judging from the heat when more of it is to be renewed, which will be required about every week. Tan will make a better bed under the oven than manure, the heat will last longer. The egg box, four feet long, two feet wide, three inches deep, lined with braize, ten inches of one end covered with wire to keep the chickens that are just hatched; the other part of the box should have a light frame with twine passed between the eggs and attached to the frame to turn all the eggs at one time. The egg box turns on a center to reverse the ends in the oven; the carriage is made in two parts, the lower part has sash pullies let into it to roll on the rails, the upper part is connected with the lower, with four small bars of iron about eighteen inches long with holes for a wooden screw in each end, the screws put into the top and bottom when they lie together (which moves like a parallel ruler) and confined to different heights by a hook about ten inches long, fast to the upper part and hooking into staples driven into a piece of wood running along and fastened to the lower part. This arrangement is to sustain the egg box at different heights, to suit the required degree of heat, which I have found to be as near as it can be kept to one hundred and four degrees, from the first to the last stage of successful hatching. My feed room can be made perfectly dark through one of the doors in a hole one and one-fourth inches in diameter, over which is a piece of cloth tacked (an inch hole in it) that will exclude all the light except what passes through it, where can be seen the first progress of the chickens and in four days, if there is no appearance of a chicken, boil it for the young brood.

“Next in order is the rearing of the chickens without the aid of a mother. In the basement of the first named

building on a level with the top of the eccalobeaon is a platform four feet by seven, with a slide to open in fine weather into a small yard; also one to open into a box with wire front (over the eccalobeaon) which is moderately heated from a small stove; in this box is an artificial mother, made of rabbit skins (I have one also made of the skins of fowls), hung about two inches from the bottom, where the chicks are first placed. In three or four days they are let into an adjoining apartment, where there is a skeep skin mother; over this is another with one end raised higher than the other for chickens further advanced to run under, with a small yard attached. In the glass building is a platform sixteen feet by four, about four feet above the ground floor for chickens still further advanced with a yard to it; they are next shut out from this apartment and run with the full grown fowls. All of these apartments will accommodate about five hundred chickens of the different ages.

"This mode of hatching and rearing them is attended with less than half the loss that usually takes place, when hatched and reared by the hen.

"With regard to the feed for the first two or three meals, I give grated stale wheat bread, laid on a sandal floor, next I give bread, boiled in milk, and while hot, mix coarse ground Indian meal with it, make it nearly dry. For the older fowls I give wheat screenings and whole corn, with once a week boiled meat. It will here be seen that I have made the management of eggs as plain and simple as Capt. Cook did, when 'he stook one on its point.'

"Yours most respectfully,

"JOSEPH S. KEEN."

I have given you the Professor's delineation verbatim. With many of our ranchers and farmers, especially in the rural districts, the plan is certainly meritorious; you readily discover that with almost a costless fixture you can so arrange as to have young birds hatched every day in the month, if you so desire. In Northwest Washington, also in many other localities of which the author could mention, cedar shakes and all of the other wood part of a good-size building could be prepared from one tree, so that the small bill for hardware and a small amount of labor would cover

the expense for an all money-making enterprise. With this kind of a building it will last to be as old as a man.

Also I possess some old copies of the London Times, in which since 1857 I have been materially interested with its description of the Bromely boys.

They started their poultry industry on a limited capital, now they are worth thousands of pounds. The last winter I was down in Iowa we had a very deep fall of snow, which

WHITE COCHINS

drifted and banked in the regulation way in those windy prairie States. A friend and myself started to go out in another part of the city; we saw a boy of about ten years who was very busy working in a fifteen foot snow bank and was using a stove shovel and his hand sled. My friend asked him how he expected to remove so large a bank of snow. "By keeping at it, sir." Let us endeavor to profit by his plan. If we do this, victory will be ours; we will be

sure winners. The Bromely has since been renamed, now know nas the London Home for Poultry and Pigs. Those began in their industry with less than ten pounds. In 1913 they are wealthy men.

I shall now refer to the description of which the London Times published in July 1889: "We recently called at the Bromely home; we were awe-stricken and astounded, amazed at the marvel accomplishments. Admiration, approbation, approval, appropriate. Eight hundred cockerels and hens enjoy the comforts of a model prison without the disadvantage of compulsory silence or solitary confinement. Their cells are light, airy and comfortable, their dietry liberal and varied, the temperature of the abode is regulated on approved scientific principles, and the gentlemen who have made the character and temperament of fowls their especial study, look after their comfort and minister to their wants. The House: The section of the house now in active work consists of an airy, glass covered house, three hundred feet long, twelve by three feet and these pens are sub-divided again into roosting and laying compartments and glass covered runs, where exercise may be taken in wet weather. The general effect of this home, which will be multiplied by six in a few months, is very striking. Its central floor is of red tiling, with shafts to admit cold air in summer and hot in winter. A regular register of temperature being kept at each side of this and running along the pens are symmetrical little beds of mustard and cresses for the young chickens, whose compartments are on a second tier and at short intervals a vine plant of choice quality, springs gracefully up to eventually join tendrils with its opposite neighbor in the glass roof above. The covered mess box looking like seats where-upon the rare plumage and vast proportion of the birds may be critically viewed. Also certain nests for egg laying are so arranged that the most sensitive hens may pass to and from them without any annoyance.

"The nests are wooden bowls piled with clean hay and plentifully sprinkled with fine sand. In order that the poultry may be kept warm on cold nights, the roosting perches are composed of hot water pipes, a circumstance which is said to induce the constant laying of eggs. The perfect ventilation and scrupulous cleanliness of the home

are very marked and the happy, well-fed look of the fowls and the way in which their necessary wants are forestalled, combined with the exact similarity of their several cells, gives the model prison simplicity, strength and force as the visitor progresses down the long house.

How and What They Are Fed.

“The principle on which these fortunate creatures are fed is to have certain essential dishes prepared and given them every day, while other viands are varied through the week; thus an animal food is necessary.

“Contracts have been entered into for horses, upon the veterinary surgeon of the company giving his certificate that the horse submitted to him is fit for consumption. The contract price of two pounds is paid and the animal boiled down, the carcass is then finely minced and a portion given each day to the fowls. Pigs are also to be kept in order that nothing may be wasted, the liquor in which the horse has been will be given to the porkers as soup and the dietary will then run somewhat after this fashion: Cabbage, green food, and horse flesh twice every day; Sunday, cross-grained barley; Monday, Indian corn; Tuesday, oats; Wednesday, boiled potatoes; Thursday, boiled rice; Friday mangel wurzel; Saturday, mixed grain; add to this a handful of grit, sand is sprinkled in the food to promote digestion; then sulphate of iron is put into the drinking water, and charcoal twice a week; and it will be seen that our high estimate of the comforts enjoyed by those cockerels and hens are not overcharged. The floor of each inner pen is covered with sifted soil some inches deep, while the outer one has a plentiful supply of stable manure, each material being carefully turned with the spade twice a week.

Fattening Hens.

“One of the proprietors called my attention to the fattening devise. At the end of the long living room is the fattening department, a dark chamber with small boxes three feet long, in which fowls are to be placed and fed, at each side of this is a hatching chamber, similarly fitted up, where many hens are always sitting. Beyond this again is the yard, which is rapidly converted to the

use of the company. When the entire place is in working order, artificial hatching rooms, with concrete floors, movable glazed sides and slate or felted roof, will be seen in active operation. The interior of these rooms will be fitted with movable shelves, divided into compartments by galvanized iron, each compartment having a frame work of what is called artificial mother. A section of soft and fleecy carriage rug pendant from a strip of wood and giving warmth and shelter to the fledglings makes the mother, many specimens of which are now to be seen about the home. The chickens are placed in these compartments from their birth until they are a week or ten days old, when they are moved to the rearing home. As soon as the head is covered with feathers they are pronounced hardy and fit for the ordinary vicissitudes of adult fowl life.

"The Company periodically issue pamphlets on their best known methods for the management of this industry and any new discoveries which are worth the mentioning, they gladly make it public at the earliest practical opportunity.

"In one of their recent periodicals they say the functions of a hen towards her chickens consists in forming a covering to prevent the natural heat of their unfledged bodies from cooling; also in breaking into small pieces the food that is too large for them, and lastly to protect them from danger. Now, by artificial means they not only do this but they perform the duties a great deal better and with less casualties to the chickens."

By permission I quote from Dr. Navin. He says: "Most writers on poultry do not believe in hatching or rearing, yet they might as well doubt growing tropical fruits and plants in England. Chickens do neither require artificial heat nor that of their mother; all that is necessary until full fledged is to provide them with suitable covering for their bodies to preserve their natural heat, the same as with infants during cold weather. However, their homes must be warmed the same as for full-grown poultry and then a good ventilation, without a draft, a dry floor, sunlight, and a small run and artificial mothers to sleep under. The run house consists of sunk passages lined with brick walls and with a concrete floor,

heated with hot water pipes and roofed with felt. This house has a glass covered run, the concrete floor of which is covered with gritty dust. The advantages of the entire system of breeding adopted for the Bromley House are officially summarized thus: Slow feeding allows weak fowls to get sufficient food, which they cannot when a great number are feeding together. The food can be sup-

PLYMOUTH ROCKS

plied in the required quantity and quality to each brood or class, as it must be evident that breeding and laying stock requires a different diet from chickens and poultry intended for the market, each cockerel having only a certain number of hens allotted to him, they are served better.

“In this means of collecting and profitably using the poultry manure, the constant renewal of the ground will

prevent its getting tainted with the fowl's droppings. The temperature is kept equal and cold and dampness prevented, preventing disease from exposure, cold, wet, and contagion; economy in food, as poultry will eat much less when warmly housed and deprived of running about; keeping breeds and sexes separate, enabling precise statistics as to the comparative productiveness of the various breeds and also in ascertaining what hens have ceased to lay; the early detention of hens wanting to set; obtaining a larger number of eggs and in a season when most scarce. A genial temperature will induce hens to set, notwithstanding cold weather. This system, however, like all new systems, must be extended gradually, as old birds which have been accustomed to roaming about will fret and lose appearance the first few months; but the young that are fed and reared on this system will thrive better and at much less expense for food than under the present mode. Another remarkable thing about this curious and interesting establishment, is the perfect reciprocity it is intended to maintain between the animal and the vegetable kingdoms. The land on which the six long houses will be open and in active operation in a few months, will supply the green feed for the poultry, besides sending a large surplus to covert garden markets.

"The manure from the poultry will go to enrich the grounds, the hides, bones and hoofs of the boiled horse, which has been used to feed the pigs and chickens, is to sell for the two pounds which its carcass cost, while the twenty-two yards belonging to the six houses will hold from thirty thousand to forty thousand head of poultry. Each yard will have two divisions, one of which will be devoted to young chickens and other to the young cockerels; though from the very spirited mien we saw improvised by two young Brahma Busters, who were in the same pen, it seems probable that the latter class may give vent to occasional bursts of pugnacity. In the center of each yard is also a tank for ducks.

"Some idea of the scale upon which it is expected to carry on the operations of the company will be gathered from the fact that four thousand eggs will shortly be in process of incubation at one time. From the present stock of eight hundred cockerels and hens the average

weight of cockerels and chickens, after they have been fattened, is put at six pounds, and though the present selling price is to be five shillings each it is sanguinely hoped, that by the rapid multiplication of the home and the consequent increase in numbers of the fowls bred, they will shortly be sold by the pound like butchers' meat and at a rate not higher than four pence per pound.

"That the Bromley will enjoy exceptional facilities for producing poultry and that their efforts must in time affect prices, seems obvious. A large proportion of their breeds are fancy ones where the chickens of these promise fair development or unusual beauty; they will be kept for poultry breeders and will readily command from five to twenty guineas (twenty-five to one hundred dollars) each. The commonplace offsprings of the same parents will be fattened and killed, so the race will be purified and improved year by year.

"While the value of chickens of the same breed liberally varies from one dollar and twenty-five cents to many guineas of twenty-one shillings each. In a few months from the present time when a floating stock of one hundred thousand salable chickens are constantly on hand, and when the six large houses and twenty-two yards are in full working order, we shall be able to pronounce more decidedly upon the practical bearings of the scheme. Meanwhile it is impossible to avoid admiring the organization of the home now open, as it is to withhold sympathy from a project which, in these days of high prices and scarcity, aims of placing within the reach of the very poor man an article of food, at present to be seen only on the table of the well-to-do."

The above, although by far the largest, is but one of the establishments of that kind that have been successfully operated in Europe, and although several attempts at the system have failed, for want of experience and caution, in this country it is more favorable to the enterprise than any other country on earth.

The author feels confident that not many years hence, this system of hatching and raising poultry will be extensively practiced in this country.

Chicken Feed.

To me it appears reasonable that the Bromley syndicate have sounded the key-note in an intelligent, practical method, while perhaps not all of us can be persuaded or convinced of the necessity of following in detail the verbatim plans and principles, of which they have pursued. If you have, you are entitled to registry as a thoroughbred, for they have been winners from the start to the present day, but each of us who are possessed with a reasonable allowance of nosology are in great luck. I claim this prerogative, barring the fact that my home has been on the Pacific Coast since '91. In America, South, North, and the British possessions, the Indian corn, broom corn, also sorghum seed, usually constitute their food. We will find it to be more profitable, to some extent at least, to follow the Bromley plan on feeding birds. We have obtained the best results by using cracked, rolled or soaked cereals of whichever kind. The vegetable feed should be hashed, cooked, or steamed; the leaves of the sunflower and seeds are also feed for chickens. The quantity which can be raised on a small piece of rich soil is something surprising, if the caps are reasonably well dried and ricked up in a cool, well ventilated apartment; rick with stem down. The lower tiers should be laid on narrow strips, permitting the air current to pass between the floor and tiers. The floor should be one or two feet up from the ground, permitting a free draft. We can feed with those seeds almost every day through the year. If you try this plan you will then know what to say to your friends regarding results. For those which you desire to fatten quick, try alternately cracked corn, cracked wheat or buckwheat. They will plump out more rapidly if you cook or soak all the feed and confine them in a well ventilated, darkened room. Supply fresh, clean water every day. By devoting this attention, within three weeks' space, they will be in good fix for the market. Cracked rye or barley makes a very good substantial substitute, also add a small allowance of ground pepper to the feed. If the digestion becomes inactive add some ground shells or sand to be mixed with the wet warm feed. Do not permit them to roam about if you wish to expedite matters; also supply them cooked fresh meat or fish three or four meals

DARK BRAHMAS

a week; add some ground pepper, horseradish or mustard, the green leaves will be alright. Two or three meals a week of cooked carrots or potatoes will be of benefit. In the absence of those, some of the other vegetables would chink in for a substitute. Mustard tops or horseradish leaves, if thrown in the enclosure will be of vital benefit. Under any circumstances also be sure that they are supplied with fresh water every day.

Poultry should never be fed with anything of a saline or salty nature. I have been called to examine poultry where we have known them to be in a pitiable condition. They are carnivora as well as scavengers. I now have a call in mind of where one of my customers had dumped out a barrel of spoiled corned beef (chickens crave meat to eat). They made a raid on the decomposed beef, which had been thoroughly salted. After several scores of them had died my friend 'phoned me to call as soon as possible. I made a night trip to the ranch and when he informed me of the loss, we concluded to await for daylight. In the morning I dissected several of the dead birds and we killed a few which were partly alive. In each bird I found evidence of chloride of sodium; the farmer was certain that I was mistaken. He is a powerful, muscular, brawny tiller of the soil; but I nerved up and meekly said to him, "Possibly one of us is mistaken," and at once hurried away from him, and as I was rushing around the corner of the hog house stumbled over this mound of strong beef. I instantly realized the sensation that harmony would soon reign on that ranch. About this time his good wife appeared on the scene with alligator tears on her cheeks as she said she feared that they would lose all of their poultry and that she had been so in hopes of saving enough of them to buy some things for the children. I informed her that if they would bury or burn that mould of salty beef and do the same with scores of decomposing fowls that the surroundings would be of greater value for domestic purposes; also to prepare a slumgullion of flaxseed, one gallon; red peppers, half pound; water, six gallons; hog's lard, two pounds; air-slacked lime, two pounds; fine, gritty sand, two pounds, simmer to a jell, stir until have accomplished a sameness; when cold allow all that they desire to eat. We accomplished a cure. We had another

similar experience with turkeys, geese and ducks, from feasting on spoiled salty salmon, recommended the same treatment, obtained good results.

Almost any of the fowl family will eat enough salt to kill if they can have some meat or fish along with it.

Cholera.

Treatment for poultry: Proportions: Five pounds corn starch, two pounds corn meal, half pound black pepper (ground), water, two gallons; cook and stir to same-ness; when cool give all a sufficiency. Be sure to begin early treatment; insist on cleanly surroundings. If digestion is seriously impaired, feed on flaxseed jell and black pepper (ground) and thoroughly mixed. This is best to warm it to about blood heat; for young birds prepare corn starch and pepsin and you will soon adjust conditions.

Dysentery in Young Birds.

Prepare an infusion of any of the berry bushes or leaves or roots of oak bark; in the absence of these roast some wheat flour in the stove oven, mix one tablespoonful of ground black pepper to a pint of brown flour, mix while yet warm. Allow about half rations, repeat every three hours. If the lower back feathers become filthy clip them with scissors and apply oil or grease about those parts; this means will prevent angry, irritating difficulties. Those which are critically ill should be separated from the other birds and confined in a darkened room for a few days. If some of them die, bury them or burn them at the first opportunity. Also scatter some lime or copperas or sulphur. Scatter sawdust or dry sand over the floor; also be sure that they get the benefit of pure air in dry apartments.

For young chickens, their feed, care and management, with some people, both ladies and gentlemen, I prefer giving this advice at long range or over the telephone. I had some recent experiences along these lines at long range, in safety. After the feminine and I had enjoyed a heart-to-heart conversation, and she, the feminine, asked me if I thought that she was getting a dad-gasted sight more goosier yearly, I kindly answered in the negative, but made use of some of the words which we fail to

find in the code of ethics. I most emphatically asked of her to not stand quite so close to the 'phone, as it appeared to me that her breakfast had consisted of brimstone cuss-words, limburger cheese and onions, and that the combination produced a hardship on the then existing conditions.

Pepsin.

As the pharmaceutical preparations of pepsin cost away up in "Z," we can prepare a home accomplishment which will fill the bill to perfection, and we shall have a costless preparation which will equal the druggist's best and in many cases, excel.

Prepare by securing the first stomach of a calf. A calf is best, but that of any ruminant will do very well, a pig next; clean and wash the specimen thoroughly, then stew for the space of thirty minutes; when cool enough for manipulation, peel the inner lining, wash thoroughly in a weak solution of alum and saleratus water, squeeze as dry as possible, then pass the fleece several times through a clothes wringer, dry thoroughly and grind or pulverize to a fine powder, place in a bottle and cork tightly and you have a reliable promoter for digestion, also a safe astringent. A very small allowance will do the business. Next best is Ligni carbo, wood charcoal in powder. These are home remedies. You will appreciate their value if you have occasion to test their merits, with cases of indigestion, constipation or dysentery. With those suffering from constipation mix with flaxseed jell; for those affected with dysentery, mix the powder with roasted wheat flour; for the constipated bird encourage exercise; for those suffering with dysentery confine them in a darkened room with quiet surroundings, a dry, warm floor, good top ventilation. Be sure that there is no side or end draft ventilation, and you should have all reasons to be hopeful for favorable results; it usually comes that way. Then after convalescence feed with flaxseed jell and powdered charcoal, the odor will possess less strength, the room be more hygienic, the people and the chickens more healthful and happy; also sprinkle a disinfectant about the premises and the air will soon become more wholesome and yourself pleased. With new chicks you will profit by supplying them with new milk for the space of two or three days,

PARTRIDGE COCHINS

then mix corn starch and powdered charcoal with the feed for a few days, give them a full start, and very soon you will realize that you have made another good record. Also mince mustard, horseradish, turnip, cabbage, beet, beggas or pepper grass tops will cause you to smile or grin, after you have realized the benefits which you, with so little effort, have been the means of profitable results; others have accomplished thousands in this industry. there is now an opportunity for you. Do not quibble at a small beginning, but remember that industry, economy and perseverance are winners; a man can build a mammoth wall, but a mole can undermine it; reverse the conditions, never give up in an intelligent method, know no defeat, and within the space of a few years you will be recognized as an individual of merit. Keep your business confined under your jacket, do a heap of listening, allow the other fellow to blow the bazoo gales, but you get the coin. If you know enough to get it, you will know what to do with it, and tell your enemies and your friends if you have any. Don't forget the Irishman said, "Everybody will have their enemies, but it's a mighty mane individual who has no frends," "Patsy, you're right," siz I, "Patsy."

By permission, permit me to quote from the worthy Dr. J. N. Navin. The feeding of fowls seems so familiar to everybody that any instructions on the subjects are, by many persons, considered superfluous. If anyone tells a farmer's wife that she needs instructions in the art of feeding chickens, she feels humiliated or even offended. Chickens, after being hatched, should never be disturbed for twenty-four hours after leaving the shell. They should then be taken, one by one, and their little bills dipped in fresh warm milk, until seen to swallow, which they will soon do. Each chick, as soon as observed to drink, should be placed onto a platform with raised edges, on which hard boiled eggs chopped fine and mixed with very fine pepper and shanish brown, equal parts, and thoroughly mixed with the eggs, about the size of a moderate pinch of snuff to four eggs. After the third day, equal quantity of eggs and stale bread, finely grated, may be dispensed with. This is more especially for valuable fowls. The hardier breeds will thrive and do well on grated bread and a little pepper; each must have a little milk or water once

or twice per day, placed within reach, supplied in shallow saucers or tin plates. After they are a week old, grated bread and Indian meal mixed and dampened with water and mixed with a little fine sand will do sufficient. After the second week crushed Indian corn will do for all hardy breeds; after the third week they may be let out in a lot to scratch and catch flies. The tender larger breeds need a week longer attention than the hardier kinds.

Young chickens should be kept separate from the grown fowls until they are able to escape from vicious hens and roosters that are inclined to peck at them. Great losses have been sustained by vicious hens striking chickens on the head.

Breeds and Varieties.

Breeds of poultry are grand families, which have existed as such from the time of their creation. They are divisions of the galinacious order of birds formed by nature or art. A variety is the result of a cross, producing birds which, under favorable circumstances, continue to produce progeny of their own kind indefinitely, but if such favorable circumstances are disregarded they soon lose their distinguishing characteristics and their original mixture becomes quite manifest. The case is different with a true breed; however illy treated it is the same fowl in all essential particulars though stunted and degraded ever so much, the blood is still the same.

These ideas have an important bearing, many new breeds, so-called, are constantly being pressed forward for public favor and because the specimens offered are fine birds and many have splendid qualities, farmers are induced to buy them and when they find it is too late they have no breed at all. All they have is a stock of fowls, different crosses of several breeds, quite likely inferior to those they had banished, to give room for their supposed new breeds. The genuine breeds extant in our country are not very numerous and are sufficiently marked to be easily distinguished from each other, but it is by no means so easy to distinguish a cross from the genuine breed. The variety has an established history for us to go to, but the cross has none.

"Breeding to a feather," is a phrase much used by poultry fanciers; fowls that breed to a feather are such as

present the same color or colors in their plumage without any variation; we have several of those families.

The Excrement of Poultry.

When the people comprehend the value of this material, if we protect it from the storms and sunshine, as has been previously advised, you will realize the fact that it excels the imported guano or seabird excrement, which is expensive and so largely used as fertilizer throughout the civilized parts of our globe. To increase the quantity, add about equal quantities of charcoal and ashes and about five parts of finely pulverized earth, then add about one-eighth the quantity of air-slacked lime to the quantity of guano, mix as best you can, spread thinly over the fields or lot; you will know what you think of results.

Capons, Female or Male.

The operation of caponizing fowls, consists of a safe, easy profitable operation. It consists in removing the main organs of reproduction. My method: Confine the birds in a darkened room for about the space of twenty-four hours (but, Friend, perhaps you had best operate on a few dead birds, that you may familiarize your intellect with the conditions) first carefully dissect some dead birds. By this means you will discover the fact that possibly you might post yourself on an extension of noseology. Of course in some things you know it all, but for this operation you will perhaps find yourself destitute. On the second day, prepare strips of soft cloth or some soft rope, hang your victim up by the feet. I prefer a dark room, with a supply of artificial light; the birds will be less excitable. In my experience regarding age, two to three months is the best time for various reasons. If some of them show up in good shape you can detect it at that age and perhaps would prefer granting an extension on their commission. Improve your flock in all reasonable method; it is profitable to do so. By performing this act your birds will mature earlier and the flesh will excel that of the non-caponized birds; also they will fatten in less time. Their weight will please you. For those which you desire to market earlier we can perform the operations earlier in dry pleasant weather. Prepare a quantity of hot

water, to sterilize the knife, the needle and the silk. Secure the right leg forward and the left backward reasonably well, make the incision in the left side; make ample room to pass the finger; you will find three layers; sever the spermadic muscle remove the generative organ. Insert the needful amount of stitches, tie a surgeon's knot on each stitch. Repeat this act on each separate bird. Continue the confinement for three days, feed with flaxseed jell and soaked wheat or cracked corn and some sand. Do not permit pole roosts in the room during this period.

How to prepare and use a cheap, odorless, reliable parasite exterminator:

Two pounds Quassia Chips.

Two ounces C. P. Ferri Sulphas.

Three gallons water.

Steep or boil down to two gallons; strain.

Spray or sprinkle in and about the affected places; also can be applied on the Poultry.

The retail price of this treatise is one dollar (\$1.00). In case of any agent selling for more or less, you will kindly notify the author and receive reward. We do not utilize a large part of our space, explaining how valuable the other part is, without the usual verbose descriptions. Our object is to establish the fact of giving the customer just the desired idea in a plain, straightforward, matter-of-fact way, easily and quickly comprehended.

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