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A GROUP OF BANTAMS

INDIAN GAAR.
PARTRIDGE COCHIN.

POLISH.
WHITE COCHIN.

THE CANADIAN POULTRY REVIEW

DEVOTED TO POULTRY, IN ALL ITS BRANCHES

Vol. XVIII.

124 VICTORIA STREET, TORONTO, JULY, 1895.

No. 7.

NOTES AND COMMENTS

SHOW DATES.

CANADA'S Great Fair and Industrial Exhibition, Toronto, Sept. 2nd to 14th, H. J. Hill, Secretary, Toronto.

Canada's Great Eastern Exhibition, Sherbrooke, Que., Sept. 2nd to 7th. H. R. Fraser, Secretary, Sherbrooke.

Western Fair, London, Sept. 12th to 21st, Thomas A. Browne, Secretary, London.

THE WESTERN FAIR

announcement will this month be found on the front cover. The Secretary informs us that several varieties have been added to the list, including black or buff Wyandottes; white rose-comb Leghorns, brown-red Game, white or black Cochin Bantams, Polish Bantams, white Japanese Bantams and Pheasants, any other variety. Amongst the "small fry" the additions are Dragons, Blondinettes, Belgian Hares, and two classes for Ferrets. London is a good show town and a few days outing there is always enjoyable. Go and take your (feathered) friends.

ONTARIO ASSOCIATION.

Mr. Browne has received a specimen of the new wire coops from Manchester, England, and is now inviting tenders from local makers.

SHERBROOKE'S GREAT FAIR

is gradually nearing the top notch and this year is desirous of making a special feature of the poultry department.

Liberal prizes are offered and expert judges will be engaged. For copy of prize list address the Secretary Mr. H. R. Fraser, Sherbrooke, Que. The dates are Sept. 2nd to 7th and entries close August 26th.

MR. A. G. PITTS,

of Highbridge, Somerset, England, the Secretary of the English Minorca Club, writes us under date of May 20th: "I have read with much pleasure the discussion re Minorca Standard in your issues of March, April and May. I herewith beg to send you an illustration of a pair of my challenge cup winners, which was considered to be about as perfect as they could be produced. The progeny of this cock has, so to speak, revolutionized the Minorcas in England. He was a marvellous bird. His great grandson won the cup at the Crystal Palace in November last. The hen was also one of the best ever bred."

The illustration kindly sent us by Mr. Pitt is quite familiar to us and was issued in 1888 by the *Fancier's Gazette*, since which year, we should infer, the type has considerably changed. As a matter of fact the comb on Mr. Wagner's drawing entitled "Ideal Minorca" is an exact reproduction of the comb on the bird referred to by Mr. Pitt. In view of this fact we fear we are yet as far off as ever in our ideas as to what a comb should be, that is if Mr. Pitt would lead us to infer that the type of comb there portrayed is yet the wished for ideal.

MR. C. F. WAGNER

has disposed of his Minorcas, twenty-four birds in all, to Mr. Duff, and will in future devote his energies entirely to buff Leghorns.

DOES ADVERTISING PAY?

The following contents of a postal card dated May 20th, 1895, would lead us to suppose that the man who "sticks" is the man who succeeds:

Port Guichou, Fraser River, B.C., May 20th, 1895.
To the CANADIAN POULTRY REVIEW, Parkdale, Ont., Can.

Gentlemen,—Wishing to subscribe for the above, but not knowing if you are still in that line, if so please send sample copy by return mail and oblige. I saw your adv. in the *Poultry-Keeper*, back number, 1887. FRITZ. BRENTZEN.

EGGS NOT HATCHING.

In the following letter a tale is told that we have never yet heard satisfactorily answered. Over and over again the same plaint reaches this and other journals, and though we have seen numerous "sure cures" fresh cases arise in which the sure cure does not apply:

"Can you enlighten me a little on a point that I am stuck on, that is an incubator. Three weeks ago I started up my incubator (of course I tried it first before putting eggs in it) and when the three weeks were up I only got six chickens out of about seventy eggs. I let the machine run two or three days longer and then broke a good many of the eggs and found that in nearly every case chickens were in every egg. That is where I am stuck. How is it that the chick should come to maturity and not break the egg? I have also set hens this spring and have had good luck with them. I kept the heat in egg chamber at 103 as near as possible, and otherwise followed instructions of book minutely. If, Sir, you could help me out of my difficulty, I should be very thankful to you, for I hate to give up the machine just yet. Yours truly, W. H. RIXEN."

It is quite impossible to put this down to any particular cause without knowing fuller particulars. Failure to break the shell may be due to: 1. Too little moisture. 2. Too much moisture. 3. Variable degree of heat, i.e., possibly lower at night. 4. Interfering with the machine when eggs are due to hatch, thus allowing temperature to run too low and causing chill, etc., etc. Anyone who has successfully overcome the difficulty would greatly oblige us by giving particulars.

MR. LENTON SAYS "MR. STEPHENSON DID IT."

In last REVIEW we commented on a libellous report circulated by Mr. J. J. Lenton, of Oshawa, against Mr. J. F. Brown, of Port Hope. Reference to the last issue will show the libel in question. Mr. Brown entered suit against Mr. Lenton, and we understand the case has been settled by the latter paying costs incurred and tendering an ample apology. The following communication has reached us from the defendant:

"Oshawa, June 10th, 1895.

Editor Review:

Dear Sir,—By a paragraph in your May issue your read-

ers were told I was in a "pickle." Well, it was hardly a "pickle," I just got slightly "tangled." It was this way: Mr. W. J. Stephenson of this place was in Port Hope, and when he came back he told me that which I wrote. He said he had it on good authority and stated it was a positive fact. According to what Stephenson said I did not doubt the truth of his statements, and I thought that in the interests of the poultry fraternity such things ought to be stopped, so without searching for further information I had it published. If I had looked for further information I would never have published such a yarn. By believing and publishing Stephenson's yarn I did Mr. Brown a great injury and entangled myself. We are very sorry to have placed Mr. Brown in such a light and entirely withdraw our statements which we published in the *Reliable Poultry Journal* and in the *Poultry Monthly*. By publishing these few lines in the REVIEW it may greatly help Mr. Brown and also show your readers our position. Wishing you success, I am, yours fraternally, JNO. J. LENTON."

INTERNATIONAL MINORCA CLUB.

Editor Review:

I WOULD suggest that an attempt be made to form a Minorca Club without any further delay. There are enough breeders in Canada to set the ball rolling, and doubtless our American friends will come in and join us. We could christen it "The International Minorca Club," and the Canadian members could meet at the Industrial Exhibition and discuss the standard, agree upon a type, and appoint a representative or two to carry out their wishes at a meeting to be held of the whole club at some place to be appointed, which, in all probability would be New York.

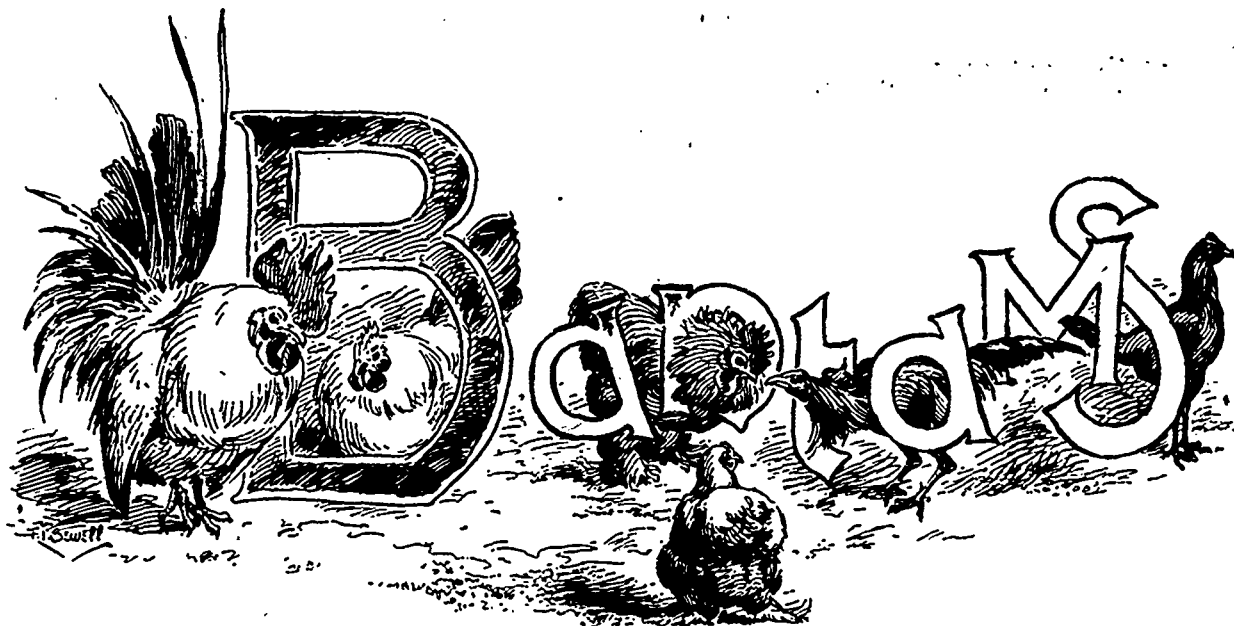
My suggestion is that those desirous of joining should send in their names to you accompanied with \$1 membership fee, and that you act as Secretary *pro tem*. You may place my name on the list, as well as that of the following gentlemen:—F. A. Gillespie, Denver, Colorado; George O. Morris, Malden, Illinois; C. W. Jerome & Co., Fabius, N.Y.; W. E. Ladd, Stockton, California; R. A. Smith, London, Ont.; Rev. W. E. Scott, Ridgeway, Ont.; Robert Durston, Toronto, Ont.; L. G. Jarvis, Guelph, Ont. and John Fletcher, Toronto, Ont.

Now let all the Minorca breeders come forward with their names and dollars and set the ball rolling. You will, I am sure, publish the names of all who join. We can then have a meeting at the Industrial Exhibition.

Yours, etc., THOMAS A. DUFF.

Toronto, June 27th, 1895.

[We heartily endorse all Mr. Duff says and will be glad to act as Secretary *pro tem*. ED.]



BANTLINGS.

FOLLOWING Toronto's lead we now notice that London has divided the Japanese classes which will doubtless lead to a greatly increased entry.

In our own yards the Bantams are coming on well though we had no early hatched ones. Eggs have proved exceptionally fertile the clear ones not averaging one per cent. From four settings of nine each, Japs, Polish and white Cochins, not one clear egg was the result at testing and all but two hatched.

We have several conditions to thank for this state of affairs; first the breeding fowls were kept active and—mark—*not over-fed*; second the males were young, healthy and in full vigor, and lastly too many eggs were not given to any one hen, the rock many split on.

We were exceedingly fortunate in having several spare Cochin Bantam hens which make the best of incubators and mothers and these stick well to their nests. In the earlier part of the season, we were compelled to use a few large fowls, all of which proved quiet and careful mothers with one exception.

The exception was a Game hen of the Giraffe variety loaned us in an emergency by Monsieur Barbere, Signor Duffo's equestrian partner, and may wild dogs chew the

beard of his great grandfather. She was quiet enough but seemingly c'd not know what to do with her legs. First go off she got tangled up in the nest and broke three eggs; she then seemed to get into a better frame of mind and did no further damage until the chicks began to hatch when she again lost control of her legs and—result, two crushed into jelly. Finally she got seven well out and on their pins, and we were congratulating ourselves that now all was well. After being put out with her chicks she began to cluck, cluck and scratch up seeds and worms and invite her family to the feast. Well and good, that was nice, but the unfortunate youngster that chanced to get behind her had a hard fate. The cluck, cluck and scratch, scratch, would go on until a chick got into the fatal position when out would go that leg and up would go that chick against the fence or into the next lot. That ended the seance, and she had to go, and now a motherly little Japanese is doing dry nursing for seven little orphan chicks in addition to her own large brood. We want no more Juggernaut Game hens with three feet legs, and Monsieur Barbere don't you forget it. We didn't think Mr. Barber with his honest face and innocent expression would impose on a poor, suffering editor like this. However we'll get even. The next time you and your side partner do that bare back donkey act in London, we'll be there and attach a chestnut burr to that flying steed at the place where it is supposed to do the most good and don't you forget *that*.

 TWELVE BANTAMS.

 BY H. S. BABCOCK, PROVIDENCE, R.I.

 VII.

 BLACK ROSE COMB.

THE black rose comb Bantam is, in shape, color and other characteristics, a true Hamburg of diminutive size. That is a good description of the little black beauty, and that is equivalent to saying that it is graceful in shape, with full flowing tail, curved lines throughout its make up, rose comb, beautiful white ear lobes, black plumage full of rich green lustre and a remarkably good layer.

I know not how it is with other strains, but the black Rose-comb, which I used to keep—I do not keep them now—laid a very long egg—an egg of peculiar shape, the shell of which was a chalky white. My strain was very prolific and the birds were small and proved to be dangerous to competitors in the exhibition, as they captured a good many prizes for me.

I have hatched some very diminutive chickens in various breeds and varieties of Bantams, but the smallest chicken I ever hatched was a black Rose-comb. This little fellow was scarcely larger than a bumble bee and seemed bright and smart for a few days, but then he began to decline, and despite of all that I could do for him he died. I would have been willing to give several dollars to have raised him if he had been as small proportionately at maturity as he was when hatched. He, or she, would have been a great curiosity. The death of this chicken from no apparent cause led me to wonder if there was not some limit beyond which a fowl could not be dwarfed. I do not know whether such a limit exists or not, but it seems as if such might be the case, I have heard of a Bantam—either Sebright or Rose-comb, I do not remember which—that weighed only four to six ounces when grown, but this bird was said to have been out of shape, with head disproportionately large and coarse. In breeding Game Bantams I have found that after I get them below about a pound the reachy quality seems to diminish and the characteristics that Game fanciers so highly prize deteriorate. And yet I know of no physical law which would prevent the continued reduction in size without a corresponding impairment of the qualities of our Bantams. This is, to me at least, a very interesting question, and if others are in possession of facts bearing upon it I should be glad to have them send them to this journal for publication or to me that I may use them at some

subsequent time. In breeding black Rose-combs, after securing the desired shape, there is an important problem in producing the most lustrous plumage. People often seem to think that there is no art in breeding black fowls, that all are of a color and one black is just as good as another. This is a great mistake, for there are blacks which are positively ugly and blacks than which few colors are more beautiful. A black to be beautiful must be full of lustre and should indeed be a rich green rather than black. A number of experiments which I have made has satisfied me that a male having some red in his plumage, mated to good rich black hens, will produce much more lustrous chickens than the most lustrous black male that can be obtained. To get this lustre there seems to be a necessity to infuse just a bit of the red into the black, through the blood. If any one doubts this let him try it, keeping the chickens apart from the others or so marking them that he can distinguish them when matured, and if the results he obtains are at all like those which I have obtained he will be satisfied that he has discovered the secret of producing the richest kind of plumage.

Avoid white in the birds. Sometimes there will be white in the first feathers but if this moults out and is replaced by good black the birds are all right, but beware of the white in wings of mature birds. The trouble is that if such birds are bred from them there is danger that it will continually increase in amount, and the strain be ruined. Yet another exception may be made and that is in favor of old birds. A bird which has been sound in color for two years may at its next moult show some white in the plumage. It would be folly to suppose that this white renders the bird less valuable for breeding than it was before its appearance. Yet we all like to have our birds moult sound in color, and if an old hen retains, year after year, her soundness in color, she is to be prized as of special value for breeding purposes.

We allow our Cochin Bantams free range and never had any trouble in getting feathers on them. The question of raising Bantams is not in the size of the yard, but in the feeding. We have seen Games as hard as a nut that, when being raised, were confined in small quarters which were moved from time to time and were given a fine bill of fare; their quarters were kept clean and there lies the secret. We give our Bantams free range because we have it to give; but if any of our readers have a touch of Bantam fever and haven't much land, do not hesitate about breeding them on that account. Proper food and clean quarters will enable you to be in it with the best of them.—*Am. Stock-Keeper.*

THE CARE OF A CHICK.

FROM THE TIME IT EMERGES FROM THE SHELL UNTIL IT IS SIX WEEKS OLD.

Paper read by R. H. Marshall before the Galt Poultry and Pet Stock Association.

IN taking up this subject I will endeavor to give my opinion and experience as I have found it after a number of years' breeding.

In the first place allow me to start when the mother hen is due to hatch. About the 20th day of incubation take a look under the hen, if strong well fertilized eggs, some will be out, raise the mother gently and remove the loose shells if any; don't examine the remaining eggs; refrain from disturbing the hen for at least six hours, then again examine nest and remove any loose shells. At the expiration of 21 days remove the hen and chicks, examine the remaining eggs, clean the nest if any filth exists, put hen back again, place the chicks underneath her as gently as possible, also any eggs that your suspicion may lead you to believe a late chick might emerge from, allow the mother to remain in this position for a full day after the first chick appears. At this time the mother will show signs of leaving the nest. You can then remove the brood to your brooder, if such is used, if not, let them be taken along with the mother to a nice clean coop well littered with chaff. Before placing your hen, dust well with Persian insect powder for fear of insects. This coop should be sparred in front so as to allow the chicks their liberty, but I believe in keeping the hen confined, as she will roam over too much territory to the detriment of a number of the chicks, which might be weak, as in most cases there will be a few in the same brood not just as lively as the rest.

For the first meal give stale bread soaked in sweet milk, be careful the milk is not sour, as sour milk to a young chick will bring on bowel trouble. Sweet milk is strengthening. Give this diet for the first day or two, then broken wheat may be added along with round oat meal. If in confinement, fine gravel or grit in some shape should be placed within easy reach, as a very young chick will look for it, and must have it for the proper mastication of food consumed. Be sure to keep fresh water always on hand. To this diet a little lean cooked meat may be added to advantage. After the first few days feed a variety. If the weather will not permit of outdoor cooping feed as much green food as you can, such as onions chopped fine or cab-

bage or any greens you may have at your disposal, and lean cooked meat three times a week, about $\frac{1}{2}$ lb. to every two dozen chicks; as they mature give more. Don't feed more than they will eat up clean, don't allow feed to lie round and get sour.

If the season will permit of an outdoor coop the chicks will get all the green food they require, the meat may be continued. Some authorities claim green cut bone is just as good, but I have never tried it so have nothing to say regarding its good qualities.

For morning meal, I like wheat bran and shorts, equal parts, scalded and feed as dry as possible, avoid sloppy food of this nature as it will produce bowel trouble. For mid-day meal, take table scraps, such as pieces of bread, potatoes or puddings which may be left after the family have supplied their corporal stoves, place all such in a vessel add enough bran and shorts to take up any soft substance it may contain, being careful to avoid sloppy food. For outside feeding (not indoor feeding) I keep wheat before them all the time. Some of you I know will condemn this, but I claim they won't eat any more than they want at one time, and a young growing chick will make the eating time often and should have ready grain when they want it. I do not believe in keeping soft feed before them all the time, neither out door nor in confinement, and lastly regarding feed, but no less a very essential thing, is good pure water, do not allow it to stand in the sun, have your water in a cool shaded spot within easy reach of your birds. Keep your water dish clean, renew with fresh water three times a day.

I will now take up some diseases that have come under my notice the first will be *Gapes*. I had one case of this a number of years ago. I might give you the symptoms: the bird will act as if something was lodged in its throat it will keep continually extending its neck as if trying to get breath the mouth will be opened wide and gasping, otherwise the bird will look healthy. I treated the case I had successfully with one application by forcing a piece of camphor about the size of half a bean down its throat, a drop or two of turpentine on a small piece of bread applied in the same manner will give the same results. The second, and I might say, the cause of all the rest of the troubles a young chick is exposed to, is *Lice*. In taking up this trouble I might give you a preventative, namely keep your hen well dusted with Persian insect powder, more or less will find its way into the chicks and keep them comparatively clean, but lice will exist where chicks are reared by hens. I will give you a few symptoms that will show themselves where lice are getting in their silent deadly work. You observe a nice big

fellow, he looks a little dumpy, his wings begin to drag, his head is drawn down nearly between his shoulders, he is not looking for his meals, in short he has a very dejected appearance, catch him and look carefully at the back of the head and in nine cases out of ten, with the symptoms as described you will find a number of large lice standing on their heads sucking the life's blood out of your bird.

If your chicks have bowel trouble look for lice or for almost any trouble a young chick is heir to, you look for lice and you find the cause.

A sure cure and a simple one is to take a little fresh lard and apply to the top of the head, under the wings and round the vent, no lice will stay where lard is applied. Another cure is to dust thoroughly with insect powder with the advice contained in this essay. I have no hesitation in saying if properly carried out a chick can be taken from the shell until he is six weeks old with all safety and be fit for the second term which he should put in away from the mother then, as in my opinion at that age they do better and keep cleaner of lice when kept by themselves.

BLACK MINORCAS.

Editor Review:

IT is always pleasant to inform the ignorant when they are genuinely desirous of instruction, and Mr. Wagner's letter in the June number of your valuable paper shows such a wealth of ignorance that I think he is a good subject to practice on. His lack of knowledge extends not only to the subject under discussion, but also to matters about which he might be expected to have a personal knowledge. For example, he says that he made his first exhibit of black Minorcas in the Fall of 1893. By turning to page twenty-nine of the REVIEW of February, 1891, you will see that the Maplewood Columbarry (of which he was then, and still is, the proprietor), won second prize on black Minorca cock at the Ontario Show, held in January of that year in Bowmanville. Lest there should be any error in the report, I have verified this fact by a letter from the Secretary of the Association, which letter is as follows:

"DEAR SIR:—

I take great pleasure in answering your letter. I find that the Show (Ontario) was held from January 5th to 9th, 1891, and that the Maplewood Columbarry entered the following black Minorcas: Cock, scored 90, second prize; Hen, disqualified; Pullet, scored 94; Pullet, scored 90½.

If it is necessary for you to have the book I can forward it by mail.

Yours very truly,

THOMAS A. BROWNE,
Secretary."

Doubtless the *disqualified* hen Mr. Wagner showed was, as he puts it, one of those black pied Pouter pigeons he used to show for black Minorcas. You will thus see, Mr. Editor, that this exhibit of Mr. Wagner's was made some eight months before I exhibited any black Minorcas, my first attempt being in September, 1891.

Mr. Wagner seems to be a curiously forgetful gentleman. The fact actually passed out of his mind that he was not the originator of the sketches to which he signed "C. F. Wagner, Del." Later, he appears to have recalled that these sketches "were pen and ink copies of a Palace winner in 1888," and, from the tone of the letter, one is left to infer that he considers it a joke at his expense, that is to say, a joke to appropriate another man's handiwork and put his name to it as his own. I hope I will be forgiven for differing from Mr. Wagner as to my idea of humor or propriety.

Mr. Wagner states the sketches furnished by him are not his ideals of a Minorca, and that he does not pretend to have any. Why then, does he cause to be printed under the cut of the bird in the March number, the words "Ideal Minorca," and in his advertisement he uses the same head as that called "Wagner's Dream," but has printed under it the word "Perfection?" Surely perfection must be Mr. Wagner's ideal; surely his aim is to breed perfect birds; but should it prove true that he has no ideal, what end does he hope to attain by breeding at all?

Perhaps it is not amiss to recall to you that it was at Mr. Wagner's request that I wrote on this subject. Under these circumstances it would not have been too much to expect from Mr. Wagner some thanks and courteous acknowledgment for my article, even if he thought fit to differ violently from every opinion expressed in it, but in his communication I look in vain for thanks or courtesy.

Mr. Wagner, in his letter, conveys to your readers the meaning that the comb on my ideal Minorca head, and also that upon "Claude," touch the feathers of the neck. In reply to this I merely refer you and your readers to the illustrations, as the opposite is too apparent to require comment. Furthermore, are we not progressive? The English breeders have seen the folly of having such large combs on birds as were shown in 1888 and are now breeding them much smaller.

I fail to see wherein lies the "cunning ad." Mr. Wagner

refers to. Is it a cunning ad. to have such a well-known artist as Mr. Sewell prepare a sketch of one's birds, and then have it published for the benefit of Mr. Wagner and others, as well as for the benefit of myself, in the leading poultry journals of this country? If that illustration is a cunning ad. was not the somewhat recent illustration of "Pure Gold" equally so? I claim there is nothing "cunning" about either illustration, and I merely referred to the drawing to exemplify what I intended to convey. I also give a most emphatic denial to the statement that the comb of the pullet (which, however, was not under consideration), obstructs the sight. That is one of her best points, as it sits nicely on the head and forms such a loop as to leave the sight absolutely unimpaired.

In reply to your query, Mr. Editor, as to size of lobe, it entirely depends upon the size of the bird. A big bird should have a larger lobe than a small one. The size of the lobe on "Claude," who weighed $8\frac{1}{2}$ lbs., was $2\frac{1}{4}$ in. long, by $1\frac{1}{4}$ in. wide.

I regret exceedingly, that in view of the fact of Mr. Wagner having commenced this discussion, he should be the first to write in an unfriendly manner.

Pray accept my thanks for the space.

THOMAS A. DUFF.

Toronto, June 27th, 1895.

PLAIN TALK ON SUCCESSFUL KEEPING OF POULTRY.

BY C. J. DANIELS, TORONTO.

A common, and one of the worst mistakes made with poultry, is overcrowding, that is, putting too many birds in too small a space.

Many reason that if a dozen hens will give their owner a good yearly profit, another dozen would double the profits. This is a big mistake, and one to be avoided if you expect to realize good profits. My advice is, do not put two dozen hens in space that is only large enough for one dozen. With less space they are overcrowded, and with overcrowding comes a loss of tone and vigor, making the fowls more susceptible to disease, vermin more easily finds a foothold, and a great many evils of the poultry yard are traceable to an overcrowded flock. Experience teaches us that health is necessary to the organism of a fowl as it is in the human family. When the organs of a man are deranged he can neither appear to so good advantage nor do anything so

well as when all parts of his physical machinery are intact and properly adjusted, and the same conditions hold good in a fowl.

Your poultry house is another consideration. Let it be cheap and simple in construction but see that it is properly ventilated, avoiding drafts or currents of air near the roosting places. Fowls should have protection from sudden changes of temperature during all seasons of the year. Rain or sleet should not drip through the roof on their bodies, neither should they be allowed to run out in snow, slush or cold rain. Exercise is constantly needed by fowls. They should have dry leaves, chaff, straw, hay or dry dust to scratch in. In feeding I go into the pens and bury the grain in the leaves, etc., with the foot. I have been asked by visitors hundreds of times why I do this. I tell them my birds have to scratch for a living.

Drinking water should always be within reach, and at all times fresh. It will also pay to always feed good sound grain.

Grit of some sort is indispensable as it helps digestion—in fact it is the fowl's teeth.

If fowls have half the care you bestow on your cow or horse they will pay a much larger profit than either the cow or the horse. In fact a little hen getting a reasonable amount of care is the best paying critter on the farm.

DOMINION EXPERIMENTAL FARM.

REPORT OF THE POULTRY MANAGER.

MR. A. G. GILBERT, has sent us a copy of his annual report to the Minister of Agriculture, which as usual is full of good things. The engravings used are not at all up to the mark being mostly old and out of date and have been seen in dozens of publications before. The report is worthy of something better than old time "stock" cuts.

Mr. Gilbert writes: Among the subjects treated, with a view to the winter production of the eggs, are:—1. Different rations and their constituents; 2. Rations within easy reach of the farmer; 3. When and how to feed rations; 4. The essentials necessary to success. The diseases of poultry and their treatment, also receive some attention. One result obtained, worthy of particular note, was that from the careful treatment of the hens during their moult. As the moulting period approached the hens were put on a generous diet, similar to that given for egg production. With a

free run in the fields and the treatment mentioned, the yearling hens, followed by the two-year-old stock, were first over their moult and as a result 538 eggs were had during December, a factor also, but the fine appearance and condition of the stock were too decided to leave any doubt, as to the benefits of care, good feeding, and housing of young stock. As a rule the laying stock of the farmer receive no particular attention at their moult, and most of them are kept until they are too old.

RATIONS.

During the past year careful consideration has been given to, and observation made of, the effect of varied rations in producing eggs in the different seasons. Perhaps closer observation was made during the winter season—the period of artificial existence—with the object of producing eggs, at as little cost as possible at the time when they are highest in price. The substance of these observations will be found in the following pages. It is obvious that the cheaper the cost of production the greater will be the margin of profit, and if we can have this cheap food easily available, so much more beneficial will it be to the farmer and poultryman. It may be like going over old ground to discuss the subject again, but it is one of very great importance, and in which every year makes some important difference and all in the way of advancement. Again, more importance attaches to the subject, because the procuring of a cheap and effective egg-producing food, for winter use, has lately engaged the attention of leading scientists and practical poultrymen in Great Britain and this continent to a greater extent than ever before. Among the leading authorities in England, who have given the subject their attention during the past twelve months is Mr. R. Warrington, a chemist, who says in an article on "poultry and poultry rations" in the *Agricultural Gazette of London*:—"The winter production of eggs and the rearing of early spring chickens, so that the highest prices may be realized in each case, is not made the subject of careful study."

THE HEN AN IMPORTANT FACTOR.

And in order to make good his contention he gives the following figures. He says:—"A good cow may produce in a year six times her weight of milk, with a calf in addition. If we take the cow as weighing 1,000 lbs., we have in the saleable product about 800 lbs. of dry matter, containing 36.8 lbs. nitrogen. Hens of good laying breeds, weighing 1,000 lbs., will in the same time lay 6,000 lbs. of eggs, the contents of which will include 1,404 lbs. of dry matter containing 120 lbs. nitrogen." In corroboration of this statement, Mr. M. G. Gillikins, another authority, shows in a

table prepared by him that taking the Hamburg hen as a layer of 200 eggs per annum, that she will in that number of eggs lay 6.40 times her live weight. He puts the Spanish and Leghorn next with 190 or 150 eggs each, or 4.22 times their weight. "This goes to show," he says, "that in the year of their best production, viz., the second year, the best laying breeds will furnish five to six times their weight in eggs." Thus we have two good authorities arriving at the same conclusions, which go to show that the hen being recognized by leading authorities as an important factor in agriculture. Returning to Mr. Warrington and how to feed the hen, he says: "that since cows milk is much richer in nitrogen than the carcass of an animal, so the food supplied to cows should be of a specially nitrogenous character. The argument," he says, "has still greater weight in the case of the hen, as we have seen that her production in the same time from the same body weight contains three and a quarter times as much nitrogen as that of the cow." It will be interesting to consider some of the best egg producing rations within easy reach of the farmer.

DIFFERENT FOODS.

RATIONS WITHIN EASY REACH OF THE FARMER, THE DAIRYMAN AND MARKET GARDENER.

What should be aimed at, and what has been sought after in the poultry department is to have an effective and cheap ration. What is required is a well balanced ration. Col. T. D. Bliss, in "Hoard's Dairyman," gives the following list of foods and their description:

Highly Nitrogenous Foods.—Skimmed milk, buttermilk, cotton seed cake, linseed meal, rape cake, malt sprouts, brewer's grains, sunflower seeds, hempseed cake, red clover before bloom, young pasture clover, rich pasture grass, lucerne before bloom, flaxseed, peameal.

Foods with an excess of Carbonaceous Matter.—Cream, oat bran, corn bran, wheat middlings, corn, buckwheat grain, oats, barley, rye, carrots, sugar beets, potatoes, corn cobs, ensilage, fodder rye.

The following are given as useful forms of food for poultry:—

Cow's milk, barley middlings, buckwheat bran, barley bran, rye bran, coarse wheat bran, cotton seed, millet, wheat, turnips, cabbage, white clover, red clover, and alsike.

SUITABLE FOR BOTH THE DAIRY COW AND THE HEN.

In the list will be noticed cow's milk, wheat, turnips, red clover, cabbage, wheat bran, buckwheat bran, all of which

are more or less available on a farm, particularly where cows are kept in any number. Indeed, the objection may be raised to the vegetable and some of the other materials named, on the ground that they are intended more for cows than hens. But it is a point in favor of the poultry department, that the food which is best suited to the dairy cow is also the best for the laying hens. As a matter of fact much of the waste of the dairy may be utilized as most suitable food for the hennerly. In the first report issued by the Experimental Farm Poultry Department will be found the statement "that milk dealers and market gardeners are most favorably situated, as regards the disposal of new laid eggs in winter at the highest figures, for they are among the best people every day." That remark, perhaps, more particularly applied to the opportunities for obtaining high prices, but it is gratifying to find that the dairyman is still more favorably situated, inasmuch that the waste material, or at any rate the material he has in abundance in his establishment, is one of the best rations for poultry. The waste of the market gardeners, in the shape of unmarketable vegetables, &c., &c., is suitable as good food for egg production.

COW'S MILK.

As to cow's milk, not long since, I had a letter from a gentleman in the Province of Quebec, who asked, "if milk is a satisfactory food for hens, as he had plenty of it?" He was answered that it was not only good for his laying hens, but one of the best rations to make his young chickens grow rapidly and vigorously. Again, a leading authority on dairying in the same Province wrote me, "If you think milk can be used to good advantage in the poultry department, you will do well by advocating its use, for we are having a large number of dairies started, and there will be plenty of it to spare." As in the previous case, answer was returned that it was one of the best foods for both fowls and chickens.

TOO MUCH GRAIN AND ITS EFFECTS.

The experience of the past seven years goes to show that a great deal too much grain is fed. A farmer writes: "I feed my hens all the grain they can eat and yet they do not lay." It is generally the case that when grain is made the sole feed, the result is fat rather than eggs, and as is frequently stated in our reports, "a fat hen will not be a laying one." No doubt in the case mentioned above the farmer fed altogether too much grain. It must be recognized that fat is a disease in the laying stock. It has been stated in a previous report that the laying stock require, while confined to winter quarters, to be supplied with all the materials necessary to make the shell as well as the egg. In other

words that the hen, in winter quarters must be supplied artificially with what she can pick up for herself while running at large. If grain is constantly fed the first intimation given will be an egg laid with a thin shell. This is a hint that there is not enough egg shell forming material in the ration, or in other words that your ration is not well balanced. It is also noticed that if your stock is composed of Asiatics such as Brahmas, Langshans, Cochins, &c., &c., that they are getting too fat. And if the hint is disregarded, the egg shells will become rapidly thinner, until an egg is laid without any shell at all. Sometimes eggs with thin shells, or without shells, are laid as the result of too much "stimulating," such as the inordinate use of red pepper, or condition powders "warranted to make hens lay."

CLOVER HAY.

Mr. P. H. Jacobs, a chemist and poultry breeder, who has given the subject a good deal of study says:—"One hundred grains of lime are needed to make a strong shell on each egg, and as 1,000 lbs. of wheat or corn contain less than a pound of lime, the hen cannot get the lime she requires to make a strong shell. We actually require a ton of wheat to furnish lime enough for ten dozen egg." The same authority says that there is thirty times as much lime in white clover as there is in the same quantity of wheat, and twenty-eight times as much in red clover. He goes so far as to say that clover will supply "all the lime the hens require." While the latter statement cannot be fully endorsed by experience in our poultry department here can be no doubt that it is an excellent ration while used with others. It is first cut into half inch pieces by clover cutters, and steamed during the night by placing it in a pail and throwing boiling water over it; covering the pail and leaving it until morning. The laying stock in our poultry-house did not take to it when given them by itself, but eat it readily when mixed with shorts and bran, and which without doubt, made a splendid and effective morning ration. While on this subject it might be as well to quote the statements of the late Mr. F. A. Mortimer, of Pottsville, Pa., who kept over 2,000 pure-breed fowls, and who said two years ago in regard to clover "that had he known of the clover hay food for hens, four years ago, (1888), he could have saved \$1,000 and that since he began to feed it that he got more eggs and fewer sick hens." Mr. Mortimer is credited with being one of the most scientific feeders of his day. Another authority, also a chemist and editor says:—"There is no ready substitute for clover hay as a poultry food. It is not only rich in nitrogen, lime, sulphur, phosphoric acid, magnesia and soda, but abounds in potash and carbon. *Balanced with a small quantity of grain, the*

heat and warmth of the body is secured, and the elements of egg production provided. It is easily digested and avoids over-fattening, the *great scourge* of the farmer and poultryman."

Observation has led to the conclusion, that while wheat is undoubtedly the best all round, or best balanced grain food, that if fed entirely alone it produces fat rather than eggs, particularly in the case of heavy breeds, but when balanced with red or white clover hay is a good egg producer, and both have the merit of being easily obtained.

Cow's milk, while not in great abundance on every farm is generally so with dairymen. It is a good food for poultry, skimmed, sour, or in the shape of buttermilk.

Vegetables are in good supply on almost every farm, and particularly so with market gardeners. So we have among our well balanced foods articles of diet within easy reach of the farmer.

CUT GREEN BONES.

Not many years ago the orthodox rations for laying stock were grain, vegetables, gravel to grind up the food and lime to make shell, with an occasional warm mash in the morning. Now the three great factors in egg production are cut green bones, green food with grain in moderate quantity, and exercise. The recognition of the poultry department, as an important revenue-producing branch of agriculture, has led to the study of the best means to produce the egg, or fatten the chicken at the least possible cost, and the result has been the adoption of green bones as the principal factor in egg production, because it is the nearest approach to a perfect food yet put within the reach of the poultry-keeper. It is understood that we are treating of fowls which live an artificial existence for several months of the year and which are expected to produce during that period the high price egg. No hens lay as well, as when running at large and enjoying a thoroughly natural existence in summer. The aim of the true poultry-keeper is, to as nearly approach as possible these natural conditions in the winter housing and treatment of his laying stock, and he who most successfully does so reaps the richest reward. It is evident that by finding out what the egg is composed of and feeding those constituents, that we are more likely to get the egg. The authorities quoted from, tell us that lime, nitrogen and phosphoric acid, are among the important constituents of eggs. From the same authorities we learn that green bones are rich in albumen, phosphoric acid and phosphate of lime; hence their value as an egg producing food, and their cost is a minimum one. At our poultry department the green bones are delivered by the butcher—while serving other customers with meat—at one cent per pound. We are now met with the difficulty as to how the average farmer can pro-

cure this food. If the cost is not too much he can purchase a Canadian-made bone mill for fifteen dollars. The question of cost is no doubt a serious one to the individual farmer, but it can be made comparatively light by a number clubbing together to purchase a small machine and so arranging that it can be used in turn. Or, place a larger one in a creamery or cheese factory, where there is always power and when the farmer brings his milk he can bring the bones and have them cut up. It takes but a short time to cut up enough bones to feed 50 or 100 hens, once a day, or three times per week. It is but reasonable to anticipate that when the demand for this food becomes general the large butchering establishments, or abattoirs, will cut up the waste bone, and supply the farmers with it, at a moderate figure, say one cent per pound. Cut green bones should be fed in the ratio of one pound to every sixteen laying hens.

OTHER EGG-PRODUCING RATIONS.

Should it be difficult or impossible to procure cut green bones, the heads, livers and lights of animals killed on the farm may be used, after being well boiled. In some poultry districts no part of an animal that will make clean, wholesome food is allowed to go to waste. This boiled food may be fed separately or cut up into fine pieces and mixed with ground grains, so as to make a warm morning mash, which should always be fed in a crumbly condition. In such a case, or, indeed in any case, the table and kitchen waste can always be utilized in the warm morning mash. Lime for shell, and the necessary grit, will have to be supplied. The afternoon ration will be a liberal one of grain. Rations might be arranged as follows to meet almost every case.

RATION I.

Morning.—Boiled heads, livers, lights, etc., cut up fine and mixed with shorts, bran, cut clover hay, provender, ground oats, and table and kitchen waste with a modicum of black or red pepper dusted in. Pour boiling water over the whole, and allow it to stand until so cool that it can be held in the hand without difficulty. Feed this in a crumbly state and in such quantity as to barely satisfy, not to gorge. Follow this by throwing a handful of grain in the straw, or other litter on the floor, so as to start the hens scratching.

Noon.—A small quantity of grain, say oats, to be thrown in the floor litter to keep hens busy.

Afternoon.—This last daily ration must be fed before it is too dark, and should be given in such quantity as to fill the crops of the layers, for they have a long night fast before them. Wheat or buckwheat is best.

The foregoing ration ought to suit those who cannot get

cut green bones. In such case lime is best supplied in the shape of ground oyster shells, old mortar, etc.

RATION 2.

Morning.—Cut green bones in quantity of 5 lbs. to every fifteen hens. Follow as in previous ration, by throwing a little grain in the floor litter to keep hens busy.

Noon.—Scatter a little more grain to keep hens going.

Afternoon.—Send layers to roost with crops full of wheat or buckwheat.

RATION 3.

Morning.—Ground corn, ground oats, bran in proportion of 10 lbs. each; linseed meal 1 lb.; salt 1 oz. Mix this intimately and put 1 quart of it into a bucketful of dry cut clover hay, or any kind of cut hay and mix with boiling water. This is calculated for thirty laying hens; enlarge to suit a greater number.

Noon.—As directed in previous rations. Keep the hens active, but do not overfeed at this time.

Afternoon.—Give a liberal grain ration, for reasons given.

RATION 4.

Morning.—Two quarts bran; one quart middlings; one quart cornmeal; half pint oil meal. Mix four pounds of this with 16 lbs. small potatoes boiled and a small quantity of ground bone. Dust a little pepper in the mess. The foregoing will be enough for 100 hens.

Noon and Afternoon.—Rations as in previous ones.

RATION 5.

Morning.—Small potatoes, turnips or other vegetables boiled and mixed with one quart of cornmeal and the same quantity of bran, to which may be added the table and kitchen waste, and a couple of handfuls of coarse sand, or fine gravel with a small quantity of ground bone. The whole fed warm for a morning ration offers variety.

Noon and Afternoon.—Rations as directed.

RATION 6.

Morning.—A correspondent gives the following in *Farm-Poultry* as a good winter egg producing ration: 3 lbs oatmeal, 1 lb. dried blood, 1 lb. cut green bone, 4 lbs. pea-meal, 1 quart skimmed milk. Enough for forty or fifty hens.

Noon and Afternoon.—Rations as directed.

Objection may be made to the last named, on the ground of expense, but there is plenty of room for choice in the other rations named.

THE OTHER ESSENTIALS NECESSARY.

Green Food.—In every case vegetable or green food of some kind should be supplied. In previous reports the hanging of a cabbage from the ceiling of the hen house to within three feet of the floor has been recommended as an excellent means of furnishing green food and exercise. And it is certainly so. Mr. D. J. Lambert, an authority on poultry matters, says:—“Green food, as has been often said, is too sparingly given. The majority of poultry-keepers feed too much grain. Less grain and more grass should be the watchword. Cabbage, turnips, cut clover, onions or anything of a vegetable nature, cheapens the cost of feeding and tends to keep the fowls more healthy, and that means increased egg production, and consequently more profit.” It is a fact well known to poultrymen that hens and chickens enjoying free range will fill their crops nearly half full with grass and greens every day.

Grit is another important essential. It is actually the hen's teeth. It should be always before the fowls, and may be supplied in the shape of gravel, sifted coal ashes, crushed oyster shells, broken stone or clear grit. There are several forms of grit substances sold for the use of poultrymen, all of which are good. Oyster shells are good for grit, also supplying lime for the egg shells.

Exercise is another important factor, as has been already remarked, in making hens lay in winter. To keep the hens constantly active requires skilful managing and experience. It is not so easy as may seem, at first glance. It is best secured by throwing the grain among straw, litter or dry earth (which should be on the floor of the poultry-house) and feeding it as directed in ration No. 1. If dry earth or sand is used on the floor instead of straw or other dry litter, the earth or sand must be raked over the grain, so as to keep the fowls busy searching for it. In report of last year a diagram of a building and shed attached for the laying stock to scratch in was given with full instructions as to the best means of keeping the laying stock in activity.

The Drinking Water.—It has been urged in previous reports to have the temperature of the building, if at all possible, at such a figure (34° or 40°) that the water will not freeze. And where it does freeze the chill should be taken off before the layers are permitted to drink it. This should be done at least three or four times daily. A constant supply of pure water is an important essential.

A Comfortable House is another requisite to egg production. Experiment has proved that where the layers are kept in cold habitations, that the food instead of going into eggs will be drawn upon to supply animal heat. Experiment has also led to the conclusion that if the hens are

kept comfortable at night so much the better will results be. A room with a low roof or a screen, to be let down over the roosting place at night, might utilize the warmth from the bodies of the fowls. In some recently constructed poultry-houses, the room for roosting in, and that for feeding and exercising in, are separate apartments.

THE SCIENCE OF FEEDING.

The feeding of the laying stock, so as to ensure the best results at as little cost as possible, is a science. It has to be studied, and to be successfully practiced an apprenticeship has to be served, in order to gain the experience necessary. Hence you find intending poultry keepers in many cases taking positions in large poultry establishments in order to gain the knowledge or experience necessary to success. By the experimental farm system the best methods are found out, and the experience gained is conveyed to the farmers in the shape of reports and bulletins, so saving time and expense. The rations may be of the very best, and the good effect lost by a lack of knowledge how to feed them properly. The experience of the last eight years leads to the endorsement of the following, "On the proper method of feeding fowls," by Mr. A. F. Hunter, one of the leading poultry men of the day, who says in *Farm-Poultry*: A fowl should have an empty crop in the morning and a full one at night, and she should not fill it at one or two railway-restaurant-style of feeds, but should fill it a little at a time and be kept at work all day filling it. The *work* is as essential as the food itself. Next in importance to a well balanced ration is bodily activity, and that bodily activity is best promoted by keeping the hen hunting for her food." And then follows instructions as to proper feeding similar to those given in my reports of 1889, 1890 and 1891. Concluding, Mr. Hunter says: The very best way to feed fowls in winter, is to give them for breakfast a light feed of mash (as described). An hour later scatter three or four handfuls of oats or barley, (in the straw litter) to start them scratching; about eleven o'clock three or four more handfuls of barley or oats and more scratching; about one o'clock a very light feed of wheat, to be scratched for, and then enough to fill up the crop for last feed. Keep the hen a little hungry, keep her wanting just a little more, and she will work and sing and lay eggs."

The subject of rations and the proper way to feed them has been treated very fully in the foregoing pages for the reason that numerous letters have been received during the past year, as to what and how to feed and the proper quantity to give. This, notwithstanding the information fully given in previous reports, which have been extensively cir-

culated and read, and which doubtless goes to show the greatly increased demand there is for information on the subject.

THE EXPERIMENTAL FARM RATIIONS.

WHAT WAS FED DURING THE PAST YEAR AND THE RESULT.

During the winter of 1893 beginning from the month of January, the daily rations were mixed as follows:—

Morning Rations.—Warm mash composed of ground wheat, ground barley, ground oats, ground rye, etc., bran. Occasionally small potatoes were boiled, or cut clover hay steamed and mixed with the mash, so as to have variety. When cut green bones were fed for the morning ration the mash was not given.

Noon.—Light feed of oats scattered among the floor litter. Sufficient grain only to keep they layers busy.

Afternoon.—Wheat or buckwheat were given in quantity to fill the crops of the layers, and feed early enough so as to have the fowls search for it. When cut green bone was given for last ration, grain was fed afterwards to fill up the crops.

Vegetables in the shape of mangels, carrots, turnips and cabbage were all, or most of the time, before the layers, as were grit, ground oyster shells, gravel, coal ashes, etc. etc. Pure drink water and dust baths were also supplied.

THE LAYING STOCK.

The laying stock to which the above mentioned rations were fed, were composed of the following:—

	Hens.	Pullets.
Barred Plymouth Rocks.....	9	13
White ".....	..	18
Houdans.....	6	5
Silver Laced Wyandottes.....	4	6
White ".....	..	7
Langshans.....	1	8
Light Brahmas.....	9	..
White Leghorns.....	11	..
Red Caps.....	5	6
Black Minorcas.....	9	7
Langshan B., Minorca cross.....	..	10
W. Leghorn, Brahma cross.....	5	3
	<u>59</u>	<u>83</u>

The following were used as breeding stock, and were not supposed to be stimulated to lay:—

BREEDING STOCK.

	Hens.	Pullets.
Light Brahmas.....	5	..
Langshans.....	7	..

Andalusians	11	..
Black Minorcas.....	5	..
White Leghorns.....	6	..
Golden Polands.....	5	..
Colored Dorkings.....	4	..
	—	—
	43	..

COMPOSITION OF THE LAYING STOCK.

The number of layers is apparently 142, but it should be understood that among them were a number of old hens and late hatched pullets. The former would not lay as well as a hen in her prime, and the later would be late in starting. As stated in previous reports, the old hens, particularly those of the Asiatic breeds, are not money makers during winter, for they are late in moulting, and before beginning to lay eat much of the profit they afterwards make. The late hatched pullets become apparently stunted, for the time being, by the cold. The old hens are useful as steady sitters and careful mothers, but where reliable incubators are used, they are not required. By careful observation and calculation, there were 75 or 80 steady layers, they gave the following number of eggs in the months named:—

January.....	777
February	791
March.....	1,644

PREPARING FOR SPRING.

Towards the middle of the last named month the breeding stock was mated, and by the end of the month, the eggs from them were kept for hatching purposes and sold for \$1 per setting. The combined yield for the following month was:—

April.....	1,939
May.....	1,650
June.....	1,066

As soon as the weather permitted, the fowls were allowed to the outside runs, where they had grass, gravel and sand.

At the end of June, the breeding season was over and the hens were allowed to run at large in the fields in rear of the poultry houses, the male birds being first removed from the breeding pens and placed in pens by themselves.

TOTAL EGG YIELD FOR THE YEAR.

The total egg yield for the year, according to months, was as follows:

January.....	777
February.....	791
March.....	1644
April.....	1939
May.....	1650
June.....	1066
July.....	941
August.....	386
September.....	236
October.....	161
November.....	114
December.....	538

SOME LESSONS FROM THE FOREGOING.

It will be noticed from the foregoing figures that during the moulting period of September, October and November, there were few eggs laid, for the reason that the hens were comparatively none-productive. During the moulting season the hens were well fed and cared for, as well as having the run of the fields. The result was the great majority of the yearling and two year old hens were in fine condition and ready for winter laying by the end of November. It should be remembered by farmers that their moulting hens require the same care as do the layers in winter. During the moulting period, the food, which at another time goes into eggs, is drawn upon to supply the rapidly growing feathers. The hen which has been a regular layer all the previous winter will take a rest during her moult and she will have well earned that rest. Another lesson to be learned is that in order to keep up the egg supply during the period of non-production, scarcity and higher prices, that early hatched pullets are necessary. The difficulty in getting early sitters is no doubt the great drawback, but incubators are now more extensively used for the purpose, and it is only a question of time when they will be in general use.

THE BEST LAYERS.

As in previous years the black Minorcas, Andalusians, Plymouth Rocks, Langshans, Brahmas, and Wyandottes, proved themselves the best layers. The white Leghorn, Brahma, and the Langshan-black Minorca crosses made excellent layers.

LARGE EGGS.

It is worthy of note that the black Minorcas, Langshans, and light Brahmas, not only laid well during the winter, but laid very large eggs. The month of December last year (1893), was a particularly cold one, but the breeds named did not seem to be so much affected by it as were the late hatched pullets. On the 16th January four or five dozen of

black Minorca eggs were weighed, when a number were found to go six to a pound, and all went seven to the pound. Eight dozen Brahma and Langshan eggs were also weighed, and the great majority went seven to a pound. The eggs were shown to many visitors as a sample of what could be done by the farmers of the country in supplying the demand for large eggs in any of the markets offering.

LAYERS OF LARGE WHITE EGGS.

Black Minorcas.—This is one of the leading breeds of large white egg layers, perhaps the greatest layer of large eggs known. They are rapidly taking the place of the black Spanish, as they are larger and hardier, the males making fair table fowls. They are good winter layers when properly housed and fed as all fowls should be. The fowls and chickens are hardy, the latter growing rapidly. Females lay 130 and 140 eggs, or more, per annum, and eggs frequently weigh 6, mostly all 7, to a pound. The standard weight of the cock must be 8 pounds; hen, 6½ pounds; pullet, 5½ pounds; cockerel, 6½ pounds. The laying stock require to be kept busy in winter quarters and liberally supplied with egg shell making material. The females are non-setters. The hens of the white variety are also prolific layers.

White Leghorns.—One of the best layers at all seasons of a large white egg. Some strains lay larger eggs than otherst They are non-setters, hardy, and mature rapidly, and will lay well in winter, in a moderately comfortable house. The chickens thrive well and feather rapidly, and the hens lay a white egg of large size. The pullets lay at five or six months, or sooner if hatched early. The brown and black Leghorns are also great layers. They are good fowls for farmers when kept with a breed of sitters. They are good flyers, like all the Spanish family. There is no standard weight for this breed. The eggs from hens of a large egg laying strain weigh 2¼ ounces each; per dozen 1 pound 10 ounces to 1 pound 11 ounces. Like black Minorcas, the layers require to be kept in activity and well supplied with lime to make shell.

Andalusians.—Another breed of the Spanish type and as a breed of layers rivalling the Leghorns. They are likely to occupy a high position among poultry fanciers on account of their superior laying merits. They lay well in winter, when looked after, and are hardy quick-growing chickens. They do not breed true to color or markings in every case; but that is a matter of secondary importance to those who wish to keep them for their laying qualities. Like the black Spanish they are not heavy weights, and

in consequence are not so good for table use as the heavier breeds. Pullets lay when six months old. Hens lay large white eggs, the weights of which are often 2¼ ounces each, and 1 pound 11 ounces to 1 pound 13 ounces per dozen. When closely confined they require to be kept busy.

Houdans.—The females are layers of large white eggs. They do better when permitted extensive range. Chickens are hardy, grow rapidly, and are great foragers, but owing to large crest on head are apt to fall an easy prey to hawks, etc. They have the five toes of the Dorking. The cockerels are good for table use, the flesh being white and of superior quality. They often make one pound per month in weight. Hens' eggs weigh 2½ ounces each and a little more when fowls have unlimited run; per dozen, 1 lb. 12 oz. to 1 lb. 15 oz. The Standard calls for the following weights: Cock, 7 lbs.; hen, 6 lbs.; cockerel, 6 lbs.; pullet, 5 lbs. The females are non-sitters.

Other breeds.—The following breeds which have not been tried at the Experimental Farm lay large white eggs: Black Spanish and white-crested black Polish.

LAYERS OF DARK OR BROWN COLORED EGGS.

Light Brahmas.—They are layers of large richly colored eggs. They are a well-known and long established breed, with many friends and admirers, and grow to a large size and great weight, but take time to do so. They have large frames, and a good deal of feed is required to put flesh on them, but they are very hardy, both as chickens and fowls. They are quiet and bear confinement well. Females are fair layers of eggs of good size, but rather clumsy for early setters (when egg-shells are likely to be thin), and apt to be clumsy as mothers. After seven or eight months of age the males make good table fowls. The pullets lay at about seven months of age. The laying stock in winter quarters must be kept in exercise, and must not be overfed or they will become too fat to lay. Hens' eggs weigh 2¼ ounces to 2½ ounces each; per dozen, 1 pound 12 ounces to 1 pound 13 ounces. The weights demanded by the Standard are: cock, 12 pounds; hen, 9½ pounds; cockerel, 10 pounds; pullets, 8 pounds. They are classified as Asiatics, The dark Brahmas are also a meritorious variety.

Langshans.—These are a favorite breed of great merit, and are classed as Asiatics. The hens lay a large egg of a rich brown color, and many of them. Some eggs laid by Langshan hens in the poultry department of the Central Experimental Farm during last winter weighed 7 to 1 pound. The cockerels put on flesh at the rate of 1 pound per month, and as their flesh is very white they make good market chickens. Both fowls and chickens are very hardy.

The Standard weights are : cock, $9\frac{1}{2}$ pounds ; hen, 7 pounds ; cockerel, 8 pounds ; pullet, 6 pounds. Some of the male birds grow to a large size, and weigh between a 11 and 12 pounds.

Buff Cochins.—This is another of the Asiatic breeds with a large number of friends. Some strains lay much larger eggs than others. Like all the other breeds of this class, they require to be kept active when in close confinement. The eggs from the hens of some strains weigh $2\frac{1}{4}$ ounces each, but all are of a rich dark colour. The chickens are hardy and grow well, showing about the same development as those of the light Brahmans. The Standard weights are : cock, 11 pounds ; hen, $8\frac{1}{2}$ pounds ; cockerel, 9 pounds ; pullet, 7 pounds. The other varieties of this breed are white, black and partridge Cochins, the characteristics of which are about the same as the buff. The cockerels put on flesh at the rate of about 1 pound per month after first month. The pullets lay at about seven months of age. These are perhaps a little slow for farmers, but may make a good cross. They are not now kept at the Experimental Farm for the reason that they have not been profitable as layers.

Other Breeds.—The following breeds not yet tried at the Experimental Farm are also layers of large dark eggs. Black Cochins, partridge Cochins, and white Cochins.

BREEDS GOOD FOR EGGS AND MARKET.

Barred Plymouth Rocks.—This breed is one of the most popular on the continent as an all round fowl for the farmer, and deservedly so. The females mature quickly and lay well in winter, with moderate protection and proper feeding. The eggs are not quite so large as those of the Minorca or Brahma, although of good marketable size for home and United States markets. Some strains lay larger eggs than others. The chickens are hardy and vigorous. The cockerels have put on more flesh per month, with the same rate, than any other tried at the Central Experimental Farm in six years. After the first month or six weeks the cockerels, with proper care and pushing, ought and will put on flesh at the rate of one pound and a quarter per month. A farmer ought, with a little trouble, to be able to put on the market Plymouth Rock cockerels weighing eight pounds per pair, or four pounds each, at the end of four months. What an improvement there would be in the weight and quality of the chickens sold on the markets of the cities if the majority of farmers bred Plymouth Rocks instead of the "scrubs" usually seen about the barnyards? There are three varieties of this popular breed, viz., the barred, white and buff. The latter is a new comer.

White Plymouth Rocks.—This is a variety lately introduced but equally popular. All the good points of the latter are claimed for these new comers, with the addition of greater size and whiter appearance of flesh, owing to the absence of the dark pin feathers. They are hardy, rapid growers as chickens, and the pullets are excellent layers. At the Experimental Farm last summer (1893) a cockerel hatched on the 21st May weighed six pounds on the 21st September following. The pullets made large and handsome fowls by the middle of winter, and began to lay in six months. The Standard calls for the following weights, viz.: cock, $9\frac{1}{2}$ pounds ; hen, $7\frac{1}{2}$ pounds ; cockerel, 8 pounds ; pullet, 6 pounds.

White Wyandottes.—This is a very promising variety of this popular breed. They have all the good points of the silver laced, with the advantage of dressing better for market on account of the white pin feathers not showing so darkly as in the case of the silver laced or golden varieties. The chicks are hardy and grow well. The pullets begin to lay at five and a half to six months, and are good layers of a medium-sized egg. The cockerels mature early and make good market chickens. A cockerel hatched on 30th May weighed on 2nd of October following 4 lbs.

Dorkings.—The Dorkings are, perhaps, one of the best known and appreciated breeds extant, on account of their superior table qualities. They are a breed that should be sought for by all who wish to put fowls of superior flesh properties on the market. There are three varieties in this country, viz., the coloured, silver grey and white. These all possess the same excellent qualities for the table, and the females are fair layers of an egg of good size. Mr. Allan Bogue, the well-known poultry-breeder of London, Ont., speaks very highly of them, and says they ought to be much more extensively bred for market.

(To be Continued.)

PUBLISHERS' NOTES

Mr. J. H. Cayford, Box 1,100, Montreal, is our Agent and Correspondent for the Province of Quebec. Any correspondence relating to subscriptions or advertising may be addressed to him.

SEND A STAMP FOR REPLY.

We receive annually some hundreds of postal cards asking for information not of a business nature. Each reply costs us a three cent stamp not to mention the trouble. The latter we don't mind but don't you think the enquirer should bear the former expense? We do and no enquiries not relating strictly to business will in future be answered unless such is attended to.

AN EASY WAY TO GET FELCH'S GREAT BOOK.

To any one sending us four new subscribers with \$4 we will send a copy of "Poultry Culture" by I. K. Felch, value \$1.50 a book no fancier should be without. We have lots of these books so don't be afraid the supply will run out. Send four new Subscribers with \$4 and get a **NEW STANDARD free.**

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If you send us the name of a new subscriber together with \$1.50 we will extend your own subscription for one year as well as send REVIEW to the new name for one year. This makes it but seventy-five cents each. The only condition we make is that the name of the subscriber be a new one and not a renewal.

The Canadian Poultry Review

IS PUBLISHED AT

Toronto, Ontario, Canada.

BY H. B. DONOVAN.

Terms—\$1.00 per Year, Payable in Advance.

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Good Quality and Low Prices—Eggs from twenty varieties of high classed land and water fowl, eggs \$1 per setting, send for circular. W W Reid, Ayr, Ont. 196

For Sale—Eggs from S C Brown Leghorns, my stock are prize winners or from prize winners and should get the same, \$1.50 per 13. Address J R Morrison, Carleton Place, Ont. 795

L. G. Pequegnat, New Hamburg, Ont., breeder of Partridge Cochins, Barred and White Rocks, Houdans, Black Leghorns, B Minorcas, Pekin Bantams. Stock at all times, eggs in season. Send stamp for reply and mention REVIEW. 11

Jacobins—One red and one yellow cock \$4 each, pair grand whites \$15, pair extra reds \$15, red cock and black hen \$8, pair white Pouters \$8, sure value. Chas Massie, Port Hope, Ont. 296

White Wyandottes For Sale—2nd prize cockerel at our last show and several good one and two year old hens, a grand breeding pen or will sell separately, early chicks for the fall shows will be ready for shipping in August. Chas Massie, Box 202, Port Hope, Ont. 995

C. J. Daniels, 221 River St, Toronto, breeder of 14 varieties Standard Fowls. Dealer in all kinds of poultry supplies, if you are in want of anything in poultry line drop me a card. 11

Notice—All my prize winners are for sale at a bargain and must be sold at once, Black Langshans, Buff Cochins, White and Golden Polands, Houdans, White Rocks, White Wyandottes, White Minorcas, Black Leghorns and Pekin Ducks; also one 300 egg size Reliable Incubator and Brooder for sale cheap. Everything must be sold at once. Geo Karn, Guelph, Ont.

For Sale—Homers, first-class blue, 500 mile stock birds for sale, for further particulars, write to W S Perrin, Newmarket, Ont.

New Standard—Now ready, send one dollar and get one. Address, Canadian Poultry Review, Toronto

Meyers' Royal Poultry Spice 25c per two lb. package. H. B. Donovan, Toronto.

Dr. Mallory, breeder of single-combed Brown Leghorns; score, cockerel 95, hens 91 to 94; White Wyandottes, score 93 to 95, all prize winners. Eggs from the above \$2 to \$3 per setting. Colborne, Ont. 895

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Hints to Beginners (Pigeons) by F. M. Gilbert, new edition, 1894, revised with additional chapters. A most practical, timely and comprehensive work. Indispensable to the amateur. Price paper 50c. Address, H. B. Donovan, Toronto.

A. Samuels, 82 Bennet St, Buffalo, N.Y., breeder and importer of Jacobins, Wing Turbits, blue Wing Turbits with white bars; Barbs, Owls, Fantails, Helms, Mooreheads, Trumpeters, Magpies, Swallows, Dragons, Starlings, Baldhead Tumblers, Solid Tumblers, Frillback, Banded Homing Pigeons. Prices reasonable, satisfaction guaranteed. Inclose stamp for price list. 1095

Pigeons for Sale—Having made an extensive purchase of fancy pigeons, I am offering same at greatly reduced rates; all reliable stock, guaranteed as represented. Pair Blordinettes \$3 50, pair black bald Tumblers \$2, pair black Nuns \$2.50, pair Archangels \$2 50, pair white Pouters \$4, beauties; pair A1 Dragons, cost \$25, for \$5; Jacks, reds, yellows, whites, blacks, \$4 pair; Homers, 4 pairs \$2; blue bald cock \$1.25, red Tumbler hen \$1, fine Owl cock \$1.50, red Jack cock \$2. Special price for the lot. This is genuine. Stamp. Robert Burroughes, 24 Phoebe St., Toronto.