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THE CANADIAN BEE JOURNAL

AND POUSTRY WEEKLY.

"THE GREATEST POSSIBLE GOOD TO THE GREATEST POSSIBLE NUMBER."

VOL. V. No. 11 BEETON, ONT., JUNE 5, 1889. WHOLE No. 219

THE CANADIAN BEE JOURNAL & POUSTRY WEEKLY.

PUBLISHERS' NOTES.

ONE DOLLAR PER ANNUM IN ADVANCE.

ADVERTISING RATES.

All advertisements will be inserted at the following rates

TRANSIENT ADVERTISEMENTS.

10 cents per line for the first insertion, and 5 cents per line for each subsequent insertion.

Space measured by a scale of solid nonpareil of which there are twelve lines to the inch, and about nine words to each line.

STANDING ADVERTISEMENTS.

	3 MOS.	6 MOS.	12 MOS.
6 lines and under.....	2.50	4.00	6.00
One inch.....	\$4.0	\$6.00	\$10.00
Two inches.....	5.50	9.00	15.00
Three inches.....	7.00	12.00	19.00
Four inches.....	9.00	15.00	25.00
Six inches.....	12.00	19.00	30.00
Eight inches—1 Col.....	15.00	25.00	40.00
Sixteen inches—1 page.....	25.00	40.00	75.00

STRICTLY CASH IN ADVANCE

Contract advertisements may be changed to suit the seasons. Transient advertisements inserted till forbid and charged accordingly.

EXCHANGE & MART.

Advertisements for this Department will be inserted at the uniform rate of 25 CENTS each insertion—not to exceed five lines—and 5 cents each additional line each insertion. If you desire your advt. in this column, be particular to mention the fact, else they will be inserted in our regular advertising columns. This column is especially intended for those who have bees, poultry, eggs, or other goods for exchange for something else and for the purpose of advertising bees, honey, poultry, etc., for sale. Cash must accompany advt.

BREEDERS' DIRECTORY.

\$1.00, one line; \$1.50, two lines; \$2.00, three lines per annum.

THE D. A. JONES CO., LD., BEETON,

We will always be glad to forward sample copies to those desiring such.

The CANADIAN BEE JOURNAL will be continued to each address until otherwise ordered, and all arrears paid.

Subscriptions are always acknowledged on the wrapper label as soon as possible after receipt

American Currency, stamps, Post Office orders, and New York and Chicago (par) drafts accepted at par in payment of subscription and advertising accounts.

We can supply Binders for the JOURNAL 35 cents each, post paid, with name printed on the back in Gold letters.

Subscription Price, \$1.00 per Annum. Postage free for Canada and the United States; to England, Germany, etc, 20 cents per year extra; and to all countries not in the postal Union, \$1.00

The number on each wrapper or address-label will show the expiring number of your subscription, and by comparing this with the Whole No. on the JOURNAL you can ascertain your exact standing.

Communications on any subject of interest to the Bee-keeping fraternity are always welcome, and are solicited.

Beginners will find our Query Department of much value. All questions will be answered by the most practical men. Questions solicited.

When sending in anything intended for the JOURNAL do not mix it up with a business communication. Use different sheets of paper. Both may, however be enclosed in the same envelope.

Reports from subscribers are always welcome. They assist greatly in making the JOURNAL interesting. If any particular system of management has contributed to your success, and you are willing that your neighbors should know it, tell them through the medium of the JOURNAL.

ERRORS.—We make them: so does every one, and we will cheerfully correct them if you write us. Try to write us good naturedly, but if you cannot, then write to us anyway. Do not complain to any one else or let it pass. We want an early opportunity to make right any injustice we may do.

CLUBBING RATES

THE CANADIAN BEE JOURNAL & POUSTRY WEEKLY,

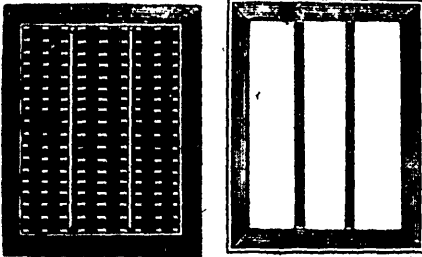
AND "Gleanings," semi-monthly.....	\$1.75
"American Bee Journal," weekly.....	1.75
"American Apiculturist," monthly.....	1.75
"Bee-Keeper's Guide," monthly.....	1.40
"The Bee-Hive".....	1.25
"Beekeepers' Review".....	1.40
"Beekeepers' Advance".....	1.40
"Queen-Breeders' Journal".....	1.00

Super Arrangements.

We have yet to hear of a single complaint in regard to our new

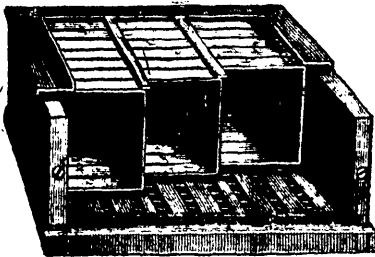
REVERSIBLE HONEY-BOARD AND SUPER REVERSER,

And thousands of them were in use last season.



SHOWING REVERSIBLE HONEY-BOARD AND REVERSER

We make them to suit any hive, but keep in stock only the sizes to fit the Jones Single Walled, Combination and Langstroth (13x20 in. outside measure) hives.



IN THIS ENGRAVING THE SECTIONS ARE SHOWN AS RESTING ON THE HONEY-BOARD WITH THE REVERSER COVERING THE JOINTS OF THE SECTIONS.

For prices apply for our catalogue.

THE D. A. JONES CO., LTD., Beeton Ont.

WHO WANTS BEES.

100 COLONIES for sale or exchange for anything I can use. All kinds of bee supplies for sale also queens for sale in season.

JAMES ARMSTRONG,
CHEAPSIDE, ONT.

FOR SALE.

OUTFITS for making Two-Ounce Shaving Sections, consisting of one Form and a Sample Frame of 20 sections made up, ready to lift off the form; also enough varnish to make 1,000 Sections. All packed and delivered at the Express Office, for \$2.50.

Address **W. HARMER,**
411 Eighth St., MANISTEE, MICH.

In responding to this advt. mention the C. B. J.

BEE SUPPLIES.

Single and double-walled Hives, Frames, sections, etc., at lowest prices. Quality and workmanship of the best. Send for price list to

W. A. CHRYSLER, Chatham, Ont., (Box 350).

BROTHER BEE-KEEPERS

If you wish any supplies or Fdn. made, please drop me a card before you ship, as I am not certain that I can get it out for you. Only brood fdu. made this season. A few Hives, Supers, Brood Frames, and Bees for sale. "Empire State" Potatoes for sale.

WILL ELLIS,
St. David's, Ont.

A CHOICE

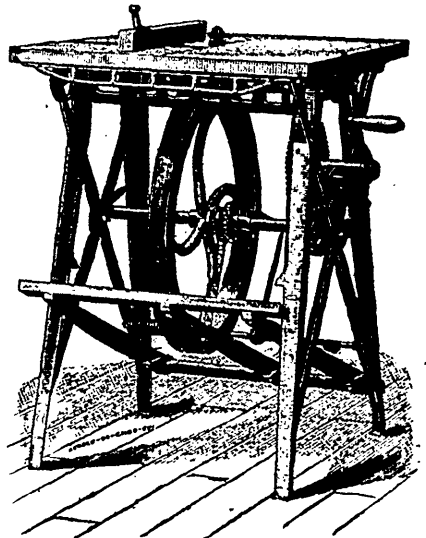
TESTED QUEEN

For \$1. For further particulars, see the BEE-KEEPERS' REVIEW for May. This number discusses "The Management and Control of Increase" It will be sent free and with it will be sent the May and July numbers for 1888. Price of the REVIEW 50c a year; back No.'s furnished. "The Production of Comb Honey" is a neat little book of 45 pages. Price 25c. This and the REVIEW one year for 65 cents. The book and the REVIEW two years for \$1. Stamps taken, either U. S. and Canadian.

W. Z. HUTCHINSON

613 Wood Street, Flint, Mich.

Barnes Foot Power Machinery.



See advertisement, on another page. We have just arranged for the sale of these machines, and we can quote a price F.O.B. cars at Toronto (duty and freight paid thereto). On application we will forward catalogue and pricelist free.

THE D. A. JONES CO., LTD
Beeton Ont



"THE GREATEST POSSIBLE GOOD TO THE GREATEST POSSIBLE NUMBER."

VOL. V. No. II

BEETON, ONT., JUNE 5 1889.

WHOLE No. 219

EDITORIAL

AN EXPLANATION WANTED.

IN the weekly market quotations of the Catholic Chronicle, published in Montreal, there appears each week under the heading of "Country Produce" the following paragraph:

HONEY.—The market rules quiet and steady at 14c to 15c per lb. for Western white clover in comb, extracted selling at 10½c to 12c in pails, and imitation honey at 9c to 10c.

We do not know from what the publishers derive their information, and in the best interests of the pursuit which it is our privilege to follow and foster we must ask them to furnish us with the names of their correspondents, also for a sample of the honey which they claim to be "imitation."

Our attention has been called to this by Mr. J. Foot, of Halifax, himself a thorough bee-keeper. May be that some such vile stuff was put in the market in Montreal, and so long as they call it by its proper name, viz., "imitation honey," we cannot much complain; yet we have some curiosity to see a sample of the stuff and taste it, if it be fit to taste, and are making an effort to obtain some.

As will be noticed by reference to our advertising columns we have transferred the privilege of selling individual rights

for the manufacture of the "Heddon Hive" to the original patentee, Mr. Jas. Heddon to whom all applications must in future be made.

For the CANADIAN BEE JOURNAL.

TRASH DESIGNATED HONEY.

SEND you to-day a sample of what was offered here by a gentleman dealer as Californian honey. Such nasty stuff should by no means be offered to any customer as "money" but should be termed "Honey Guano" and sold as fertiliser. I hold that the importation and sale of such stuff under the name of "honey", is sure to destroy our honey market and in the interest of both the Canadian producer and consumer, I call upon you Mr. Editor to give that stuff a close examination, and make its merits—if it has any other than what I assigned to it known through the C. B. J.

E. SCHULZ.

Kilworthy, April 26th, 1889.

The sample of honey which you sent us is without doubt the worst that we have ever examined.

We do not know that we should call it a sample of honey because it is as foreign from what we would term honey as the east is from the west.

We firmly believe that it is a slight mixture of some poor honey with some other material, it might be guano or any other vile stuff that you could imagine. The offering of such material for sale, and calling it honey should be a criminal offence and we think it the duty of

our bee-keeping friends to assist us in tracing the source of the vile stuff.

When we were in London, England, about two years ago we were shown a sample of stuff called honey which it was told us had lain one or two years in the brokers hands notwithstanding all efforts they had made to sell it.

A portion of the consignment had been sold for the manufacture of axle-grease, but we are prepared to say that this is not fit even for axle-grease. The smell of it is enough to disgust anyone.

The placing of such trash upon the Canadian market would have a very injurious effect on our honey consumption. We think our adulteration act should be brought into use as soon as it is learned where and who is offering it for sale, have it confiscated and the vendors severely punished.

We are sure that no bee-keeper or one who has the good of bee-keepers at heart would for a moment attempt to injure our business by offering such stuff as this for sale.

We think calling it honey is libellous and the parties doing so should be punished for libel aside from adulteration.

For the CANADIAN BEE JOURNAL.

REDIVIVUS.

IN your issue of Feb. 13th, "Observer" (who is he?) kindly referred to me as follows:— "Now that Rev. W. F. Clarke is President of the Provincial bee-keepers, he will surely use his pen more freely than of late. I miss his always readable and interesting articles."

Ever since the appearance of the foregoing paragraph it has been on mind to write something for the C. B. J., both by way of explanation as to my comparative silence during the past year or so, and response to "Observer's" appreciative invitation. But I have only now got settled down to the task. In rising to explain, I would say, that I have not lost interest in bee-keeping, nor ceased to care for the C. B. J. and other journals of its class, nor taken offence at anybody, or anything. The simple fact is, that for the past year and more I have been

KNOCKED OUT.

Extra cares and responsibilities have been upon me, and, at a time of life when I had hoped to have more leisure for favorite pursuits, I have, in reality, had less. I do not wish to obtrude my private affairs, even on a circle of bee-keeping associates and friends, who would

no doubt be sufficiently sympathetic not to regard me as a bore in so doing, and a mere hint will probably suffice. Higher duties took me to St. Thomas in the early winter of 1887, and detained me there until Sept., 1888. Having no one at home to take charge of my little apiary, I was obliged to sell my bees and all through that season, I was out of harness, apiculturally. Somehow, I can't write, concerning bees, unless have got them about me, and, as I did not handle them last summer, I hardly put pen to paper in their interests. It was my intention to write up the apiaries of Messrs. Pettit, Alpaugh, Dr. Corliss and others, in and around St. Thomas, and I took some notes with that view, which never got extended into articles. Along with an accession of work, I have had to contend with sciatica, the constant pain of which lessens my capacity and impairs my vigor, so far as performance goes. Added to all, having considerable writing to do, I have had some symptoms of writer's cramp, which have led me to use the pen only as compelled, so that literary pastime and correspondence have been reduced to the minimum. It will perhaps be said, "Why not get a type-writer?" to which the ready reply is, that a good type-writer costs money, which has never been a plentiful commodity with me, especially of late

AN ABORTIVE DESIGN.

As the present spring approached, it looked very much as if I should have to run "my farm of Lindenbank," myself. In the depression caused mainly by emigration to the Northwest, I found that the demand for farm lands either to buy or rent was extremely dull, and, in the absence of purchaser or tenant, I conceived the idea of getting some one to join me in carrying on my place as a bee-farm. Hardly, however, had my advertisement to that effect appeared in the C. B. J., when an offer was made me to rent the place, which in consideration of my state of health, and other circumstances, I deemed it best to accept. I may here take occasion to observe that Providence has never smiled upon any scheme of mine to become a

BEE-KEEPING SPECIALIST.

I have dreamed of this many times and often, but nothing has come of it except dreaming. I don't know whether I should prove a success in that line or not. Frankly, I have my doubts. The longer I live the more I am persuaded that to be successful in keeping bees on a large scale, special qualifications are needed, some of which I know I do not possess. One is the ability to handle them with impunity. I don't have this. The bees never seem to understand that a sincere friend they have in me. They treat me as

an enemy, and sting me at every opportunity. As I often say, some people are bee-loved, and others bee-hated. I belong to the latter class, which I should not mind so much, if the consequences were not so painful and alarming. I am a living contradiction to the theory of people getting accustomed to bee-stings. I was at one time, but since getting a sting in the centre of my upper lip, I am very sensitive to the poison, and suffer intensely, in whatever part of my body I am stung. Consequently, I have to wear veil and gloves. These do very well among bees on a small scale, but they are a nuisance in a large apiary, and cannot be worn continually in the working season, without annoyance, and injury to the health.

Now, that I have got my pen started on the subject of bee culture I find it is running along at a very garrulous rate, so I will conclude by giving a few details concerning

MY NEW START IN BEE-KEEPING.

For I have started again, though in a very small way. Last, fall, a few weeks after my return from St. Thomas, I went out to see some old friends of mine, who live on a farm a few miles from the city. I found them in possession of a stock of bees, housed in an old soap box. One day last summer, as some of the family were going toward the outer gate on their way to town, lo! and behold, a swarm of bees hung on an uprooted stump, near the place of exit. They informed the rest of the folk, and went on their way. A lady friend was visiting them who knew something about bees, enough to direct the boys to put cross-sticks in the soap box, and hive the bees. At the date of my visit, late in November, I found that the bees were very light in stores, and could not possibly survive the winter unless fed. My friends knew nothing about bees, except what they had picked up since the swarm had come to them, and that was confined to the fact that they would sting if meddled with. It was too late for them to feed them with any appliances within their reach, and besides they didn't want to meddle with them any more. Could I bring them through the winter? was the question. I did not know, thought perhaps I might, was willing to try the experiment. So the bees were given to me, and I went home with the soap-box and contents "all aboard" my buggy. Now, I was put on my mettle. I was bound to winter those bees, if there was any possibility of so doing. After much cogitation about the best way of doing it, I finally borrowed

A WRINKLE FROM DR. MILLER.

I found the soap-box would sit nicely in the upper story of a Root chaff hive. So, having some frames of empty combs on hand, I took Dr. Miller's method of filling them with sugar syrup, and hung them in the lower story of the Root hive, calculating that if the weather was mild enough, the bees would carry up the syrup, into their soap-box nest. It worked to a charm. They wintered splendidly, and there is now a rousing stock of bees in that old soap-box. I haven't quite made up my mind whether to experiment with them in the line of non-swarming, *a la* Simmins, or whether to drive them

out of the soap-box, and push them for all they are worth. Now is the time to transfer them, so I must decide quick. Here is an example in ventilation for our Michigan Reviewers to consider. That soap-box was without a bottom. It sat on a stratum of frames, the entrance being open full size. The hive was placed on top of a shed, so as to be out of the way of "the folks at home," all of whom are afraid of bees. They had any amount of ventilation, how then say some of our prominent Wolverine apiarists that bees do not need any ventilation, that it is not a factor in the winter problem, but temperature only need be considered? True, the winter was favorable, but we had more than one spell of weather during which the thermometer was down to 20° below zero.

THE C. B. J.'S NEW DEPARTURE.

I must just refer to the above by way of post script to this long communication. If there is any other occupation suited to be associated with bee-keeping, it is the care of poultry. Perhaps an old-time bird fancier, I have a special weakness in that direction. I could write a book with the same title as Burnham's: "The Hen Fever by One who has been there." That cut of the Buff Cochins, nearly sent me "there" again. They were and are my favorites among barn-door fowls. Perhaps I may inflict some of my poultry experience on Mr. Peter, when the fit is on me. Anyhow, I wish the C.B.J. in its new and enlarged form, the best of success.

WM. F. CLARKE,

Guelph, May 30, '89.

FOR THE CANADIAN BEE JOURNAL.

Spring Session Oxford Bee-keepers' Association, held May 21st

THE meeting being called to order by the president, Wm. Goodger, at 10:30 a.m., the ordinary business of reading minutes etc., were disposed of. After due and thoughtful deliberation regarding the disposal of Government grant etc., in furthering the interest of bee-keeping in this part of the Province, the following resolution was unanimously carried:—

Moved by Martin Emigh and seconded by Dr. Duncan and resolved that this Association make a grant of \$50 for prizes on honey and bees-wax to be competed for at the fall show or shows (Oxford Co. being divided) and that J. B. Hall, Mr. Martin and Wm. Goodger be a committee to confer with the North and South Oxford Agricultural Societies and make arrangements with either or with both of them, as the committee think advisable.

Prize lists and regulations will appear in due time and it is hoped that all bee-keepers, at least in this vicinity, will put forth every endeavor to make bee-keeping worthy of a position among the natural industries of Oxford. The exhibition in this line will be open to all.

versal competition, subject to the Agricultural Society's regulations. A number of practical honey producers of this province were recommended from which to select a judge.

It was decided very unanimously and good humoredly that the whole crowd be a delegation to meet with the International Convention to be held in Brantford.

The fixing of the Annual Meeting on third Wednesday, 18th of December closed the business part of the session.

QUESTION DRAWER.

Answers to be given by the members. What is the original color of the wax? White, unanimously. What makes wax yellow? Fine particles of propolis, bee-bread, dust from bees feet, cocoon shells, and stain from dark honey. How can these substances be removed from wax, so as to leave it perfectly white? This question was not easily nor satisfactorily answered. It was suggested that this question be asked and answered in the C.B.J.

The next question was asked by a member who last fall, destroyed his bees in order to stamp out foul brood in his vicinity. How and when would you commence bee-keeping in a district in which bees have been ravaged by foul brood? Dr. Duncan, J. B. Hall and J. E. Frith, of Belmont thought that it would be well to test the place with a medium strong colony immediately after apple bloom when honey is scarce, and, if there were no signs of foul brood by clover bloom, it would be comparatively safe to put ten to twenty-five colonies into the field. If foul brood appeared, destroy the colony and test again in the fall in a similar way. These answers were given on the assumption that there are no bees within a radius of three miles except wild bees in the woods. This question and answer drew forth a deep and earnest desire by all the members present, that foul brood should come under the quarantine laws of our country.

The experience of nearly all the members was that bees used up more stores during the winter just past than during more severe seasons. Why was this? Mr. Hall and Martin Emigh thought that there were a number of reasons. Honey was very scarce, last season, hence bees stopped breeding very early; the result being old bees. This together with a mild winter caused colonies to rear brood more or less, consequently consuming more stores. Why were bees in many localities more uneasy than in other seasons? Answer same as that to preceding question. The questions and answers regarding ventilation were "chestnutty" and void of any new information. How would you

deal with damp repositories? Mr. Pettitt found by practical experience that bees (each colony) going into damp repositories must be well and closely covered so that the hive may be kept warm inside. This makes a considerable difference in temperature between inside and outside of hive. The expanded air inside the hive absorbs the moisture, while the compressed air outside causes a deposit of damp on the walls of repository. A constant flow of fresh air through sub-earth ventilator helped matters very much in such cases. Honey producing bees should be reared from queens of what age? Some thought that queens of one year and some of two years of age were the best to rear honey gatherers from. The question was thought worthy of some ventilation through the journals. Are bees inclined to be restless and uneasy under acute contraction? Yes, it is very unnatural for them to be squeezed into close breeding quarters. This question elicited the following conclusion: that bees under all circumstances should be kept as free from irritation as possible.

Meeting adjourned to meet in December as per resolution.

J. E. FRITH, Secretary.

THE HONEY-BEE.

MR. G. B. JONES delivered a lecture on "The Honey Bee, Its Marvellous Anatomy, Its Interesting Life and Its Important work," in Toronto on April 25, to an appreciative audience. This lecture was illustrated by over thirty large colored charts. They show the anatomy of the honey bee on a large scale, the tongue, the eye, the wings, legs, feet and sting, as well as the digestive and circulatory systems, and are displayed in sufficient size to be distinctly seen from the end of our largest halls. The queen bee covers a sheet nearly six feet by four, while the other members of the bee family are in proportion. The sting is shown three feet long.

The family of the honey bee consists of three distinct varieties of individuals:—The queen (or mother), the drones, (or male bees), and the workers, (or laborers—undeveloped females). To properly understand how the bee accomplishes the end for which it is created, we must study its anatomy.

"The tongue of the worker averages in length one quarter of an inch and is about as thick as a coarse hair, somewhat flattened and slightly tapering. Small as it is it is covered exteriorly with fine, stiff hairs; interiorly it is hollow and contains folded within it a small bag, formed of

an exceedingly thin, colorless membrane. The tongue terminates in a minute suction-funnel which connects through a valve with the bag; the under side of the tongue is slit the whole length. The maxillæ, or under jaw, of the bee is in two pieces, which move sideways, and in conjunction with the caraglossal or side branches of the tongue forms a tube, through which the honey (when in sufficient quantity) is pumped into the pharynx by the up and down motion of the hairy tongue within the tube, just as water is pumped by the vacuum causing motion of the sucker. When honey is too scarce to be pumped up the bee places its tongue funnel over it, and by expanding its tongue-bag through the slit causes a vacuum, into which the honey is drawn. When this bag is full it is compressed, and forces the honey through an opening at the back of the tongue into the pharynx. When at rest the tongue is telescoped one-third of its length into the mentum (or hollow chin), and together with the enclosing maxillæ, is folded back under the chin out of danger.

The antennæ of a worker, although as fine as a hair, consists of eight movable and four fixed joints; its outer surface is studded with hairs, which are really nerve sheaths, and is perforated with smelling and hearing holes. On the under side of the first and longest joint are innumerable long, fine feathers, each of which contains a feeling nerve. The number of smelling holes is 2,400, while the hearing holes are too numerous to count, as are also the nerve sheaths. The queen has only 1,600 smelling holes or nostrils, while the drone has 37,800. But how marvellous is the interior of this organ when it contains all the muscles necessary to move all the eight joints in every direction, all the nerves which run, one from each smelling hole, hearing hole and nerve sheath, a most complicated system of aerating tubes and the blood.

The bee has three simple eyes like our own, but fixed in the centre of its forehead; and on each side of its head one compound eye, resembling a large blue bead stuck there. Each compound eye is made up of 6,300 simple eyes, grouped together and partitioned by a thin scale. Each separate eye of the group is perfect in itself, having its own cornea, pupil, lens, vitreous humour, retina and optic nerve. How minute, then, must be the partitions and the nerves when the facets (or corneas) themselves measure only 1-1800 of an inch each across.

The brains of the bee consist of one large ganglion or nerve centre; whether the bee's thinking powers lie here is not known, but that bees have what is at least akin to power of thought, the lecturer clearly proved by some

wonderfully interesting and amusing facts he related of their action under his own and other reliable observation in unusual circumstances.

The head contains one pair of salivary and one pair of chyle milk glands. A third pair of salivary glands is located in the thorax.

The fore legs carry each a comb for cleaning the antennæ, an eye brush and a tongue brush while the fore and hind feet are provided with a clothes brush, two claws for climbing rough surfaces and a sticky pad for climbing smooth ones. A spur under the elbow joint of the middle leg is used to dislodge the loads of pollen from their places in the pollen basket of the hind legs. The middle feet are really hands, and compose the bee's tool chest, for they are provided with a mason's trowel, a varnish and glue brush, two pairs plyers, two pairs shears and one pair tongs. The second joint of the hind leg is hollow on the outer surface, and the hollow is fringed with inward curving stiff hairs, so as to form a basket in which the bee carries home the pollen of the flowers. They use the pollen to make bread. The manner of loading this basket is most interesting.

The wax is an animal product secreted by very intricate glands under the lower scales of the abdomen. It is the superfluous fat of bees, and oozes out as sweat, hardening as it meets the outer air, into little quadrilateral scales. These scales are used in comb building.

The sting consists of sting proper, poison bag and poison glands. The sting proper consists of a sheath and two lances. The lances are grooved and work upon a bead on the sheath independently of each other, and each is moved by its own muscle. The ends of the lances project beyond that of the sheath, and are barbed. When the sting enters a foreign substance the lances immediately begin to work alternately in such a manner as to carry the sting proper its whole length into this substance, even after the sting has been left behind by the bee. A healthy sting will work for several minutes after it has been severed from the bee's body. The sting of a dead bee often retains its energy for twenty-four hours. Apiarists are often stung by handling dead bees. While the sting is working the poison bag is constantly contracting, and forces its contents through an opening between the lances into the wound caused by the action of the lances.

The bee's egg is a marvel in itself, although so small that only a practical eye can see it. It has its yolk, its white and its shell, and, besides this, it is enclosed in a beautiful network of air vessels. Three days after it is laid the egg hatches,

and we find coiled up in the bottom of the cell a tiny white, glistening grub, which for three days is fed on chyle secreted in the heads of the nursing bees. It does not eat this food but absorbs it through its skin. In from nine to eleven days the perfect bee emerges from its cell. As soon as it makes its appearance the nurses feed it, and in twenty-four hours it has learned to feed itself and has begun its duty as a nurse. After spending five to seven days as a nurse it becomes a wax producer, and for about a week it hangs with its sisters in a cluster and eats enormous quantities of honey, becoming so fat that the wax glands, to relieve the system, draw upon the fat and convert it into wax, as already described. During this time the bees need exercise, and they get it for about two hours each fine day, when from about two hours in the afternoon until four they go out to play in front of their homes. Mr. Jones assured his audience that young bees actually do play, and none who have watched them can doubt that they really enjoy their outing. He then minutely described, with the assistance of his charts, the process of comb-building. The third week in the bee's life is the most varied in its labors of any in its existence. It is spent in comb-building, pollen-gathering, house-cleaning, ventilating, home and queen guarding. The bees show an unmistakable desire to be part of the queen's retinue, often intruding themselves among her body-guard to the disturbance of the general order of the hive. It is remarkable how often the guards chase. After the third week the bee devotes nearly all its time during the day to foraging and during the night to comb-building. It is not known whether bees sleep.

In opening the third section of his subject—its important work—the lecturer considered it advisable to go a little into elementary botany, for it was necessary to understand the construction of flowers in order to appreciate the fitness of the bee to work in them. After explaining the reproduction process in flowers he said that the bee's end in nature was no more the gathering of honey than it was the horse's life work to haul his oats to his stable. The bee's honey is its food which fits it to accomplish the end for which it is created, and this end, and a most important one, is the fertilization of flowers. Many flowers are entirely dependent upon the bee for fertilization, notably the clover. The English primrose, the figwort and many of our commonest plants, would produce no seed but for the visits of the bee. The honey is scented in the flower to attract the bee, and the main use of the perfume is to guide the bee to where the honey is. Mr. Jones then displayed

charts, illustrating the bee's work in the blossom and the process of carrying the pollen from one flower to another, for nature will allow no flower to fertilise itself. This section was only touched upon sufficiently to give an idea of what a field for study it opened up.—Mail.

Improved Methods in Honey Production

THE brood chamber is covered by a board, when the sections for honey are not in place, and contains twelve hanging frames twelve inches long by nine-and-one-half inches deep. The surplus arrangement consists of cases, at one end of which are a follower and wood screw by which the sections are tightly clamped together. Each section is supplied with a full sheet of foundation and between each row are placed thin wood separators to insure perfect combs. Mr. Manum was probably the first to make a white poplar dovetailed section, which is not so much used. Previous to this they were of pine, and made to nail. This section, put together with glue, is not only the strongest but the peatest section in use. Two of the Bristol clamps cover the brood chamber and can be tiered up as high as desired. Mr. Manum has lately discarded all but one-pound sections. When filled with finished combs, the cases are disconnected from the brood chamber, and before they are removed to the honey house the bees find their way out at the bee escape in the gable. A cord and a simple device allows the hive cover to be tipped back instead of having to lift them off bodily when opened.

The hives are five feet from each other in rows twelve feet apart. To prevent upsetting by heavy storms in winter, a large cord is thrown across the roof and fastened to a stake driven in the ground on each side. During the winter everything needed in the summer campaign is prepared ready to be quickly supplied to the different yards by the teams which are then constantly on the road. It the spring at certain intervals Mr. Manum and his assistants spend a day in each apiary giving that aid to colonies which is so important. These rounds are made more and more often until the swarming season is about to commence, when one competent person is placed in charge and is in constant attendance for six or eight weeks, or until the honey season is over. Board is usually obtained at the farm house near which the yard is located, and the help are continually employed in hiving swarms, putting on or taking off boxes and in attending to other necessary details. As experienced men are not always to be had, many

knowing nothing of the business must be taught, and as they usually commence for themselves as soon as really competent, this instruction must be given again and again. After a few weeks' instruction some are able to do nicely the remainder of the season with occasional looking after. Women are also employed, and one who did not know a queen from a drone when she commenced, took entire charge of 116 colonies the second season.

At each apiary there is a building containing a honey room where clamps of honey are temporarily stored, and a work room where fixtures not in use are also housed. In each yard one hive stands on scales, of which a close watch is kept after the clover and basswood blossoms open. On the front of every hive in plain black figures is the colony's number, while inside is a record of the colony, its origin, age of queen, date at each examination that season and their condition when examined. This is written in abbreviated characters on a piece of section or smooth board and laid on the packing. The apiarist also keeps in a book a list of the colonies casting swarms, and of those requiring special attention at a certain time. The wings of all queens are clipped to prevent their going off with the swarms. When the latter attempt to leave, they are caught by an arrangement consisting of a wire cloth cage fastened to a pole. It is made to stand anywhere by two legs, which fold up when not in use. A sufficient number of these are always at hand. When a swarm issues, the queen is caught on the ground near the hive and placed in the cage of the catcher, which is stood or held in the midst of or near the flying swarm, and the bees soon settle upon it. They are then left, and attention is given to the others, which usually issue at about the same time. If the swarm has gone some distance, or clustered in the top of a small tree, it will soon return, as it is without a queen. So the catcher containing their queen is stood in front of the hive from which they came, and as they return they find her and cluster upon it. To make this more certain, the entrance of the old hive is covered with a cloth. This plan differs from that of most bee-keepers and enables Mr. Manum to quickly handle many swarms. In hiving, when time is more plenty, about a third of each swarm is shaken back in front of the old hive and the balance of two or three swarms, with one queen, is hived in a new hive. As this makes a powerful working colony in the new hive, abundant room in sections is immediately given.

A close watch is kept of the apiary, and more storage room is added as fast as used to advan-

tage, and the filled clamps are removed as soon as they are completely sealed. A large drop can be cut off from communication with the brood chamber in a short time, and when free from bees is carried to the honey room and afterward carted to the central honey house. It is then scraped clean of propolis by women and girls, and after being graded is stored in the honey room to ripen. In the fall, wood sides of white poplar instead of glass are fastened to each section, and they are shipped to market in white poplar crates holding two one-pound sections. Sections full of nice white comb, those full of darker combs and those light in weight, are each crated separately and the crates are marked "Green Mountain", "Comb Honey" and "Light Weight," according to contents. A few of the very best and most perfect are selected from the best quality and go as the "Snow Flake" brand.

As most of the crop is secured as surplus and but little is gathered after its removal, that remaining below is no more than the bees need during the season. Therefore, to keep them alive until spring, each colony must in early fall have its ration of sugar syrup. This season twenty-eight barrels of the best granulated sugar were required to insure sufficient winter food. For feeders maple syrup cans with small holes punched in their bottoms are used. Three short legs of tin raise them enough to give the bees room to get at the holes. These cans are filled with syrup and set over a hole in the cover of the hive, and are renewed until the proper amount of food is consumed.

After the honey season, instead of a constant attendant at the out-yards, frequent visits are made, as in the spring, and are continued until the bees are snug for winter. Then an occasional trip is made on a warm day when the bees can fly to see that all entrances are clear.

Mr. Manum, has at present, about 700 colonies in eight different yards. The number in each is limited to 125 in the fall. The colonies in excess of this number are either sold or carried to a new location. For this work a double and single team are used. By the use of racks which hold a second tier the former takes fifty colonies and the latter twenty-three colonies. Before loading, the frames are immovably fixed and a sheet of muslin is tacked over the brood chamber to give air, while in very warm weather a rim covered with wire cloth is necessary to their safety. Mr. Manum's bees are mostly Italians, although in some apiaries, there is a trace of Black and Holy Land blood. He is about to test a few Carniolan queens. The working queens are reared from the best Italian colonies, which are selected out of this large

number as possessing unusual excellences. I saw many fine large queens, a shade darker than the average Italians, having very plump and thick-set bodies. In each yard, distributed among the regular hives, were many nucleus colonies—the temporary quarters of surplus queens. Mr. Manum has planted honey-producing crops on a limited scale, but is not yet certain that they can be made to pay.—Samuel Cushman in American Agriculturist.

SUNDRY SELECTIONS.

A MAGWOOD.—Bees are doing very well, and we have had any quantity of bloom thus far this spring. Hives are full of honey and brood. Have planted 50 bushels of turnips for seed and bloom for the bees, also five acres of Japanese buckwheat and half an acre of mignonette. Have also about one acre of raspberry bushes coming in bloom.

Stonewall, Man., May 22nd, 1889.

H. G. ARNALD.—I have been unpacking my bees to-day and find a loss of three out of 30 colonies, the sole cause of loss being starvation. It seems to be a general complaint in this part this spring. Bees brought in pollen for the first time April 8th. I am feeding on sugar syrup and living in hopes of a better honey crop than the last two years have afforded. Will have about twelve acres of alsike clover this year. I wish the C.B.J. every success.

Maidstone Cross, Ont., April 9.

THE SPRING IN MINNESOTA.

C. THIELMANN.—I notice in the last number of your JOURNAL that your bees are making surplus honey already. I also see quite a number of such reports from different parts of the U.S., with good prospects for a good season. Bees in this part of Minnesota, and, according to reports of the whole state, have wintered splendidly with hardly any loss. My 217 colonies all came through alive. I set them out on March 20 and the next day they brought in pollen from the soft maple and other flowers, and for a week they were as busy as bees could be in the height of summer, and, as they were quite heavy in honey when I set them out and with abundance of pollen, breeding began in earnest at once. But the weather turned unfavorable with only a day here and there that they could do much up to now. Breeding kept on and the abundant stores exhausted rapidly, and within the last ten days I have had to feed heavily to keep them from eating up the brood. The colonies are very populous and almost ready to swarm, but the weather is damp and cold north winds are prevailing. White clover is abundant but have no flower stems as yet. Linden is budded out abundantly for about one week; there is a good prospect for it if the weather should be favorable when in bloom, which will be in about a month hence. Small grain crops look good but it is too cold for corn.

Theilmanton, Minn.

BUSINESS DEPARTMENT.

THE COMBINATION HIVE.

We sell more of these than of all our other makes together and we find nearly all of them with the new reversible honey boards and reversers.

SECOND-HAND JONES S. W. HIVES.

We have several hundred of these in stock which we offer complete with 12 frames at 70cts. each f. o. b. cars here. They have been used one and two seasons and many of them are painted.

We wish to say that the prices as found in our catalogue issued last season hold good for 1889. We have a large lot of our last issue yet on hand, and there is so little change in them that it is not worth while throwing them all to one side. Those who have this catalogue will please note this, when ordering, and those who wish a fresh one, please drop us a postal.

THE BOSS SECTION PRESS

The demand for section presses seems likely to be good. We expect to have the castings complete in about a week's time and immediately we will be able ship the "Wakeman and Crocker" press by return express or freight. Remember that you can easily fold 100 sections in six minutes with one of these machines, and if you have only one or two thousand sections to put together it will pay you to have one of them. The price is \$2.00

FORCE PUMPS AND SPRAYERS.

Our second order has already been placed for the above. We sell more of these every year and we don't wonder at their growing popularity as nothing nicer than these can be kept about a place. They answer so many purposes as spraying fruit trees, currant bushes, and flowers, watering vegetables and flower beds, washing windows and buggies and last but not least for general use in the apiary. At the low price of \$2.00 no one should do without one.

Special Announcement

WE have made arrangements with Dr. B. J. Kendall Co., publishers of "A Treatise on the Horse and his Diseases," which will enable all our subscribers to obtain a copy of that valuable work FREE by sending their address (enclosing a two-cent stamp for mailing same) to Dr. B. J. KENDALL Co., ENOSBURGH FALLS, VT. This book is now recognized as standard authority upon all diseases of the horse, as its phenomenal sale attests, over four million copies having been sold in the past ten years, a sale never before reached by any publication in the same period of time. We feel confident that our patrons will appreciate the work, and be glad to avail themselves of this opportunity of obtaining a valuable book.

It is necessary that you mention this paper in sending for the "Treatise." This offer will remain open for only a short time.—T. F.

POULTRY WEEKLY

W. C. G. PETER,

EDITOR.

All communications intended for publication must be sent to W. C. G. Peter, Angus. All advertisements, subscriptions and business letters to be addressed to the Publishers, Beeton.

THE SEASON.

MAY has always been regarded as the best month for hatching and raising chicks. This year, the season has been so extremely varied, that I have my doubts as to what May has accomplished for the poultry man. The heat has been fully as great as at midsummer and long continued too, but interspersed with that we have had cold rains, high winds and heavy frosts. These latter, coming on the very heels of almost tropical heat, have done much to cause loss in the young stock that was hatched early in May I'm afraid. I fear also that the breeding stock has suffered under these great changes of temperature, and it may be will not give us the results we anticipated. Of course we hope it will not be the case; but we can lay much of the cause to the peculiarly fickle season we have experienced. Bees no doubt have suffered too latterly though the extreme heat would scarcely affect them to such an extent as the poultry has suffered by it. We have had ice form here twice lately over an inch thick. Yesterday and to-day (28th and 29th) the cold has been intense, and very high winds prevailing, and with cold heavy rain, and as I took out just now, it looks as if, like the brook, "It can go on for ever". Such a dull miserable cold rain is falling, as my better half expresses it "a regular Old Country rain", and in fact I have in my own mind a vision of lines of "busses" with a crowd of um-

berella bearing citizens adorning the outside seats, and the driver with his "oilskin" or many caped coat, looking cheery in spite of wind or weather. Yes it is an old country day, to-day.

The Egg and the Embryo.

AS many of our readers will be getting their first lessons in poultry culture from the pages of the **POULTRY WEEKLY**, we have taken the above subject from Mr. Maurice H. Strong's valuable work, "The Artificial production of Poultry," thinking that the wonders of the construction of the egg and progress of the embryo to the perfect chick would interest and instruct them. First the construction of

THE EGG.

"The eggs of all fowls are of similar construction, viz., an outer porous shell, a quantity of albumen in fluid form and a yolk. These several parts are subdivided into other parts. The paper-like membrane lining the shell is double, the outer layer predominating in thickness, with a small air-cell between the two, at one end. The white, so called, probably because it forms a white mass of greater solidity when subjected to a temperature of 146° Fahrenheit, is composed of alternate layers of albumen, elastic in character. The office of both the shell and the white is, principally, to protect the yolk, which contains the germ and its means of sustenance during development. The yolk, which consists of colored oil globules, is surrounded by an envelope called the vitelline membrane. Suspended in the yolk is a small pear-shaped sac, widening out at the small or stern end, which just underlies the vitelline membrane. This outer end resembles a transparent disc, on the surface of the yolk, and close inspection reveals an opaque circle surrounding it. In this transparent disc can be distinguished a small white spot of irregular shape. This is called the

germinal vesicle, and at this point, in a fertile egg, the development of the germ will commence when subjected to the proper temperature.

No process has yet been discovered whereby the fertility of eggs can be determined, previous to their subjection to heat. Neither can the sex of eggs be any more successfully ascertained, either previous or subsequent to the development of the germ. However, by a good egg-tester, the fertility of eggs may be accurately known, after they have experienced heat for the space of four days, thus enabling the operator to remove those not fertile, which, for culinary purposes are equally good with those fresh laid."

Our next paper will be on the subject of "the embryo," and exceedingly interesting.

BREEDING FOR SIZE AND COLOR,

LAST week we took the size side of his question and now our attention must go to the color of the parent birds.

It is well known among fanciers that a male transmits to his offspring more of the external features than the female; also that the surface color of a male is not a safe guide.

In choosing the bird for a breeding pen, the feathers must be lifted and the *under color* ascertained before we can trust the bird to sire a season's stock. Blemishes in the male's plumage are dangerously inherent, also any defects of form such as wry tail, crooked back, too long or too short bodies and legs, and thin, flat breasts, where a full round breast is the standard quality, have done untold harm to stock of large varieties when such males have been bred from.

We must not forget these facts, and no matter how fine in plumage a specimen may be, it should be discarded as a breeder if very faulty in shape. If bodies of males are too long or too short for their variety, they may be modified in the young stock by breeding to the reverse trait on the female side, but a male fine in form will father twenty standard shaped birds to the other's two or three, and then again these cannot throw back to the defect of the grandsire which often happens when bad shaped birds are used, even though the females were selected with a view to cover the defect in the first stock.

Our veterans in poultry breeding are the men who have studied these things and mastered the art of breeding to a required shape and plumage, the varieties they are interested in. And very many have been their difficulties and disappointments. The novice sees a bird and if he is a self color and looks uniform in it, he will, nine times out of ten, take him for a fine breeder, but the expert goes deeper down, even to the color of skin, before he decides what the specimen is worth as a stock bird. The under color is of vital importance and he does not forget it, but looks to see that the buff which is so beautiful on the surface, goes deeper and does not turn to cream color when the surface feathers are lifted and the roots of the feathers nearly white; he wants to see the rich buff extend well down and carry its color well to the end, not that it will be as deep in shade, but bear the shade of the surface color in it.

Or if the fancier wants shape in a variety that is deep and blocky in build he does not cast more than a glance on the specimen that looks as if it could have crossed the river without wetting its body; that is a mistake to fancy a tall bird, like one perched on stilts, is necessarily a large bird.

It is well to bear in mind that you can afford to have your male a little darker in color than you would usually select for an exhibition specimen, in all the varieties that are of mixed plumage, such as Plymouth Rocks, Wyandottes, Houdans, etc., being careful to get the markings distinct and good, for by a darker male we do not mean one that is smutty looking and undecided in markings; but only that the black can predominate, as the black is modified by loss of color in breeding.

In the Wyandotte the under color *i. e.* the fluffy portion at root of feathers, is very important in both male and female, and a dark male with white under color is not so good as a breeder as a lighter bird who has grey or slate under color, and if he holds good in the primaries too, is of great value as a breeder. I have proved this to my own satisfaction. Here comes in the merit of the scoring system when faithfully applied, (though I have seen some bad work done by it when used the contrary way). The specimen judged by the Standard and

scoring system is judged in all its parts seen and unseen (except to the judge), but where scoring is not justly applied and imperfectly understood, the "look and say" system is perhaps the better one. In Plymouth Rocks the male should be medium dark, mated to female of the same color. Although years ago the matings were extreme in color of sexes, a larger percentage of even marked chicks will be produced from the medium color, and see that the male is barred well down the feather, and no white in primaries of either sex. If the female is not barred very low and still holds good slate or grey undercolor, she is a fine breeder as a rule. It is better to have the male darker than usual than to use dingy, dark females in the breeding pen.

Poultry Shows And Their Benefits.

NOT long since I attended a local show in a small village of about twelve hundred inhabitants. The show had been well advertised, every man woman and child knew all about it. As I came into town and neared the business center I said, "Where is that chicken show?" "Right there!" pointed a half dozen at a time, who had congregated on a street corner. As I wended my way up-stairs into a spacious upper room I was confronted with a grand chorus equal to that of a May festival, from long rows of choice fowls, systematically arranged, each variety by itself. While I was looking with astonishment at vast numbers of choice fowls, and wondering where they could have come from at such a small place as this, I was also amazed at the throngs of visitors that crowded through the passage-ways, viewing the heavy Brahmas and the diminutive Bantams with equal wonder. This was not only true one day, but every day during the whole show. Everybody was happy, it was a great event in the history of the town. The business men all helped the enterprise along in a substantial way by means of specials, some in the shape of merchandise of different kinds; others cash. This brought out the fanciers in full force. It also brought out the farmers; some brought fowls to show, others came to look, and perhaps buy to improve their stock. There were those there who had some of their birds disqualified, some on one point, others on other points, but you can rest assured they will never get caught on the same thing again; never! "A burned child dreads the fire." There were

many good sales made and stock changed hands freely. Why so? Simply because the show was brought right to their very doors. The farmer is largely a buyer of good stock, and at fair prices, and as you cannot always get him into the city to visit the International show, the best thing to do is to take the show to him, by holding it right in his country town, where he is in the habit of going to trade. He becomes interested, and is soon in for a trade. The result is fancy poultry finds a ready sale at his hands, at very fair prices. Thus you see my aim has been to show in a plain, practical manner, that it is better to hold more of these local shows all over our land, and fewer of the National, or "Big Four" kind. Of course I would not do away with them entirely, but aim to carefully cultivate the smaller ones. You see it is only the few that have the time and the means to spare to get very far away from home to attend a poultry show; there are a class of professionals who are only occasional buyers. It is the beginner, the one just stocking up, that we want to meet and have attend our show. So keep the ball a rolling, institute new societies, hold small but interesting shows in almost every county of our thickly settled States, if need be, and the poultry interest will move with a healthy action. —F. W. Marshall.

The above remarks which we clip from the popular "Poultry Monthly" apply to us in Canada with equal force. Those who can look back to the past ten or sixteen years of fall exhibitions can recall the time when it was hard work to "scare up a few birds of a feather." The poultry exhibit of those days was composed of "white fowls" "black fowls" "yellow fowls" and "black and white fowls." As many as could be got together of a color. It is within my memory that a pair could possess both rose and single combs, and have one bird with five toes and white legs the other with four toes and yellow legs, and it was no disgrace to a White Leghorn to have an odd black, or brown, feather in it and all kinds were excused for sporting the semblance of a "top knot." In fact a few dozen pairs of "decent looking" fowls shown in anything but decent looking boxes; (some so heavy that the united efforts of two strong lads could scarce avail to get them from the waggon onto the piece of ground devoted to the poultry exhibit,) was the humble pioneer of the grand shows of poultry that are now so com-

mon. The sloppy piece of ground dirty and out of the way, any odd corner was good enough, has been the corner stone of the handsome poultry houses that now adorn many of the grounds at our annual fairs. Let us not then despise the humble efforts made in the past by the lovers of our feathered friends. To those who took the trouble to bring "the best they had" is due the credit of keeping up the interest in poultry culture, till something better could be obtained and I fancy none of us take a "red" now with any more pride than those in past days saw the piece of red or blue cotton or paper, tacked on the cumbersome, ugly looking boxes that contained the prize winners of their day and generation.

The farmer and the farmer's wife, are now deeply interested in the poultry departments, they prepare to leave some other special attraction, if time presses. But, "we *must* see the chickens, I promised Joe I would tell him if there was any like his there," was one of the remarks I heard at the last Industrial. And so it is with them all, they must go and see the poultry house, even if the "art gallery," is deserted to do so. We trust that many exhibition committees will put up a covered shed for the poultry this fall, and not leave the birds exposed to the changes of weather as often is the case.

For the Poultry Weekly.

Incubators a Success.

DEAR Bee Man:—In answer to your excited query re incubators, allow me to say: 1. Yes lots of prize birds, far handsomer in plumage and healthier than many raised under hens. 2. A brooder needs a supplement in the way of a careful poultry man to feed etc.; then I will say yes again, freer from vermin and crooked feet than any hen-raised lot. 3. Many, if not a majority of English prize birds are now raised in this way; the advantage being that in England they can be reared successfully in Jan. and Feb., nearly two months ahead of hen-raised broods, and in greater numbers.

I can thoroughly recommend Hearson's Champion Incubator and either Hot Flue or Hydrothermic Mother, having used them successfully myself. I am not interested in its sale nor any machines of the kind, but will

guarantee it to do all the manufacturers claim for it with any attendant who has the brains of an intelligent child of ten. I have known children of twelve to hatch 80 per cent. of fertile eggs with it, and raise the chicks afterwards as well.

REV. ROBT. W. RAYSON.

Lombardy, Ont.

We are very glad to receive such a favorable account of the incubator referred to in the above from Mr. Rayson, and will be pleased to receive a description and engravings. Mr. Rayson's experience only bears out that of other successful men. Incubators are indeed one of the necessities of the age, and good brooders also, but these are only mechanical contrivances; they want brains and energy at their back, just as any other artificial system for superseding Dame Nature's plans. We can rear an infant on the bottle plan successfully, but we must provide the required elements for sustaining life and augmenting growth. etc., and our artificial raising of chicks is as much dependent on our thoughtful care after they are hatched, as a baby's life is dependent on its nurse's tender watchfulness.

Cost of Keeping Hens.

THERE is a great dearth of reliable information regarding the actual cost of keeping hens, especially among farmers and those who do not make poultry raising a specialty, although there seems to be no very good reason for this condition of things. While there may be a variety of elements that enter into the question of actual cost they are not of that character that need prevent coming to a satisfactory conclusion. Perhaps farmers are inclined to overestimate the food consumed, and to underestimate the real income in assuming that hens cost more than they come to. It must be remembered that with a flock of say one hundred hens the amount of capital invested is very light in comparison with other departments of farming, and that proportionately the percentage of income might be expected to be small, but is this always the case? We have in mind a neighbor who kept about one hundred hens, and at the end of the year he made the assertion that the broilers sold, amounting to about \$60, had paid the entire expense of keeping, and that the eggs sold amounting to \$70, was all clear profit, allowing the manure made to offset the labor and time

expended in their care. This would give a profit of about 100 per cent., even allowing a large price for the original stock.

We have seen many statements of the cost of keeping hens and they vary from 50 cents to \$1 per head, which may be looked upon as the extremes, and 75 cents per head may be considered not far from the real facts. At that rate for fifty hens, at an average of 25 cents per dozen for eggs, it would require only three dozen eggs per hen to pay the expense, which would be a small number. All above that number and all broilers sold or consumed would go to make up the profit.

WM. H. YEOMANS.

Columbia, Conn.

Report of the Poultry Manager of the Government Experimental Farm, Ottawa.

WET AND COLD WEATHER.

THE fall was marked by continuous rain, the month of October was unusually cold and both combined proved fatal to many of the tender varieties, which, pending the completion of the new house, were rather crowded in limited house room. Next to the Indian Games and Red Caps, the Black-Breasted Red Game, Bearded Golden Poland, and Dorking cockerels proved the most susceptible to the fall weather.

DIRIGOS.

Among the varieties enumerated the Dirigos are yet new to Canada breeders. This comparative stranger, which owes its origin to the enterprise of Mr. Summer Beale, New Hampshire, U. S., is the result of crossing a Canada Game Cock and White Plymouth Rock pullet (a sport) the progeny again crossed with a Light Brahma cock. The Dirigos make a large fowl, are hardy and excellent layers. In the new American Standard of Excellence they are classed as the Dirigo-Strain of White Plymouth Rocks.

WILD GEESE.

The Wild Geese which occupy No. 5 pen have exhibited their characteristic hardiness in all seasons. They have been lively and have grown well in confinement. It remains to be seen whether they will breed in captivity mated to one of their own species, and with common geese, or others.

THE BEGINNING OF WINTER LAYING.

On the 12th of December the first egg in the new building was laid by a Wyandotte pullet hatched on the 29th May. The first hen to lay

was a Dirigo on the 16th of December. The Wyandotte pullet, which first laid on the 12th December, layed again on the 15th and was followed on the 16th by the first egg from the second Wyandotte pullet hatched on the same date as the first layer. Other pullets laid first eggs in the following order:—

Houdan, hatched 25th May, first egg 23rd Dec.
Silver P. Hamburg, hatched 25th May, first egg 24th December.

Black Minorca hatched June 5 1st egg 26th Dec
White Leghorn " " 7 " 30th Dec
Black Hamburg " May 25 " 2nd Jan
Andalusian " " 18 " 4th "
Plymouth Rock " June 9 " 6th "
Buff-Cochin " May 18 " 16th "

THE SEXES.

THE journals have devoted no small space to the discussion of this subject; and in furnishing the *ultimatum* of many experienced and reliable breeders, that, though we have arrived at that state of perfection in mating where we can put together a certain pen of fowls and say they will produce a choice lot of pullets or extra fine cockerels of the breed in question, we cannot say with any degree of certainty what proportion the birds of the sex mated for will bear to the number actually reared from the pen. This is all any breeder has yet claimed to be able to accomplish, except one, who lays down certain rules which may be applicable in his flock and yet fail entirely in some equally as expert a breeder's pen, as all arbitrary rules must, for, as he admits himself, it depends largely on *knowing* your stock. What one should especially know of his stock to make this mating successful he does not venture to state. He says positively: "Those who know nothing of their stock can get more pullets than cockerels by using an adult cock with pullets, or *vice versa*—cockerel with hens. To produce nine-tenths cockerels (possibly all cockerels,) mate cockerel with pullets and have not over seven pullets in your breeding pen."

I like the approximate approach of this gentleman to the true principle, and regret he did not go on to give some logical explanation of his system, which, while it would doubtless tend largely to the object in view, need not necessarily so result without a knowledge of your birds, and the judicious use of that knowledge in picking the pen.

As to what is the principle that underlies all the work of nature in regard to sex, there has been and is still diverse opinions, even among men of mature wisdom. When that principle is

settled it will not be alone for the poultry yard, but will be equally as applicable to all conditions of animal life in the question of controlling the sexes.

In the physiological branch of an extended course of professional medical reading, I had occasion to devote some special study to this subject in its relation to animals and also to the human family. As the outgrowth of my investigations and the practical results of the application of the theory in the animal kingdom, instead of mating my stock or my birds and saying such mating will produce given results, I lay down the principle of my faith and then mate to the text: *In all matters of chance with regard to sex, other things being equal, the sex of the offspring will be that of the less ardent of the pair.*

I will not go further into details and examples of this rule; but reasoning on this line, an old cock mated with pullets in their vigor will produce cockerels, and the more pullets in the pen the more cockerels in the proportion of fertile eggs. A cockerel in his youth and spirit, mated with old hens will produce a larger per cent of pullets, the number of hens to be governed by the ardor and vigor of the cockerel, and the fewer the hens the larger the proportion of pullets. Cockerels with pullets few in number will produce cockerels in excess on account of the vigor of the pullets. This principle, of course, can only approximate the result, and arrives very nearly at the same matings given by the gentleman referred to above, and assigning a reason therefor.

As to the physiological discussion of why the principle I lay down should be as I claim, I have not now space to present, and besides it would soon lead us into delicate matters that do not pertain to a poultry journal. A fair trial of this method will be more convincing to any member of the fraternity than bushels of logic, and I only ask them to make the experiment fairly, conscientiously, and I am willing to risk my faith on the result.—C. R. Mitchal, in Ohio P. Journal.

FARMERS' HENS.

DID the reader ever see a flock of farmers' hens? If so, while looking at them, did not your mind revert to your own thoroughbred, uniformly-colored and shaped hens at home? and did not this mongrel stock look mean to you as you mentally compared them with yours?

You wonder how the farmer can be content to keep such hideous looking specimens, when a

little trouble and expense would procure for him fowls that would be an ornament to his place, a pleasure to take care of and, above all, a source of profit, where these mongrels are a bill of expense.

That there are many farmers that are replacing these mongrel flocks with thoroughbred fowls is true, yet the progress is slow, and the average flock of farmers' hens of to-day presents the most extraordinary variety of colors and dissimilarity of shapes and sizes that can be imagined. That any one of the fowls in these flocks could have descended from any of the others, seems preposterous, but a close examination of the male bird will reveal that which will make the the origin of the ill-assorted, motley fowls around him, no longer a mystery. This farmyard rooster is "fearfully and wonderfully" made. He is, as it were, a kind of a catalogue of fowls, through which an ornithologist might look without failing to find that which would remind him of every existing and non-existing breed of the domestic fowl. He invariably has a magnificent tail. Nature has seemingly compensated him for his other defects by giving him a tail that would excite the jealousy of many a prize-winning thoroughbred. To be sure it is all out of proportion to the rest of his body, but taking the tail alone, by itself, with all the elements of beauty which it derives from enormous Spanish sickle feathers, combined with the best points of the tails of American and Asiatic fowls, it is an unequalled success in an artistic point of view. Were his saddle feathers alone exposed to view, the beholder might say that he is a Partridge Cochin. But a glimpse of the feathers an inch or two farther up his back would make him swear it was a Mottled Java. His wings are a witchery of colors, in which there seems to be a struggle for supremacy going on between the spangled bar of the Hamburg, and the laced one of the Golden Wyandotte, with here and there a feather that might have been plucked from the Guinea Hen or Bird of Paradise. His fiery red hackle brings to mind the pugnacious Game, which thought, however, is quickly dispelled by the cowardly look in his eyes. His breast—but who shall describe his breast—a collision between two rainbows could not result in a greater number or greater confusion of colors. There are spangles, spots and bars of all hues and shades, mixed in an interminable jangle which defies description: His comb is a miscellaneous affair, a sort of a compromise between the three varieties, and looks as near like any one variety as it can and not ignore the characteristics of the others. He has enough Crested Polish in him to cause a few stray feathers to stand up on his head, and enough Bearded Polish to permit a few to hang down under his chin, which gives him the appearance of needing a "hair cut and shave." Short, scaly legs, ornamented by a pair of spurs resembling miniature elephant's tusks, and long, crooked toes, generally damaged to some extent by frost completes the description of the typical barnyard rooster, one who can produce anything from a Black Red Bantam to a White Plymouth Rock, unless his looks greatly belie him.

This rooster is the key to the situation. Look

him over carefully and you will no longer wonder what could produce a flock of hens that would make you feel, when looking at them, as though you were looking into a kaleidoscope that is out of order.

Another thing particularly noticeable about a farmer's flock of hens is the great number of old fowls among them.

Taking the farmer's hens right through they are, as a rule, a very venerable looking set. You will see a few of them in which there yet remains traces of a departed youth, who yet have agility enough left to spring over the side of the pig pen, when the pigs are fed, or to dodge the swiftly rotating mangle from the hands of the farmer, when exploring the garden in search of freshly planted seeds. The last named are sadly in the minority. The greater number are staid and sedate old biddies, whose age, to judge from appearances, is as great a mystery as that of any woman's, who are content to lie on the sunny side of the barnyard and watch, with contempt bred from long familiarity, the antics of their younger sisters. It is indeed a mercy that nature kills off hens at a respectable age, else had they been granted the length of life allotted the Pelican and some other birds, there might be hens on some farms to-day who could boast, after the fashion of the oft recurring Washington's nurse, that they had laid eggs for the father of our country.

I do not propose to go into details concerning the way in which farmers take care of their hens; that it is faulty we are all aware. It is enough to say that the best of care and treatment would be thrown away on these aged mongrel hens. Most farmers, while they have learned the superiority of thoroughbred cattle and sheep over those of the scrub variety, yet retain the mistaken notion that a hen is a hen, regardless of its breed. It matters not whether she be two years old or ten, whether green or yellow, large or small, lays or does not lay, she is a hen, that is all that is all that is necessary in his mind. The farmer will in time, perhaps, learn how superior the thoroughbred fowl is to the mongrel in every way. But until he does find it out, we must expect to hear a continuance of that wide spread complaint among farmers, that there is not any money to be made out of poultry raising.—Frank S. Ballard in Poultry Monthly.

QUERY * DEPARTMENT *

Mrs. B. McMURPHY.—I have some chicks three weeks old, and they are pretty bad with a kind of bowel complaint, it makes them weak, and some have died, please tell me soon as you can what to do for them.

Alliston.

Give your chicks a feed every day of rice, boiled till it is nicely swelled, in milk and water, all milk would be too rich, if you have any bone meal sprinkle a little in it; make a little lime water by pouring boiling water over the un-slacked lime, stir, let settle and pour off, use about half a gill to a pint of water,

and let them have no other water to drink. Two teaspoons of Radway's Ready Relief in one pint of water will do as well. Do not give your chicks raw meal dough always scald it, and let it cool before feeding.

INCUBATORS.

C. J. B.—What do you think of incubators? Are any of them worth bothering with?
Rodney, Iowa.

I think the incubator is a blessing to the poultryman, and there are many worth bothering with. I have a good one just now, manufactured by the Gerred Incubator Co., Toronto. I am perfectly satisfied with it. I had such poor success in former years with an incubator that I got this one before having my brooder house built (I am on a new plan this year) because I thought I would not go to that expense until I had a good, reliable incubator. I have tried this one and subjected it to various kinds of treatment, and shall build my brooder house this fall, ready for the next spring's operations, if nothing unforeseen happens, so you will see I think the incubator a good thing.

P. B. CHICKS WITH DARK TINGED LEGS.

I purchased a sitting of Banded Plymouth Rocks from a well known breeder. I have eleven fine chicks but the front of their legs is tinged with black. Are they pure? Will the dark tinge fade as they mature? I never before noticed such on any chicks I have raised.

The front of legs being tinged with black does not signify, most likely they are pullets. The dark tinge will gradually disappear in any case. They are no doubt pure bred, if purchased of a "well-known breeder."

Winter layers you say moult early. Is it possible to promote early moulting?

It is possible to promote early moulting. To do this separate the sexes and put the birds to be hastened into warm quarters, especially keep warm at night time if the bird is old. Give warm food, but not too much of it when first the birds are put in. After they have been penned a few days give them plenty of nourishing food, and when the feathers begin to fall feed meat, cut cabbage and hemp seed. These are all rich in feather forming food, and will make the new plumage come out quickly.

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We want every poultry fancier or breeder in the country on our list of subscribers, and to them we make the following liberal offer:

There are none of you but either have something for "sale or exchange" or some "want," and we offer to all who send us \$1.00, subscription to the CANADIAN BEE JOURNAL AND POULTRY WEEKLY for one year, a

Free Trial Advertisement

in the "Exchange and Mart" column of the C. B. J. & P. W. Upon receipt of One Dollar we will credit you one year ahead on our subscription list, and will insert at any time during the next six months a FIVE-LINE advertisement as above, for two consecutive weeks.

Cash must accompany the order.

If you do not need the advertisement at once we will, on receipt of your remittance, send you a coupon, which will be good at any time during the continuance of this offer.

It applies to anybody and everybody who desires to take advantage of it, and who conforms to the conditions, viz - pays one full year in advance.

Our regular price for such advertisements as this is 25c. per week, per insertion, and should you wish the advertisement longer than two weeks, it will be charged at the above rates or five times for \$1.00.

Do not delay in taking hold of this grand opportunity.

THE D. A. JONES CO. Ld., Beeton,

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TO READERS.—There is one way in which you can materially aid us, whether you are a subscriber or not, and that is in mentioning this WEEKLY when answering advertisements.

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—FOR THE—

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My Stock is A1. Eggs in season \$3.00 per setting, two for \$5.00. Birds for sale at all times. At the late great Ontario Show, held in St. Catharines I exhibited 15 birds and obtained 13 prizes. Send for Circular.

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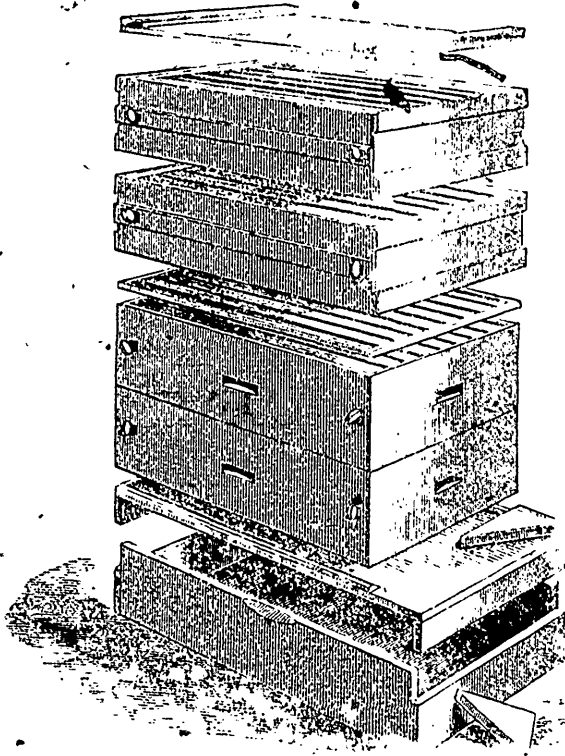
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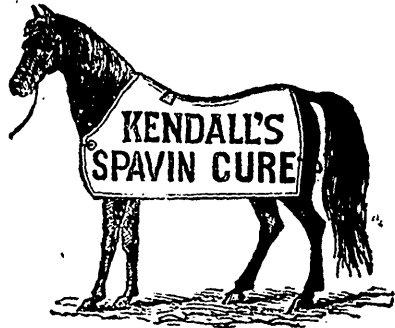
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