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THE CANADIAN

Honey Producer.

Its Reading Columns for the advancement of Honey Producers exclusively.

Vol. I.

BRANTFORD, JUNE, 1887.

No. 4.

The Canadian Honey Producer,

PUBLISHED BY

E. L. GOOLD & Co.,

BRANTFORD, - - - - ONTARIO.

Published Monthly, 40 cents per year.

TO CORRESPONDENTS.

The Subscription price of the Canadian Honey Producer is 40 cents a year. 3 subscriptions at one time, \$1.00 to one or more addresses. For further particulars see our Premium List.

Remittances for fractions of a dollar may be made in Stamps, Canadian or American. The receipt for money sent will be given with the address in the next issue of the paper.

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TO CONTRIBUTORS.

We will always be pleased to forward sample copies to any.

We will thankfully receive for publication items of interest to Bee-Keepers, and we would like to have every issue of the paper contain at least one good article bearing directly upon the management of the Apiary for the coming month.

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H. CUPPAGE.

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THE CANADIAN HONEY PRODUCER.

Vol. 1. June, 1887. No. 4.

A season such as the present, brings out prominently the advantages of comfortable quarters and packing for bees.

The changeable temperature combined with strong winds and sunshine have made sad havoc with colonies, which in March promised to be in good condition for the honey flow. The advantages of packing are not only to enable the colony to retain the heat developed, which is no mean factor in successful springing, but they are not so readily induced by the warmth of the sun to leave the hive when the day is otherwise chilly and unfavorable. The colonies which have suffered most are those which have been improperly wintered, having their vitality exhausted, and are unable to resist adversities. Of these those which have been brought earliest from winter repositories are in the worst condition.

Bees so improperly wintered and set out early have not done well. During May however the weather has been very favorable; bees have built up remarkably well; honey and pollen have been abundant and many bee-keepers report prospects of swarming in the immediate future. One bee-keeper on the 10th of May had a colony gain six lbs. Many colonies will, providing the weather remains favorable, store considerable from apple blossom. Many find it an advantage to prevent swarming as long as possible, then when the swarm has issued to place the old hive on a new stand and place the new hive and swarm on the old stand, this increases the working force at the expense of the parent colony which latter generally for the time being becomes so depopulated that it does not cast a second swarm and the yield

of honey is increased in the new swarm.

As the extracting season approaches it will not be out of order to place before bee-keepers the evils of extracting honey before ripe. The temptation to the beginner is great to do this; he does not see the disadvantages and the difference between capped and uncapped honey. He does not know of the injury which has been done, and hinderance to the development of the honey market, but only of the large quantity of honey secured. There is no doubt that when such inferior honey has been tasted by a family for the first time and they have been strangers to honey heretofore, they decide that honey is after all not so delicious and we cannot be surprised that their explorations in this direction cease, nor do they find comb honey so vastly superior to extracted.

Generally Canadian and American bee-keepers have ceased taking honey from the body of the hive alone. The advantages of the tiering up system are very manifest. When extracting from the body of the hive alone, the chamber becomes overcrowded if honey is allowed to ripen, then at an extracting the honey has to be taken out so closely that should the flow cease directly after, the bees if not left in a starving condition are at least in a condition totally unfit for winter without feeding which latter has always to be accompanied with loss. In the tiering up system, the brood chamber during fruit bloom should be watched and freed from too much honey, and ample room given to the queen for laying. If upper stories are put upon the hives, care should be taken that any honey stored be extracted before clover yields freely as negligence in this often leads to the deterioration of the entire first extraction.

Many beginners may ask when should honey be ready to extract? In reply to this we may say when capped and sometimes before. We will suppose a case. Honey has been coming in and it has been ripened as brought in. In such a case the cells partially

filled with honey have a peculiarly glossy appearance and we are perfectly safe to extract.

We have been through the press severely censured for our editorial in the May number of THE CANADIAN HONEY PRODUCER, pages 51 and 52, and are charged with making "slipshod, untrue and invidious statements." We would here say that in regard to the Colonial Exhibition management we have nothing to withdraw, and are prepared at the proper time to prove all statements made in reference to the matter. We do not stand alone when we advance the opinion that our annual grant may justly be expended in assisting to open out a foreign market and thus relieve bee-keepers of Ontario of their product and give a new impetus to bee-keeping in Ontario. We would suggest, however, that the one who has taken upon himself to speak of our action in language so strong that it condemns himself should write to the Honorable Commissioner of Agriculture and ask if it would be wise to expend the grant to enable "a few to secure big prices for their product." Such a communication would perhaps have the effect of securing a reply to the satisfaction of the enquirer however much it might be the means of causing bee-keepers at large to suffer. This paper is not conducted in name only but in spirit in the interests of the bee-keeper, and this question of "British Markets," and how shall they be opened is one too momentous to permit us to take it up in anything but one free from all personal feelings. And for the same reason we cannot permit ourselves to remain silent upon a question of such deep importance.

North Middlesex Bee-keepers' Association.

The following is one of the papers read at the annual meeting of the North Middlesex Bee-keepers' Association, held in Parkhill on March 21st, 1887:—

Why Canadian honey should be more liberally used, by Mr. F. Atkinson.

LADIES AND GENTLEMEN,— In introducing the subject to you why Canada's best honey should be more liberally used. First its pure fine flavor and its great properties for healthiness commends honey for a first place on every working man's table, rich or poor, in this fair Dominion of ours. I am speaking of the best grades of honey, and at the present low price I consider that honey is the cheapest, sweetest and healthiest article of food that can be produced on our lands, and what is wealth compared with health. They are the two leading desires of the human race, and now as we are to have a continuance of the Protective Policy, it behoves every true Canadian to assist an industry that is providing a pure article of food, from the fields or flowers of our own country, and enables Ontario bee fruits to be a lasting commodity in every poor working man's cabin in every land. It has no equal; it has been proven so at London too. We should be found to beat the rose, shamrock, thistle on their own ground, and as for Mr. Yankee, he is no where. Canada's honey is the standard of the world's market, and that is no small feather in the Ontario bee-keepers' hat I can assure you. And now Mr. Chairman, I want to see North Middlesex bee-keepers' honey distributed to every county by the members of this association.

Which is the most profitable comb or extracted honey? by W. Coleman, Devizes, Ont.

To come to any definite conclusion as to which is the most profitable comb or extracted honey, it would require a number of years to prove. Two or three colonies against two or three would be no test, nothing less than a whole apiary, one half run for comb and the other half for extracted, equally strong in bees. I will give you what I know about it, as far as my experience goes. Since I began keeping bees I have raised both comb and extracted, and I find to raise a good quality of extracted honey I can't get much more than I can of comb. Some say they can get twice as much of extracted as of comb. They might if extracted before sealed, but such honey is much inferior to what is extracted after being sealed, and if we don't try to raise a first class quality of extracted honey we need never expect to build up a

honey market. Any bee-keeper can raise extracted honey more or less, but not so with comb. In a poor season I can get more extracted honey than comb, but in a good season I can get nearly as much comb. Still, taking one year with another, the extracted would average about $\frac{1}{3}$ more, but the comb sells more readily and for about $\frac{1}{3}$ more money, and another thing in favor of comb honey, no one will tell you that comb honey is adulterated, while nine-tenths of them will tell you that extracted honey is, and that makes it a drug on the market. I will give you my experience for the year 1885, which I count a poor season: I did not keep an exact account of the number of hives run for comb and extracted honey, but to the best of my knowledge it was about half and half. I got about $\frac{1}{2}$ more extracted, which I sold for 8 cents per lb. in lots of 100 lbs. and over, and I sold the comb honey for $12\frac{1}{2}$ cents wholesale, and the comb honey was nearly all sold before much of the extracted, so that what you gain in quantity you lose in price. I find I can sell comb honey to wholesale buyers while they don't buy extracted honey at all. Another thing about extracted honey is, it will granulate before it is sold, and if you have 3 or 4 tons on hand it is great labor melting, while with comb honey all this labor is saved. From what I have said you will see there are three good points in favor of comb honey. The first is it sells more readily in large quantities, the second, people are not afraid of adulteration, and the third it will not granulate, while it is just the reverse with extracted honey. Now this is my own experience. Another bee-keeper might give you his experience and it might be all in favor of extracted honey.

For the Canadian Honey Producer.

MANAGEMENT OF THE APIARY.

G. W. DEMARRE.

Quite a number of Apicultural writers have derisively said of some bee-keepers, that they expect their bees to "work for nothing and board themselves." At the risk of being sneered at, I wish to say here, that I am one who believes in making my bees work for nothing and furnish their owner with board.

I shall furnish my bees their lodging, but they must board themselves. This is the only way in which bees can be made profitable. I do not mean by this that my bees are left to starve if they run short of stores. I mean to say that my *apiary* must be self-sustaining. The farmer who would undertake to run a large farm and buy feed for all his live stock, would be considered a madman, and so I think with the bee-keeper who proposes to sell all the honey gathered by his bees, and depend on buying food for their support. Who knows what it will take to board a strong colony for a whole year. I know enough about it, to settle the conviction in my mind that I would not furnish board for any colony of bees I ever saw for a whole year, for the colony in fee simple, at the end of the year. Hence my bees must board themselves, and work for me besides, and under my management and control. When it comes to controlling and managing the apiary, modern *sentimentality* has been in the way of progress in this direction. It won't do to kill bees in this enlightened age, but it will do to kill cattle and fowls, &c. How absurd and inconsistent men can be. I purpose to be consistent. I at an early period of modern bee culture, was somewhat carried away by the false sentimentality so industriously taught by certain bee periodicals in those days. In those days I would run the risk of being stung by a bee when entangled in my hair or whiskers, rather than to kill it. That is all past now, a bee must be in a hurry if it stings me in that way now. When a bee gets into my hair I smash it as quick as lightning. But I will not kill bees carelessly when handling them. It hurts my humanity to see any thing carelessly and recklessly killed. But this is no reason why I should not manage my bees to the best advantage, even though it costs the lives of the surplus bees. If my bees increase on my hands, it is my duty to govern the matter, and it is perfectly legitimate for me to do so. It is only a question as to the best method how to control increase. When I first began to experiment in this direction, I thought it might become necessary to kill off the surplus bees; and that it would be proper and legitimate to do so if necessary, I had no doubts. But I found that it was not necessary because the desired end—that is

the suppressing of undesired increase could be reached without direct slaughter of the bees. And then there was another point to be gained, and that was the advantage of the "Swarming energy." My plan in a nut shell is this, when I have as many bees as I want, and therefore want no increase, I proceed to turn the energy of the *prime* or first swarms into surplus honey, and wear the bees out in that way. The plan may be varied, but I proceed as follows:

I prepare a standard Langstroth hive—a good movable frame hive will do—as follows: for an average size swarm—four empty combs are placed in the centre of the hive, and the space on each side of them are filled with common division boards, the division boards are cleated at their ends, or have nails driven in their sides near each end so as to make them stand $\frac{1}{2}$ inch apart, or just as the frames hang in the hive. The advantages of this will appear further on. I now have a brood chamber as pertains to *comb surface* worn to large for a near nursing nucleus, but I have a full sized brood chamber as to the passageways to the surplus cases. I regard this a matter of much importance. On top of the brood chamber goes a metal queen excluder and on this the first tier of the surplus cases rest. The hive is now ready; when a swarm issues the prepared hive is set on the old stand, while the old hive is moved back of the new one and so as to be partly hid by the new hive when standing in front of the latter. The old hive is partially disguised for a few days by spreading a cloth about it. This is necessary as the hives front both the same way. The swarm is hived in the prepared hive on the old stand, and this will draw off all the field workers from the old hive.

If the old hive has a surplus case on it at the time the swarm issues, as they nearly always have in my apiary at swarming time, this is transferred to the new hive at the start as the old hive will not be in condition to store surplus for some time. Now on the seventh day after the swarm issues I take out the frames, one at a time, and shake off the bees in front of the new hive, leaving just enough bees in the old hive to protect it till others hatch, most of the brood will be sealed by this time. The old hive is now given

a new location in the apiary, and is safe from any after swarms.

The "swarm" in the new hive will give their entire strength to storing surplus honey, the small brood nest being very little hindrance to them. At the close of the season the surplus honey is all taken, and the bees are left to slide down to near nuclei to be disposed off as such at the close of the season. Some times the "Contracted" swarms will swarm again, if the queens are old, in which case I cut out the queen cells and put them back. This generally ends it, as the season will likely close before they try it again.

Christiansburg, Ky.

Meeting of the Brant Bee-Keepers' Association.

The second quarterly meeting of the Brant Bee-Keepers' Association took place at the Court House, Brantford, on Saturday, May 28th, at 2.30 p. m.

Among those present were W. R. Brown, John Inksatter, D. Anguish, D. Dawson, J. R. Howell, S. A. Dickie, S. McKay, R. F. Holtermann. The president, W. R. Brown, occupied the chair.

After reading the minutes of the last meeting, and completing business of no great importance, the question of foul brood was brought up, its probable spread and how to prevent it. The symptoms were discussed and the brownish roapy appearance of the matter in the cell described. The modes of cure were variously described. The destruction of the colony was advocated. As some thought that the danger of spreading to other colonies in one's own yard or those of neighbours was so great that such a method pursued would be the best remedy to cure the disease.

The starving process is to drum the bees slightly so all will be filled with honey alike, to shake them from their combs leaving only a few bees to take care of the brood. The bees taken from their combs are put in a dark room in a hive with a wire screen over them, and allowed to remain until some are starved which shows that the remainder are about in the same condition. This stage is reached in about seven days. The bees should then be placed upon frames filled either with comb

foundation or combs free from disease. When the brood hatches from the combs which are diseased the remaining bees should undergo the same process, the combs are rendered into wax and the hive scalded and washed with a solution of carbolic acid.

The object of the starving process was to take from the bees all the honey which could carry the germs of the disease. Putting them on empty frames was mentioned. In this way the bees had no place to store the honey they carried with them, and were compelled to consume it or use it for wax forming, this was considered an excellent way to get rid of the disease.

So far no one had the disease, and the association resolved to make every effort to prevent its spread should it appear.

The question of robbing was taken up. S. Dickie and W. R. Brown contracted the entrance. Another found that a coal oil rag placed at the entrance stopped them effectually. Another mentioned that putting flour on the robbing bees would enable one to find out where the robbers came from and if they were in the same part of the yard exchanging the two hives. S. McKay stated he did not think brood chilled as easily as people thought. Early in April the sheep had thrown a box hive over on its side and the cold wind had blown directly into the combs all night. He had watched it and found no chilled brood. Opinion varied as to the necessity of contracting entrances, The general impression however, was, that to economize heat it was well to contract. If the contraction was properly and systematically kept up it was an advantage.

Winter reports were next brought up. All present wintered without very heavy losses; The loss being about 15 per cent. Mr. S. Dickie, of Brantford, stated he had already secured 28 lbs. of section honey from one colony. R. F. Holtermann stated that eleven days ago he was at a wedding at Mr. S. T. Pettit's, President of the Ontario Bee-Keepers' Association, and they had some nice section honey taken this season.

What to do with old combs and hives was asked. Mr. McKay said he would put the combs in the centre of the brood nest and foundation in the outside. Another said he would put starters below and when they had

started well put on the honey board and an upper story. The combs as built below could be used for brooding. As built the upper story would catch the honey flow. Another advocated putting the old combs on the outside of the brood chamber and starters in the centre. In this way the bees would be less liable to build all worker comb, and less liable to fill the brood chamber with honey.

To prevent increase was taken up. Mr. Birkett stated he broke down queen cells when second swarms issued and returned the swarm. Thus he had no trouble in keeping down swarming. Another stated he kept down excessive swarming by placing the second swarms immediately behind the parent colony until the evening of the second day when he united all. This generally prevented all swarming for the remainder of the season. Examining the brood chamber was too much work in the swarming season for many. What should be done if a good colony was queenless in the spring was asked. John Inksetter advocated wintering it with a weak queenless colony. S. Dickie said he liked giving such a card of brood as would enable them to raise a queen of their own. The advisability of sending south for a queen was questioned, as its immediate shipment was uncertain and the general opinion was that bee-keepers' should avail themselves of their own resources as they existed and not depend on prompt shipment of queens. It was decided that the members of the association should make every effort to make exhibits of honey at the fall shows. Mr. Inksetter's exhibit of honey at Paris, the previous fall, was especially praised.

The meeting then adjourned to convene at the Court House on Saturday Sept. 3rd, at 2 p. m.

Report of Wintering Bees for 1887.

D. P. NIVEN.

Put into cellar between Oct. 27th and Nov. 5th, 40 hives of bees averaging 21 lbs. of honey to the hive. Took out this spring between 2nd and 6th of May, 39 hives all right having consumed 12½ lbs. of honey to the hive on an average. The lowest amount consumed was 9 lbs. the highest 17 lbs.

Average temperature of cellar for the winter was 45°, of the two lost one was gone by starvation before noticed, the other with dysentary and become queenless. Never had such a favorable springing of my bees before, having got them out just as the red maple came into bloom and the weather being so warm and honey so abundant from the maple I have had to put on surplus cases to keep the bees from filling the brood chambers so as to crowd out the queen.

My cellar was ventilated with a pipe of 5 inches diameter to the kitchen stove, no cold air pipe, never had so many dead bees on the floor as the past winter yet never came out so strong with bees and brood hives uncovered and having wool quilts as advised by Corneil.

Spring Session of Oxford O. B. K. Association, held at Woodstock, May 21st, 1887.

J. E. FRITH, SEC'Y TREAS.

After the usual order of opening, &c., the members entered heartily into the discussion of the following topics:

MARKETING HONEY.—The matter of Foreign marketing was more particularly considered. Mr. Hall gave a detailed account of what had been done towards opening up the English Markets to Canadian honey. He said that our honey was well received there; that very favorable opinions were already formed regarding the Canadian product, and that if we could guarantee a constant supply of No. 1 honey there was no reason why a permanent market could not be made in England. Mr. F. Malcolm, a pioneer cheese maker in Oxford, gave a very nicely condensed history of the development of the cheese market in Britain. He apprehended that difficulties and disappointments would necessarily follow the effort. Similar difficulties had been bitterly experienced in the progress of the cheese trade, but to-day the English consumption of cheese produces the Canadian Market. He hoped and even looked forward to the time when Britain would be our great honey market.

No one, however, seemed willing to general a market campaign. Some of the plans which have already been proposed were

casually talked over. Selling through English commissioners was thought most practicable.

FOUL BROOD.—Mr. Frith, gave a detailed account of its progress in his apiary. He had caught it from a neighbor who had had it for sometime before knowing that he was a victim to the ravage of foul brood, and perhaps not realizing the damages it might do his neighbors, had kept *num* for some time even after he had lost all his bees. After putting his bees into winter quarters last November, Mr. F. accidentally discovered that he had been exposed to foul brood for upwards of two years. On removing his bees from the cellar this spring, he found that three colonies had succumbed to the disease and that to date he had found four others affected. These facts created considerable earnestness and anxiety regarding the disease. All the known methods of cure and precaution were liberally discussed. The Cheshire McLean and starvation methods were suggested and Mr. Frith left to hold combat with the dread malady.

It was generally wished that foul brood would sooner or later be brought under the quarantine laws of Canada.

Mr. Hall stated in behalf of a committee appointed in Dec., to confer with the O. B. Keepers regarding this matter, that so far nothing had been done.

INSURANCE.—Some members had asked to be insured against fire while bees were in winter quarters and had been for the time refused. The company not knowing on what plan bees could be insured. No satisfactory answer was given. (Perhaps some of the readers could answer.)

LOOSE BOTTOM BOARDS.—Mr. Malcolm and others found loose bottom boards very convenient in spring in cleaning hives of dead bees. No one reported on solid bottoms.

RAISED HIVES.—Mr. Malcolm had tried several colonies raised from the bottom boards. He found such hives free from dead bees on the bottom in the spring. These colonies compared very favorably with those not raised. He could not say that much was to be gained by the method. He found no difficulty in removing these hives from the cellar. Dr. Duncan, Mr. Hall and others gave some experiences in having bees piled close to

cellar walls. The losses next to walls had been such as to warrant a distance of at least eight to twelve inches between stone walls and the hives.

nearer than eight to twelve inches to stone walls.

WINTERING.—Generally good. Those with temperature from 48° upward and with draw off ventilation pipes to cellars had wintered the most successfully.

Experiences in spring dwindling were varied as well as losses.

Mr. Frith showed a sample of honey sent him from an Ontario honey producer. The honey was warranted to never granulate. The producer professed to have a secret method of canning it. After tasting and otherwise testing, the unanimous verdict was that said sample was sugar syrup slightly adulterated with honey.

Mr. Eden showed a very ingenious machine for sticking starters in sections. The work is rapidly and well done.

A motion that we meet with the O. B. K. Association next winter was enthusiastically carried. We look for and expect a rousing good time. The meeting adjourned to meet as above.

Princeton, Ont., May 21st.

WINGS AND FLIGHT.

The following is from "Bees and Beekeeping, scientific and practical," a work by Frank R. Cheshire, F. L. S., F. R. M. S. We would strongly recommend all Bee-Keepers who wish to have an insight into the nicer points in bee-keeping to secure a copy of this work. We have ours direct from England.

The four membranous wings of hymenopterous insects, articulated in pairs into the meso- and meta-thorax, are formed in the chrysalis from vesicles, or flattened pouches, extravasated or pushed out from the epidermal layer, and which are brought into form by a series of interior tubes of chitine, called, in the mature organs, nervures, to divide both anterior and posterior wings into cells.

When, by re-absorption of the contained nutriment fluid, the two facing membranes of each flat pouch are intimately joined, they

become the transparent extension of the wing, stretched upon the nervures, which form its stiffening framework. The hollow nervures are never wholly deprived of blood, while through them run large tracheæ, which, at the exit of the bee from the cell, aid it in giving that full expansion to its new organs which their office demands. As the eye has left upon it the marks of its method of development, so the wing gives traces of its origin. The microscope shows that it is dotted over on both sides by small, stiff hairs with an expanded base, while very careful examination reveals that the whole surface is divided, by faint, angular lines, into small areas, which indicate the boundaries of the primary cells, upon the middle of each of which stands a single hair.

Every wing—be it of bat, bird, or insect—that is capable of acting effectively as an instrument of flight, must, in area, bear some definite proportion to the weight of its possessor. The common bluebottle, a dipterous insect, somewhat less than the honey bee, has its single pair of wings of such a width and so placed that their points are 2-5in. apart when at rest. Had the bee been similarly formed, its wings would have barred its entry to its own cell, which is only 1-5in. in diameter; so that cleaning, filling, and emptying of comb, feeding of brood, and many other essentials, would have been impracticable. This difficulty, however, is exquisitely met by the necessary wing-surface being made up by two pairs, an interior and a posterior, which lie one over the other in repose, so that they occupy but little space, their two points in position only covering a width of fully 1-6in. Other hymenopterous insects have, in this respect, a like structure, and for identical reasons; the ant travelling through narrow galleries, the wild bee in its burrow, and the wasp in its cell, being able to so place their wings that they offer no impediment to their home movements, while the neatness of their packing is in itself a security against damage. The queen of the bee-hive, indeed, proverbially carries her wings very closely set over the back, for the greater length of her life demands the greater care; and so the gauzy membranes, in her case, are capable of sustaining the wear of three or four years, yet remaining good enough for duty.

Presently we shall discover that the rate of vibration given to the wings during flight is prodigious, and then the division, so valuable during repose, becomes an impediment, for the air cannot be so efficiently beaten by two narrow wings as by one of their united width. And here, again, a device, charming in its mechanical simplicity and perfection, presents itself. The inner margin of the anterior wing is folded under, in a plait, while a series of minute blunt hooks are turned up upon the outer margin of the under, or posterior one. As the anterior (upper) wing moves outwards into position for flight, its down-turned plait passes over the upper surface of the lower wing, and is caught by the upturned hooks, and now the two wings, welded into one, strike the air: but, at the moment the flying insect settles, these, by falling back into position, become immediately free, since the plait simply slips from the hooks, and the wings take up their superposed position.

The hooklets decrease in size in beautiful gradation towards the wing point—the largest are about 1.400in., the smallest, 1.650in., in length—but they are not always the same in number on the two sides of the body. The posterior wing is, most suggestively, not absolutely flat, but convex above, in the direction of its length, so that its hooklets are held up towards the plait on the anterior wings, the hairs just behind which turn in a direction different from the rest, so that the movements of the hooklets shall meet with no impediment. How well Nature rewards looking into even the smallest matters!

A comparison of the sexes is again instructive. The queen is commonly said to have smaller wings than the worker. Yet this is only true relatively, and clearly for the reason that she has much less frequent use for these parts than her over busy children; but the drone, lighter than the queen, is endowed with that soaring power and rapidity which his function renders necessary, he possessing organs of flight far larger than hers, and which extend beyond the extremity of the abdomen. The measurements are given in one hundredths of an inch.

	Length of Anterior Wing.	Length of Posterior Wing.	Ratios of United Area.
Worker	38	28	5
Queen	41	29	6
Drone	49	35	9

The remarkable strength and width of the inferior wing of the drone gives an intimation, which observers should keep in sight; for we shall see presently that this enables him to fly *backwards* with great energy, should such a necessity arise. The relative perfection of the organs is well indicated by the hooklets; and here, again, we find the drone in the van, and the queen in the rear. The queen's hooklets vary considerably in number, ranging from thirteen to twenty-one; the worker's, nineteen to twenty-three; the drone's, twenty-one to twenty-six.

Bees are accomplished fliers, but they never traverse the air with the same directness as many birds, so that the expression "bee line," used by bee-hunters, needs to be accepted in a modified sense. It is their habit to skim along, in extended sweeps, alternately curving to right and left. The rapidity of their aerial voyages is difficult to calculate. Stories have been detailed of their darting in and out of the windows of a train, in rapid movement, but these furnish no evidence of their velocity when unaided, since the train carries the air lying in its neighbourhood along with it, as leaves and paper scraps frequently make clear. My own observations lead me to suppose that the pace ranges between two and sixteen or eighteen miles per hour, depending upon the load and the nature of the errand—a bee, bearing the body of a deceased sister from the hive, taking the funereal pace, while those issuing forth on business bent, go express.

We must now turn our attention to the means by which the mere *flapping* movement of the wings is made to translate the creature through the air, forwards or backwards, at any velocity less than its maximum, and in any direction it may desire.

If the bee were only able to fly forwards, her plight in its measure would resemble that of a steamship which could not reverse her engines; *they* might be stopped, but *she* would remain under weigh, to possibly compass her own destruction ere her initial velocity had become expended. But a little attention in an apiary will make evident that bees *are* competent to wing their course backwards. As young ones come out for their first airing in the warm mid-day sunshine of spring, they fly constantly looking to the

hive door, advancing and receding in curves, so that the head frequently follows the body. If a bee be watched, too, honey-gathering—*e. g.*, on an apple-tree—she flies rapidly from flower to flower; but at the exact moment, her hasty advance is suddenly and mysteriously checked, so that she plies her quest by a touch of such measured delicacy, that no filament, however tender, is broken, and no petal unduly pressed. But by what means is this sudden stopping, or this backing, secured? And here we get a deeper insight into the meaning of the small wings than that previously gained; for, although it is clear that they considerably aid in sustaining the bee, from the fact that she can fly *down*, but not *up*, after their removal, yet they subserve other purposes, by adaptations which cannot fail to strike us as unspeakably beautiful.

National Bee-Keepers' Union.

The annual report of the above society is before us. Under the able management of Mr. Thos. G. Newnan, 925 West Madison St., Chicago, Ill., the society has done a good work. While not too anxious to rush into litigation, he has by his firmness and decision been enabled to bring several cases to a successful issue, without the courts, and every case in the courts has been won with the society. There are at present 324 members. The constitution is as follows:

ARTICLE I.—This organization shall be known as the "National Bee-Keepers' Union" and shall meet annually, or as often as necessity may require.

ARTICLE II.—Its object shall be to protect the interests of bee-keepers, and to defend their rights.

ARTICLE III.—The officers of this Union shall consist of a President, five Vice-Presidents, and a General Manager (who shall also be the Secretary and Treasurer), whose duties shall be those usually performed by such officers. They shall be elected by ballot, and hold their several offices for one year or until their successors are elected and installed: blank ballots for this purpose to be mailed to every member by the General Manager.

ARTICLE IV.—The officers shall constitute an Advisory Board, which shall determine what action shall be taken by this Union,

upon the application of any bee-keepers for defense, and cause such extra assessments to be made upon all the members as may become necessary for their defense.

ARTICLE V.—Any person may become a member by paying to the General Manager an Entrance Fee of ONE DOLLAR to the Defense Fund, and an annual fee of 25 cents, for which he shall receive a printed receipt making him a member of this Union, entitled to all its rights and benefits. The annual fee shall be due on the first day of July in each year, and MUST be paid within 30 days in order to retain membership in this Union.

ARTICLE VI.—Donations of any amount may be made at any time to the Defense Fund, in addition to the entrance and membership fees and the regular assessments made by the Advisory Board.

ARTICLE VII.—The Defense Fund shall be used for no other purpose than to defend and protect bee-keepers in their rights, after such cases are approved by the Advisory Board, and shall only be subjected to Drafts regularly made by the Advisory Board.

ARTICLE VIII.—The annual fees paid by members shall become a general fund, from which shall be paid the legitimate expenses of this Union, such as printing, postage, clerk-hire, etc.

ARTICLE IX.—Meetings of this Union shall be held at such times and places as shall be designated by the Advisory Board, or upon the written requisition of ten members.

ARTICLE X.—This constitution may be amended by a majority vote of all members at any time.

Mr. Newman states: There are three lawsuits now on hand which will soon be tried, and the Union will need all its available funds to bring them to a successful issue.

Notes to Beginners.

Do not endeavor to secure increase. Many permit their colonies to increase to such an extent that all are in a condition unfit for wintering and heavy losses are often the result. In this way no surplus honey can be secured. Double your colonies and then make every effort to prevent any further increase. Those having only a few colonies can after the first swarm has issued break down queen cells and prevent further increase, leaving one good

cell upon the combs which shall give a queen to the hive.

The old queen issues with the first swarm.

Do not clip a virgin queen's wing, many have made this mistake and as the queen is impregnated on the wing she is valueless.

Give your hives ventilation and shade

Do not purchase a movable frame hive without comb foundation to enable you to get combs straight in frames and sections. The bees will not build their combs straight in the frames without the use of starters and unless the combs are such the hive is worse than a box hive.

Smoke your bees as little as you can ; too much smoking makes the bees pour over the sides of the hive, they get irritable in disposition, and if at a time of robbers they are more liable to be attacked directly afterwards and with success.

To raise the back part of the cover of the hive sufficiently to permit of a current of air passing through will often stop bees hanging out at the entrance and be of great benefit to the colony.

A REPORT.

S. P. HODGSON.

Our bees have come through winter quarters in splendid condition. We wintered part on summer stands in saw-dust hives, and part packed in saw-dust in a shed made for the purpose. They have been very lively gathering in pollen since about the middle of April. The season seems to be about two weeks later than that of last year, although the prospects for a grand season in the apiary cheer us exceedingly, every hive being strong and covering 8 or 10 frames.

Horning's Mills.

A Visit from Britain.

We are pleased to inform our readers that Mr. T. W. Cowan, F. G. S., F. R. M. S. editor of the *British Bee Journal* and prominent writer and British Bee-Keeper, also President of the British Bee-Keepers' Association which has a membership of over 10 000 expects to visit Brantford this summer where he will lecture on bee-keeping. This will be an event of interest to all, and the bee-keepers of Brantford will make every effort

to make Mr. Cowan's visit a pleasant one to him to show in a small measure their appreciation of his kindness.

Another Injunction.

The Injunction on the City Council of Arkadelphia, Ark., to prevent it from ordering the removal of the bees from within the city limits, was sustained. Mr. Clark writes as follows concerning it :

The Judge ruling that he did not have any right to take up the case and enjoin ; stating that he did not know what the Council intended to do, and that the mayor might not fine me for keeping bees in the city limits ; and if he did, then it would be time enough for me to ask for an injunction.

My attorney urged the plea that I wanted to obviate being fined and harrassed. If this case goes against us, it will work a hardship on all bee-keepers in incorporated cities and towns. Now is the time for us all to rally to the front and work to gain this case. If it goes against me it will work a hardship on me, as I have a wife and two small children that are looking to me to row the boat safely.

The Union will stand by Mr. Clark in this matter, and see it through, for it would be very detrimental to the pursuit to allow a decision against bee-keeping to be put upon record on its plea of its being a "nuisance."
—*The American Bee Journal.*

The St. Thomas *Daily Times* of Wednesday, May 18th, contains the following :—

A pleasing incident graced the residence of Mr. S. T. Pettit, of South Dorchester, on Tuesday, May 17th, his daughter Lois being united in marriage to Mr. R. F. Holtermann of Brantford. Rev. C. C. Cougens, of Belmont, performed the ceremony. Miss R. Beatrice Pettit, of Alma College, supported the bride, and Mr. A. E. Shuttleworth, of Guelph, the groom. The bridal pair left on the afternoon train for their home in Brantford.

KIND NOTICES.

We are indebted to the following for kind notices of our publication ;

Gleanings in Bee Culture, published by A. I. Root, Medina, Ohio. Canadian Live Stock Journal, Hamilton, Ont. The Bee Hive, by E. H. Cook, Andover, Conn.

From the British Bee Journal.

FOREIGN.

I have occasionally noticed in Bee Journals expressions of dissatisfaction from correspondents with the awards made by judges at some of our exhibitions. Possibly they may have had just cause for being dissatisfied. On the other hand, I may remark, it is no unusual occurrence to find exhibitors dissatisfied when they have no reason to be so. That errors in judging do occur few will deny; and with a view to lessening such I have prepared the enclosed Guide, which I venture to think will (if followed) be effective.—R. R. GODFREY, Grantham.

Points to be considered in the Judging of Extracted or Run Honey, with a Standard of Marks obtainable for each point, and remarks on quality desirable as a standard of excellence.

		Marks.
1. <i>Flavour.</i>	Full and palatable...	25
2. <i>Condition.</i>	Clear, free from debris or sediment, and of even consistency	21
3. <i>Density.</i>	Thick but liquid, free from appearance of candying	18
4. <i>Colour.</i>	A deep, bright amber	15
5. <i>Bouquet.</i>	Fragrant and pleasing	12
6. <i>Form shown.</i>	Attractive, neat, clean	9
Total.....		100

Honey that may be candied should, however, not be passed, from the fact that it is so, should it have other desired qualities.

Points to be considered in the Judging of Comb Honey.

		Marks.
1. <i>Flavour</i>	25
2. <i>Density</i>	18
3. <i>Colour</i>	15
4. <i>Bouquet</i>	12
(Remarks as for extracted honey.)		70
5. <i>Completeness.</i>	Combs fully worked out to section—comb well attached to top, sides, and bottom, all cells even and regularly sealed, nice delicate colour and dry, preference to those produced with least trace of guide-comb.....	21
6. <i>Form shown.</i>	Attractive, neat, clean	9
Total.....		100

CHILI.

EXPORTS OF HONEY FROM CHILI IN 1885.

FROM	TO	KILOS.	KILOS.
Valparaiso	} Great Britain	{ 190,935	: 322,511
Talcahuano		{ 131,576	
Valparaiso	} France	{ 247,389	: 295,692
Coquimbo		{ 12,150	
Talcahuano		{ 36,133	
Valparaiso	} Germany	{ 403,835	: 405,705
Talcahuano		{ 1,870	
Valparaiso	Pern	920	: 920
"	Uruguay	25,700	: 25,700
"		1,692	
Coquimbo	} for ships' stores	{ 135	: 5,189
Talcahuano		{ 2,002	
Coronel		{ 1,360	
Total exports in 1885.....		: 1,055,717	
" " 1884.....		: 1,864,761	
Decrease in 1885.....		: 809,044	

Sundry Items.

Ira Orvis, Whitby, Ont., writes April 27th: It is very cold for the time of year. Our bees have gathered no pollen yet.

Wm. Couse, Meadowvale, Ont., Secretary of the Ontario Bee-Keepers' Association, we are pleased to learn has purchased a new stock of bees and will conduct an apiary for himself this season.

Rev. D. P. Niven, writes, April 28th: Have no bees out of the cellar yet as the weather is too cold.

D. Anguish of Mohawk, states under date May 5th: Bees very strong, doing well, and some colonies are building comb between the top bars and quilts.

The refreshing showers are very beneficial to clover, and we may expect a prolonged flow from that source.

Linden trees are loaded with blossom in the bud, true this does not promise an abundant flow, but it is a step in this direction and for several years linden has given it but a slight surplus.

We are in receipt of a fine shipment of bees, from Eckerman & Will, Syracuse N. Y. We can recommend all requiring such to deal with this firm.

Queries for June Number.

Unlike others, our queries will be published in the issue previous to the one in which they are answered. We solicit replies from any who have had practical experience, and can reply from that. Questions are solicited. All replies should be in at latest by the 15th of the month if possible. The query will be republished in the following issue with replies.

No. 7. When is honey in a fit condition to extract from the combs when extraction is done from an upper story.

I extract when the combs are half sealed or more in extracting from upper stories, two upper stories should be used when the first story is nearly filled raise it up and put one on between it and the brood chamber, when the upper one is nearly sealed. Do not ruin your market by offering thin unsealed honey, extract it, raise the centre one to the top and put the one just extracted between it and the brood chamber and so on through the season. Do not if you can give them room be afraid of letting them seal too much, more sealing the better. This in my opinion is the only proper way of taking extracted honey.—Will Ellis, St. Davids, Ont.

When all sealed over.—D. P. Niven, Dromore, Ont.

When it is capped leaving it with the bees until September greatly improves the honey.—S. T. Pettit, Belmont, Ont.

Unless pains be taken to thoroughly ripen afterward, it should never be extracted till nearly or quite all capped. I prefer to extract just as the bees begin to cap it, and then refine it fully afterward.—A. J. Cook, Lansing, Mich.

When it is two thirds sealed or better if it is all sealed.—Martin Emigh, Holbrook, Ont.

Honey is perfectly seasoned when capped over, but it will keep very well when half capped, if you leave it until all capped in one super the bees will prepare to swarm.—Dr. Duncan, Embro, Ont.

Usually when the cells are sealed the honey is "ripe" enough to be extracted. Some of the authorities say that the nectar may be extracted before any cells are sealed, and then evaporated by exposure to the air, and lose none of the aroma of the flowers, which is always a distinguishing feature of good honey. I think differently. There is no

place equal to the hive for making good honey and we had as well make a note of it.—J. M. Shuck, Des Moines, Iowa.

When the combs are full and about one-third sealed over, but much depends on the temperature of the place where the honey is stored afterwards.

When about half the honey is sealed over. If left until all sealed the bees lose time, and if taken before any is sealed it is not ripe enough.—S. P. Hodgson, Horning's Mills.

No. 7. Generally only when two thirds or entirely sealed. When honey however is coming in slowly and is ripened by the bees almost proportionately as fast as gathered, the cells of honey may have a glossy appearance when taking a side view of the comb when thus it may be extracted.—Ed.

No. 8. I am a beginner in bee-keeping. Should I take extracted or comb honey or both. I have six colonies.

If your hive is suitable for comb honey, then I strongly advise you to take both extracted and comb honey.—S. P. Hodgson, Horning's Mills.

Take comb honey, it is usually a better article, and commands a better price, and with improved appliances, the average crop of comb honey will equal that of extracted in pounds.—J. M. Shuck, Des Moines, Iowa.

Better take extracted for a year or two, you will find that it takes a practical bee-keeper to get comb honey. Scientific bee-keeping is not learned in one year. I generally raise about equal amounts of comb and extracted honey.—Will Ellis, St. Davids, Ont.

Both.—S. T. Pettit, Belmont, Ont.

You will probably succeed best with extracted. It takes much skill to succeed very well in securing comb honey, much less to get extracted.—A. J. Cook, Lansing, Mich.

You will find it more profitable to extract your honey, as comb honey requires more supers, &c., and is more complicated to operate for a beginner.—Dr. Duncan, Embro, Ont.

You might try both and see which you like best.—Martin Emigh, Holbrook, Ont.

Take both. A beginner is more likely to secure a crop of extracted honey, but he should learn how to produce both.

It is good to have both.—D. P. Niven, Dromore, Ont.

No. 8. Should advocate taking extracted it requires less skill and experience. Taking both for a few colonies we think would not be to the best advantage.—Ed.

No. 9. What is the best method of getting foundation fastened in frames and combs, built out for and during the honey season.

Use wired frames of foundation, if you want them for brood, place in centre of brood nest, if for extracting in centre of upper story. I have extracted them three days after putting them in.

There is so many different makes of frames it is hard to get a method that would suit them all.—Martin Emigh, Hollbrook, Ont.

Fastening of foundation in frames depends on the make of the top bar, when the top bar is babbited half the thickness lay the foundation on the babbitt, place a thin strip of wood on it and nail with small finishing nails. To get it drawn out the quickest is to put a good swarm of bees in the hive on your foundation—or when your bees begin to work in your super, exchange your cards of comb for foundation one or two at a time.—Dr. Duncan, Embro, Ont.

Don't think I understand the question.—S. T. Pettit, Belmont, Ont.

I have not a comb in my yard that is not wired. I use No. 26 wire all No. 30 too fine for me. There is some extra work in wiring but you can work so much faster that it pays big. If combs are not wired your skeert of em drapping out. I've bin thar and its past theory with Will, you bet. Get your combs drawn out during early blossom, any blossom before white clover if you can.—Will Ellis, St. Davids, Ont.

Fix them in the hives so that the bees can get at them. If no honey is coming in feed just enough and not too much. This a very nice point, and I have not yet reached it. Usually there are enough combs, supplemented with good foundation, about an apiary to supply it with needed starts and more two. Procure new combs of drone cells and save the fragments. The bee-keepers' gain is made up of many little items. If he is not "saving" he will be lost.—J. M. Shuck, Des Moines, Iowa.

Put the foundation sheets along the top of the frames and pour a little real hot wax in, the sheets fasten firmly. Put the frames with foundation on in the centre of a good strong colony and you shall have grand comb.—S. P. Hodgson, Hornung's Mills.

Wire the frames for foundation. Have had no experience of comb building.—D. P. Niven, Dromore, Ont.

No. 9. Do not clearly understand the first part of the question. If for bees to do the work, would say during the spring honey flows let the bees fasten and draw out combs say two at a time, they should be removed a day or two after putting in, or the queen will have taken possession of them.—Ed.

Queries for July Number.

No. 10. Wishing to use starters on wired frames, has any one had combs built all right over the wire? or know ff the bees will do it.

No. 11. Should bees be assessed as personal property.

No. 12. Bee-house for wintering is above ground, is quite dark and quiet, temperature maintained from 38 to 43, above the latter bees become noisy. Artificial heat used, by hot water pipes round wall of room, about a foot above ground. From 26 hives fully three pecks of dead bees were gathered this spring. What is the cause of the great mortality? All but one came out in good order with very little consumption of honey, (12 to 17 lbs.) the one that was dead consumed 24 and then starved. In house from 16th Nov. until 27th April.

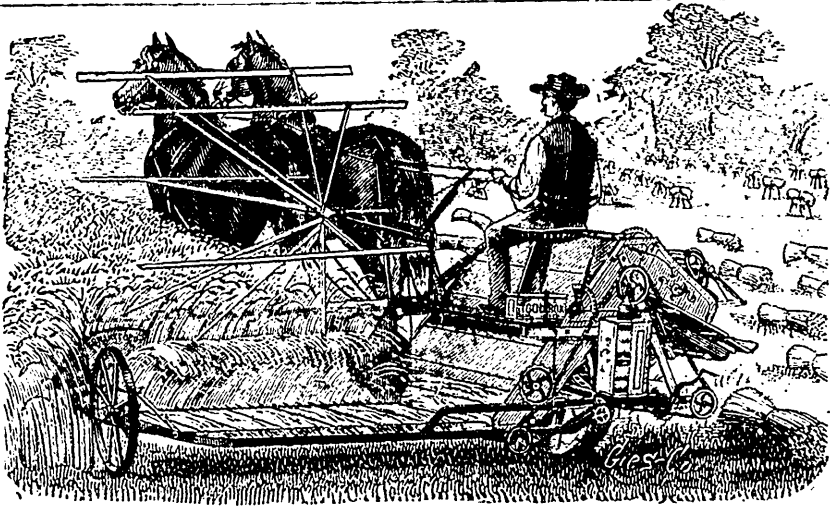
Honey Market, Toronto.

A few 1000 lb. lots last crops still offering at a shade easier prices, 8 to 8½ cents. Although stock held over is reported higher than last year, most producers more inclined to clear off to make room for anticipated good season. Demand but moderate.

JACOB SPENCE.

Honey Markets, Brantford.

Comb first class, none, superior 1 lb. sections 15 cts. Extracted is getting scarce. Small lots on the market however are selling at 12½ cts. per. lb., retail. The demand is fairly active. All honey in this vicinity will be sold before new honey will be on the market.



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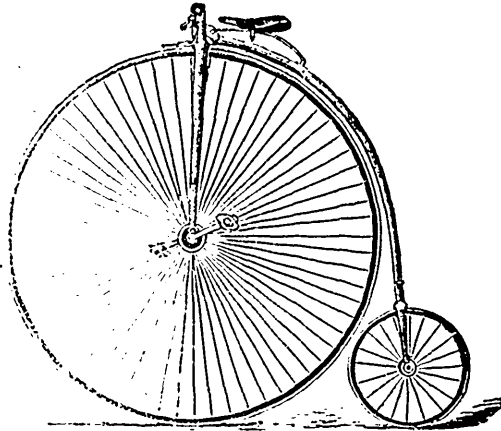
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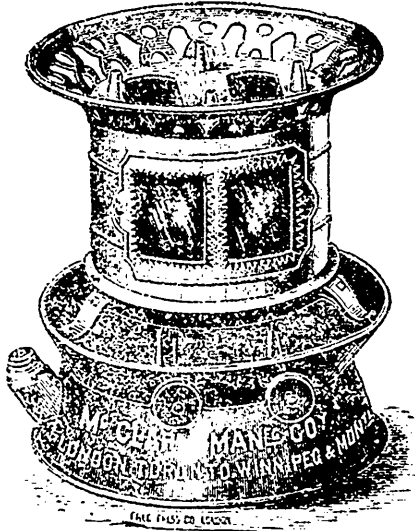
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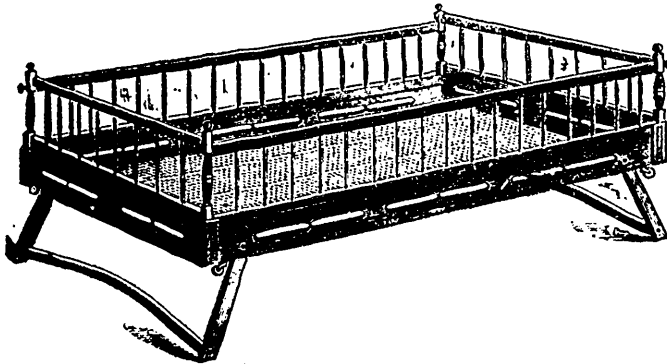
We desire to call the special attention of the Lady readers of the BEE-KEEPERS' JOURNAL to a few important particulars concerning the goods which we manufacture. As the natural guardians of the health and happiness of the family, you wish to use only the BEST.

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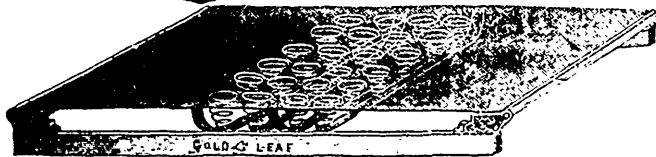


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BEE SWAX,

Delivered at Bright or the Home Apiary, counting foundation and wax at market prices.

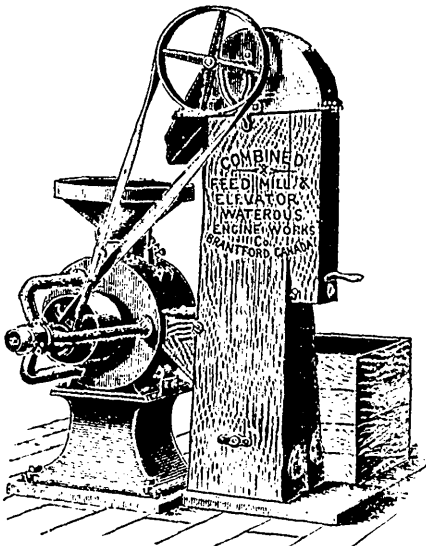
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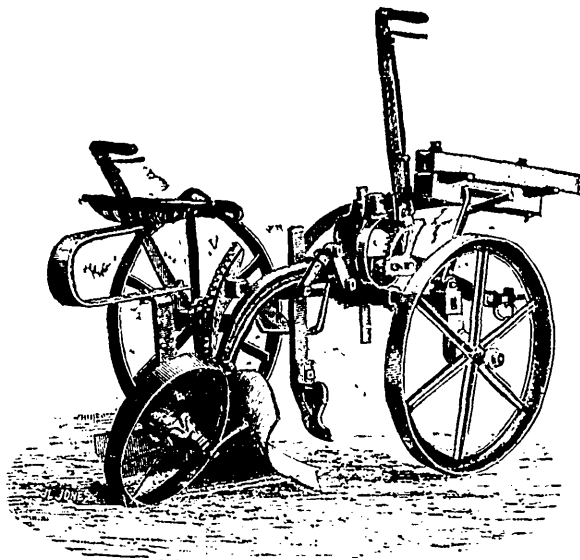
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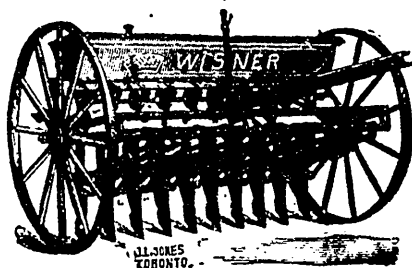
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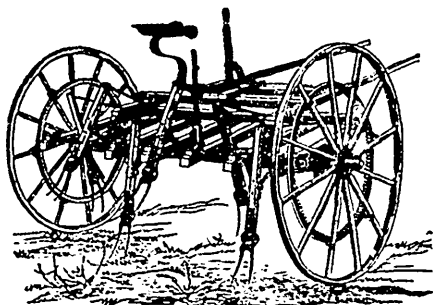
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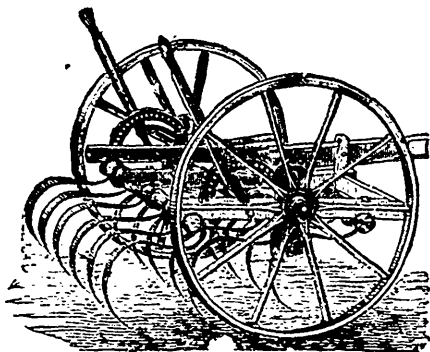
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