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CONTRACTED BROOD NESTS FOR COMB HONEY

By F. P. Adams.

It is a good many years now since Mr. W. Z. Hutchison of the "Bee-keepers' Review" gave such wide publicity to the method of contraction of brood chambers when hiving swarms for the production of comb honey. This system has been practised by bee-keepers, both great and small, all over the country, and has many warm advocates among comb honey producers. The writer has used it to good advantage in former years, and to a certain extent during the past season, but it must be confessed that one by one its main features have been abandoned, and a different system and different principle has been introduced into the yard at Bow Park.

The theory of the Hutchinson plan is that by hiving a swarm on the old stand, in a brood chamber filled with frames of starters, and after a few days contracting the frames down to, say, five, the honey will go rapidly into the supers above and the queen below will keep the brood combs filled with eggs about as fast as the bees can build the wax, thus insuring worker comb below and plenty of honey above. It is certainly a very attractive-looking method of getting over many of the difficulties with which the comb honey producer is beset, but the trouble with it is in practice that it adds new complications to an already complicated business, and for this very reason is apt to defeat the object for which it was devised.

There are some swarms that seem to take kindly to the contraction of their brood chamber, and with them the work goes merrily on in the supers, but with others (and these are usually our most profitable ones) such treatment seems to be just the reverse of what they require; instead of staying put in the little brood nest, they fool their time away in repeated attempts to change their quarters, and try the operator's strength and patience in an endeavor to get them back to work again.

It is in the big colonies that we must work for if we are to get the best results in the supers, and they require different handling from the small or medium-sized ones when they swarm out. With such, a small-sized brood nest is soon filled with eggs and honey, and before the season is over they have swarmed the second and sometimes the third time, thus frittering away their energy and the bee-keepers' profits, simply because he failed at the critical time to give them enough room for their labors.

Unless the frames in the brood chamber have been contracted down to a very limited number, there is sure to be too much drone comb built when starters are used in the frames, and

even with the contraction there will be more or less of it. For this reason it is advisable to use full sheets, and for large swarms eight frames of such are none too many to hive on when running for comb honey. If my colonies were weak and swarms small I would not hesitate to put two of them together in the new hive with eight frames of foundation, and from such a colony, with plenty of room for the queen, and no swarming out the second time, there will be a bigger profit than if each small swarm were hived separately in a contracted brood nest.

There is another objection to the contracted brood nest that becomes serious as the number of our colonies multiply, and that is the work of going through the recently-hived swarms for the purpose of taking out part of the frames and replacing them with dummies, and again after the honey flow taking out the dummies and putting back frames in their place. The work in a fair-sized yard is enormously increased if we must be constantly tinkering with the brood nest. In the spring, before the honey flow is on, it is profitable to go through the yard and make use of every little kink we know of in order to build up colonies to their maximum strength, but when the flow commences there is plenty of work with the swarms and supers to keep our time fully occupied..

In many localities the flow shuts off as soon as the clover and basswood is through blooming, and it is only in favorable years that the fall flow is sufficient to keep the bees from drawing on their stores for late brood-rearing. With such conditions, it is evident that winter stores must be secured from the white honey flow, and unless part of the yard has been put to filling frames to supply the rest in the fall, our only recourse is the sugar barrel. Under these conditions we might just as well have a few frames filled out in the brood chambers while the flow is on, so as to supply them from supers.

Big swarms mean fast work in the supers, and if we are unable to build up our colonies so that the hives are crowded with bees from top to bottom, then it is always possible to unite two weak colonies, so that their combined forces will hustle the honey into the supers much faster than they would have done had they been hived separately, and if our swarms are strong—very strong—it will be found that eight Langstroth frames filled from top to bottom with foundation are none too many in the hive body, and that a colony so fixed, and with a good queen, will go ahead with the work in the supers at a surprising rate, and, having plenty of room below, will go into winter quarters stronger in bees and require less feeding than one that has been contracted down.

It is claimed by the contracted brood chamber advocates that every pound of white honey should go into the super if possible, and that we should depend upon sugar syrup for winter stores, but I have found feeding this syrup very unsatisfactory, not because it does not make good winter food, but because of the tremendous labor involved in feeding, and because in a large yard it is next to impossible to tell when each colony has had enough. There is nothing better than full combs of honey for this purpose, and a generous supply of these given in the fall will have a big influence on next season's crop.

"Bow Park," Ont.

THE NUTRITION OF THE BEE.

(Address by T. Cherry, M.D., M.S., Director of Agriculture, Before the Victoria Apiarists' Association, Melbourne, Australia.)

In thinking over the question of the food supply and nutrition of insects from the point of view of the physiologist, it seems to me that some points were of sufficient importance to bring under your notice at your annual conference. While we are not yet sufficiently informed on all the points connected with the growth and life history of insects to enable us to make any statement of any value with regard to some of the details of the process, yet there are one or two broad facts which stand out so strongly that they must be kept in view by everyone who is aiming to make an economic success of his work with insects. While great differences are found to exist among different classes of insects, it appears to be the general rule that in those that exhibit the phenomena of complete metamorphosis there is special provision made during the early history of the individual for building up the active working tissues of the adult. In all animals the food which is consumed is devoted to two separate purposes—part of it goes to build up the active working tissues the other part is utilized by these working tissues in the course of their activity. Hence the distinction between the flesh-formers and the heat-producers. The former are the foods utilized to make good the wear and tear of the active living portions of the animal. The latter, although they may be incorporated with the living tissues for a longer or shorter period, seem on the whole, to bear the same relation to the living tissue as the fuel does to the steam engine. Flesh producers always contain appreciable quantities of proteid or other nitrogen-substance. The heat producers consist chiefly of carbon and are typically represented by sugar and fat. It is at some stage in the development of the bee from the egg to the imago (adult insect) that provision is made for the formation of the muscles and other active working parts. As the process of development is followed, it is found that this provision must be made either in the egg itself or during the life of the larvae. There is no great amount of proteid material provided by the food of the imago. This consists, as is well-known, almost entirely of sugar in one form or another; while, should the bees begin to eat pollen or other substance of a similar nature, they are liable to very quickly fall out of health. Experiments have shown that they are able to thrive and remain active in the adult stage on food consisting solely of pure sugar and water. On the other hand, the food of the larvae is composed largely of pollen, and pollen differs from honey chemically in containing a comparatively large amount of nitrogen in the form of proteid and other allied substances. When we consider that during their active adult life the muscles and other organs of the bee are kept extremely active and when we remember that during this period of activity no provision is made by means of the food for making good the wear and tear of these active tissues, we understand at once why it is that the life of the insect is so short. In all the higher animals provision is made in the food for the supply of material to renew the worn-out parts and special provision is seen in some of the organs of the body for the removal of this worn-out tissue. But with the bee the opposite is the case—no provision is made in the food for the repair of the active working parts—and it is doubtful if there is any provision amongst the organs of the body for the special removal of the waste pro-

ducts arising from their wear and tear. As we watch the development of the insect from the egg, we find that as soon as the grub is hatched food has to be supplied from outside. Previous to the period of hatching there was sufficient material stored away in the egg to supply the wants of the growing embryo, but as soon as the grub is hatched the whole of its energies seem to be devoted to consuming and storing away as much nutriment as possible. Although we are not yet acquainted with the full details of the series of changes which take place in the interior of the grub as it develops first to the chrysalis, and then to the perfect insect, it is quite certain that the food consumed by the grub forms the foundation upon which all the subsequent parts of the insect are built, whatever may be their chemical composition. In other words, it is the food supplied to the rapidly-growing larvae which determines the activity of the imago.

A glance at some of the facts in the economy of insects as a class will show the importance of this generalization. Many habits and peculiarities which otherwise seem very strange, are thus easily explained. If we remember that the struggle for existence in the case of the grub is almost identical with a struggle for nitrogen, we obtain the key to many curious habits. It is well-known that proteid material is relatively scarce in ordinary plants, but what they do contain is, to a large extent, accumulated in or about the seed. The pod-bearing plants, such as peas, beans and clovers, obtain an unusually high percentage of proteid through the medium of the little bacterial masses growing on their roots. It is the function of the plant to build up proteid material from simple chemical substances. Animals are unable to manufacture proteid at first hand, and must obtain their supply directly or indirectly from the plant. Hence the growing portions of the plant, its seed and the various parts of the animal represent proteid in a purer and more concentrated form. Animals which are solely vegetable feeders will therefore have to consume and digest a much larger proportion of food in order to obtain a given amount of protein than is the case with the flesh eaters. The distinction holds good with regard to the larvae of all insects. Caterpillars and other forms which live entirely upon vegetable material, are noted for their voracious appetite, and the great quantity of food they consume in proportion to their weight. Even in the case of those insects in which the larvae and the perfect insect use the same kind of food, the appetite of the latter is small compared with what it was when in the larval stage, but in many cases besides the bee, we find that the larvae lives on totally different food from which it uses when it assumes the imago form. I presume that it is the richness of the tissues of the apple close to the seed which induces the grub of the codlin moth to bore towards the centre of the fruit. Many flies lay their eggs in putrifying animal matter, where their larvae are well provided with nitrogenous material, while their food in the imago form consists almost entirely of sugar. In the case of parasitic insects, such as ichneumon flies, which lay their eggs in the body cavity of caterpillars, the reason seems to be not so much a question of protective influence as that of a more liberal supply of nitrogenous food. The caterpillar has the trouble of collecting proteid material from the plant, while the parasitic larvae simply consumes the tissues of its host and in this way obtains its nitrogenous food with a minimum of trouble. Even while the parasites confine their atten

tion chiefly to the "fat body" of the caterpillar, they are obtaining proteid from its juices without injuring the vital parts of their host. What little we know concerning the economy of another great class of social insects, namely, termites, or white ants, all tends to impress upon us the importance of protein from the insects' point of view. The food of these animals consists in the first place of the wood and other material through which they are boring. Such crude material contains a very small percentage of protein. The food which one of these insects obtains from the secretions and exertions of the other members of the community all tends to furnish protein in a more concentrated form. But the termites go further than this. By the simple process of eating every particle of the dead members of the community, they keep the aggregate amount of protein available from the one to the other with scarcely any diminution or loss whatever. Other insects supply food to the larvae by storing up half dead caterpillars or spiders in the cells, or choose the muscular tissues of beetles for the same purpose. In each case the explanation is the struggle for nitrogen.

Apply these illustrations to the case of the bee. The question at once arises—"Can these insects always obtain sufficient protein to properly nourish the young?' In other words,, If the disappearing disease and other forms of sickness to which the bee is liable, are to be largely attributed to feeble constitution, is this enfeeblement due to the fact that the larvae did not obtain the proper quality of food? We must draw a sharp distinction between the proper quantity and the proper quality. The former may be all that is desired, while the latter is altogether wrong. Considering the fact that nitrogen is always scarce in vegetable products and that nitrogen is all important for the proper development of the working tissues of the bee, it is practically certain that if there be anything wrong in the quality of the food it must be on account of a deficiency in nitrogen. The frailty of the constitution of the bee would thus be directly attributable to the supply of proper food; and that this factor is of the utmost importance with regard to the economy of insects is highly probable. Most naturalists hold that the sex of some insects depends upon the quality and quantity of the food supplied them immediately after hatching, and if this assumption is well founded we are certainly justified in assuming that the vigor of the adult worker will, to a large extent, depend upon the quality of the food supplied, while its tissues are being built up in the larval form. Even if it be proved that the internal organs of the larvae subsequently disappear, before those of the imago are formed our assumption still holds good, for, during the chrysalis stage no further food is taken and the organs of the new animal are developed from the remains of the old one. A proper supply of protein in the food is therefore essential to the proper development of the working bee.—Journal, Dept. of Agriculture.

KEEP YOUR TEMPER.

Be good-tempered. It pays in every way; it pays if you are an employer; it pays if you are an empoyee; it is profitable in ever walk of life. And this is taking the most selfish view. You owe it to others to be good-tempered; you owe it to your own manhood, to your own self-respect. In making others comfortable, you are making things agreeable for yourself; you are gaining and keeping goodwill, which may be of value and help to you hereafter; you are accumulating a capital of popularity and good report which may be used to advantage perhaps at a critical time. Good temper is a great factor in success.—Business.

HOW I SELL MY EXTRACTED HONEY

(By A. C. Allen, Portage, Wis.)

This is my seventeenth year with the bees and I have always sold my honey direct to the consumer.

Will say right here that I do not practice the method that many bee-keepers do that I know of, i.e., retail at wholesale prices. That very thing has discouraged many a promising young bee-keeper, who, if he could have seen employment in the business the whole year, would have stuck to it; but as it was operated in his locality caused him to give it up.

If he has not already done so, every honey producer should establish and maintain both a wholesale and retail price; or if he intends to retail all his honey he should not recognize among his customers that there is such a thing as a wholesale price. Never mention such a thing to them, and they will not know there is any price other than you ask.

We cannot get too much for our honey. We have borne the stings and studied and studied, and most of us have before attaining success sustained many losses, and we are more liable to heavy losses than those of almost any other occupation; therefore we should be as well paid for our labor as anyone.

In some places where there are several apiarists there is a little strife between them over customers. All want to sell their product, so in order to get ahead of his fellows one offers honey a cent less per pound than his neighbors do. No. 2 hears of this and gets scared for fear he will have his crop left on his hands and offers his for a cent less than No. 1 did. Now this is not necessary. When there are several dairymen supplying milk to a city, where would they be if they worked that way? Should we not adopt as businesslike methods as they do, and stick to them?

Where several bee-keepers live near each other, let them call a meeting and agree to all sell at one living price, district the territory, grade the honey all the same, and, with brotherly feelings toward each other, go to work. Call meetings from time to time and discuss your experiences and best methods of approaching customers, overcome obstacles, making sales, etc. If you have more honey than you have time to retail or your territory can use, don't foolishly say to yourself, "Well, I have so much I might just as well let it go cheap right at home as to ship it away and get no more for it." Don't you see that when you do that you do a great wrong to your brother apiarist who wants and needs both the employment and money that a retail price brings.

We work with our bees all summer and the amount of honey we have received during the season, figuring at wholesale price, represents the amount of money we have made up to the close of the honey flow, less the expenses. Then if we sell the crop around home or retail it anywhere, there should be a large enough margin between the wholesale value of it and the price for which we deliver it out in small quantities to consumers to give us good wages for the time spent. You can easly sell from 50 to 200 lbs. per day at from 3 to 5 cents a pound above the wholesale price quoted in the papers, and this is none to much profit; for you have had to melt and can or bottle and label, canvass for and deliver it, and sometimes—yes, collect.

But to return to my subject. My honey remains in the hives until it is ripe and has a flavor that my customers wish to taste the second time—yes, I am still selling to the same people that I sold to sixteen years ago. When I extract, the honey is run into barrels and large cans, and about September 1st I commence canvassing my territory. I early learned that the way to the pocketbook is through the mouth, so I devised a little wire basket with a convenient handle, which holds two pint Mason fruit jars. I use those made of white, clear glass. In one I put white honey and in the other dark. This sample case held up before a customer presents a very novel and attractive appearance which with a pleasant "Good morning" and a smile always gets the door open. That much accomplished I tell the lady of the house that if she will please get me two sauce plates and spoons I will give them some free samples of honey. This gets all to tasting, which delights the children, who call me the "honey man," and it dont take long to get the order.

On pleasant days I often take my horse and buggy with a load of honey, which I keep standing conveniently near while I canvass and deliver at same time, though I can do more business by taking orders for several days and then deliver. My delivery days are usually set for the first of the three following months and at pay day with factory and railroad people. Until last year I have always used the Mason fruit jar and had my customers educated to have an empty jar ready to exchange with me, same as they do with their milk bottles. Last year I used the 3, 5 and 10-lb friction top cans and pails and charge the people for them. This saves me time, and shall use them again this season.

I seldom canvas afternoons. People are either away from home or not in the best of mood to buy. So I spend the time melting, canning, labeling and doing other necessary work. I talk of the healthfulness of honey as compared to other sweets; it is natural to the system, being the same as is found in fruits, and is therefore readily assimilated, needing no digestion, while cane sugar has to be digested and changed to honey before the system can use it, thus placing upon it an unnecessary tax. I have known store syrup to eat the cork out of the jug, and it certainly would eat the stomach out. The popular notion that honey is a good cough cure sells many a jar, if you are wise.

Talk of its cheapness compared with butter, as it is claimed that it is equal to butter in food value, but costs only half as much. Butter will get stale, while honey improve with age; in fact, there is no end of things to say. But the wise salesman will not tire himself, saying only such things as are necessary to each particular customer or prospective buyer.

If we act as though our industry is second to none, and our product worth something, attend promptly to sales, deliveries and collections, and search out unoccupied territory in which to sell, the price of honey will go up to where it should be and stay there. And to those who do not wish to work as I do, there are many young men who would be glad to take your crop and go to some city or drive through the country and sell it for you on commission. I have sold many tons in this way, having never yet produced enough for my trade.—Rural Bee-keeper.

Condemning the other fellow advertises his business and does not benefit your own.—Montreal Star.

Hints for Beginners

R. F. HOLTERMANN

What careful study a beekeeper and agriculturist should give to the weather. Time and again to have some idea as to the probable future weather conditions and to be able to tell with some degree of certainty changes in the weather is of value. There is no calling which gives the ample scope for reward for the proper use of body and mind which agriculture does. Many may not see this, but it nevertheless exists. In weather forecasts I do not now speak of groundless conclusions, of things which are supposed to indicate what they do not, but I speak of the tenor of seasons, the result of winds from certain directions, the deductions we may draw from certain clouds at certain times of the day, and the suggestions we get from certain sunsets and sunrises. Even our Lord, who never made a mistake, who never spoke lightly, but always weighed every word, endorses that this can be done by saying "Ye can discern the face of the sky and of the earth." Now let the beekeeper get a good look upon the subject and study it during the coming winter and thus be better prepared to make a success of bee-keeping.

To-day, November 28th, I am congratulating myself that all my bees are in the cellar. They, with the exception of four colonies out of 336, are strong in bees and they have an abundance of stores, the twelve-frame single wall hives without covers averaging over 85 pounds each. The bees were put in last week, with our own and those of another (we helped one another) 600 colonies were put in. I could pile these five high in the cellar and probably with as little grumbling as the small idea hive man would pile up his eight-frame hives. After coming home from this operation I had a man call on me to consult as to the best way of feeding his bees whether the bees would take down the feed in the cellar, or if they could be got to take it down now. The next day I met another man who consulted about the same thing and borrowed a few feeders. What a time to look after such things, and yet I am sadly afraid these cases are by no means isolated. Such work is almost on a par with reaping a field long after the grain is ripe and the weather and chicks, turkeys and other birds have threshed most of the grain I have no desire that there should be less beekeepers, but I would like to see the day when the bees are kept more intelligently or the owners go out of the business. If anyone has bees with insufficient stores for winter under proper conditions I feel sure bees can be fed during the winter and yet wintered with success. Now, remember, I do not advocate this. I am sure it would be very undesirable to practice such beekeeping, yet it can be done. Bees, however, as far as I know, cannot be induced to take feed **down,** such feed must be put **under** the cluster, not **over** it. The hive can be raised from the bottom-board sufficiently to shove under the cluster some feeder open at the top, yet in which the bees will not perish. The feed can be given as occasion requires. As such a feeder must of necessity have a limited capacity I would put in feed two parts, by measure, sugar and a little less than one part water.

It appears to me we put our bees in the cellar just about the right time, and yet if a warm day should come soon one in which the bees could have a thorough fly they would be better out. On the other hand should such a da

not come, it would be a distinct loss. Many bees are th's winter going into winter quarters having already had four to five weeks of confinement, the bees are spotting a little. This does not say they will not wi..er well, but the bees are handicapped. All that can be done is to give them every care and the best conditions for successful wintering.

Outside bees should be well packed, quilts not sealed, thus allowing the moisture to escape through the packing above without freezing, plenty of stores of ready access to the bees and sheltered from strong winds. In cellar wintering less stores are required, as the bees can move about more readily and consume less. The hive must be ventilated and the cellar dark, an even temperature, running from 42 to 45 degrees. I believe the safe way is to remove wooden covers from the hive, put a warm cushion on the quilt or warm carpet, and then raise the brood chamber three-eighths of an inch or more from the bottom board at the back.

Brantford, Ont.

THE ALEXANDER METHOD OF INCREASE.

Why F. L. Day Failed.

Mr. E. W. Alexander writes the following in "Gleanings on Bee Culture," in reply to Mr. F. L. Day, whose report on the Alexander method of increase we copied in the "Journal" for October:

"In justice to myself and the method of making increase that I recommended in the April 15th issue of 'Gleanings,' I wish to say a few words to friend F. L. Day, as he, in the October 1st issue, condemns what is now called the Alexander method of increase. In that article of April 15th I said, 'Now leave them about 10 or 11 days in this shape, during which time the queen will get a fine lot of brood started in the lower hive, and every egg and particle of larvae that was in the old hive on top will have matured so it will be capped over and saved; then separate them, putting the old hive on a new stand.'

"Now, instead of leaving them only 10 or 11 days, as I advised, friend Day leaves them from the 22nd of April until June 1st, some 39 days, which changes the nature of the whole operation, and shows very decidedly that the excluders he uses are worthless as queen-excluders, for we all know that the queens he speaks of as being about ready to hatch in the upper hive on the day he separated them must have been newly laid eggs only 15¼ days before, which also shows that the queens he thought were shut below in the under hive were having full swing in each; therefore, the only change the four colonies had by his manipulation was to give them an additional set of combs, whereby, in the course of a month, they had a large amount of maturing brood, which was the cause of their swarming. I can hardly see how he could have fixed them in any better way to swarm naturally and continually than he did.

"Now a few words to all who try new methods which the writers for our bee journals recommend. Either carry out those methods to the letter or let them alone; don't mix up a lot of your own ideas with those of others, and then condemn the writer for not giving a practicable method, as friend Day has just done in this case. I find this is the worst feature connected with writing for our bee journals—so many bee-keepers with limited experience will undertake to put in practice some new method, and frequently omit some of the most essential parts, thereby making a perfect failure of what otherwise would have been a perfect success.

"In conclusion I will say that, during the last three months, I have received dozens of very complimentary letters from parties who have adopted this method of making their increase, at the same time securing a large amount of surplus honey.

Delanson, N.Y.

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EDITORIAL NOTES.

The freight rate committee appointed by the O.C.B.K.A.—Messrs. Holtermann, Evans and Couse—will meet with the Railway Commissioners at Toronto on Monday, December 11th.

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The annual convention of Brant and adjoining Counties Bee-keepers' Societies will be held in Brantford January 24th, 2 p.m., to 26th, noon. A full session will be given to the discussion of the improvement of the quality of honey and the development of the home and foreign market for the sale of honey.

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Prof. Shutt, of the Central Experimental Farm, Ottawa, gave a very interesting talk to the convention on experiments conducted in the Experimental Farm laboratories, bleaching beeswax; influences in the hastening and prevention of granulation of honey, the origin and composition of honey dew, etc. Prof. Harrison of the O. A. C., Guelph, instead of his usual scientific subject, gave a very practical address on diffusing apicultural knowledge. These gentlemen have rendered faithful and valuable services to the Ontario Bee-keepers' Association, which we should appreciate exceedingly. Prof. Harrison, we understand, has now severed his connection with the O. A. C. to become one of the staff under Prof. Robertson in the new MacDonald College at St. Anne de Bellevue, Quebec, endowed by Sir William MacDonald. Guelph College has lost a good man in Prof. Harrison, and will be very fortunate indeed if his successor proves his equal. It is to be hoped that in his new sphere Prof. Harrison will still be interested in bee culture, and be able to carry on further his investigations with foul brood. The MacDonald Agricultural College and experimental station has accommodation for 600 students, and will cost several million dollars. We understand that in connection therewith a new system of experiments in farming will be conducted to demonstrate what can be done by following certain methods of culture, and the results are to be gauged by the financial results.

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Perhaps the most important business transacted by the O. B. K. A. at its late annual meeting was the amendments to the Ontario Foul Brood Act. This, in the mind of some of us for some time, was a very necessary undertaking. The Act as amended will, when it passes the Legislature, provide for three inspectors of apiaries, instead of an inspector and sub-inspector, and that "the Province of Ontario shall be divided into three districts for the purposes of this Act, and one inspector shall be appointed from each district." These inspectors are to be appointed with full power of the present inspector of apiaries to deal with foul brood in their respective districts, the present act to be altered by changing the words "inspector and sub-inspector" to "inspectors." The clause in section 3, relating to the disinfecting of clothing, etc., of the inspector and his assistant, was deemed unnecessary, and was omitted. Clause 12, referring to the annual report of the Association

to the Minister of Agriculture, was amended by striking out the words "which statement shall include the number of colonies destroyed, etc," and inserting "which statement shall include the weekly reports sent by the inspectors to the President of the Association, containing the following information: Date of visit, owner's name and address, number of colonies in apiary, number of colonies diseased, number of colonies burnt, number of colonies recommended for treatment; also a statement of the amount paid to the inspectors for their services and expenses for the preceding year." A considerable number would have gone further with these alterations, suggesting smaller districts and more inspectors, but the directorate very wisely recommended a medium course, which was unanimously agreed upon by the Association, and which, we are sure, will meet the approval of bee-keepers generally. No matter how desirable local inspectors may be, the Government grant at present would be altogether too inadequate. It is not sufficient for the proper carrying out of the present Act. The amended Act will come in force after next annual meeting.

Emma M. Wilson, who so ably and interestingly conducts "Our Bee-keeping Sisters" department in the "American Bee Journal," quotes our report of the honey crop and successful bee-keeping of Miss Trevorrow of Meadowvale, and says in comment:

"That is decidedly interesting, but it is just a bit exasperating that Editor Craig leaves us in the dark on two very important points. Please, Mr. Craig, won't you kindly tell us how many colonies there were in the apiary that averaged 130 pounds, and also whether the honey was comb or extracted? You see, it makes a big difference whether there were 5 or 50 colonies. In a good location, with no other bees near, the average from five colonies might be very much more than from 50, and 130 pounds of comb honey would be as good as about 195 of extracted. In any case, Miss Trevorrow did well, but just how well can be better understood if we can have the desired light on these two points."

Owing to our visit to Meadowvale being somewhat hurried, we missed much information that we would have liked to have had regarding Miss Trevorrow's management of her bees, but which we hope she will favor the "Journal" with in the near future. We regret to learn that just at present it is necessary for her to undergo a course of treatment for rheumatism at the Dr. Walters' Sanitorium, from where she kindy sends us the following in reply to Miss Wilson's enquiry:

"Mr. Editor: When I read the comment, in the "American Bee Journal's" latest issue, upon the reference you had made to my bee-keeping in the "Canadian Bee Journal," it struck me as possible that you might not be possessed of the neded information to reply satisfactorily to the interested enquiries of our American sister. I therefore submit the following data, trusting that it may be of use to you in granting her reasonable request:

"I had 33 colonies of bees last spring, all in good condition. From these I extracted 4,400 pounds of white honey, and about 300 pounds of dark honey (we have no very dark honey in this vicinity). I had 90 sections of No. 1 comb honey and about the same number partly filled. Have not made a success of comb honey-making yet.

"I might state here, in anticipation of a very pertinent question in regard to fall feeding, that I fed 817 pounds of sugar this fall, the number of colonies having increased to 49, and also state in regard to locality that when this yard consisted of five first-class colonies they yielded 928 pounds of extracted honey and increased the number of colonies to 15. Other apiaries from three to five miles distant.

"Apropos of the "humorous remark" (which, by the way, was as humorously misquoted in the American Bee Journal'), is it because 'Novice' has received so much information from the 'big-hive' fellows or from other sources, that we no longer see the name in the 'Canadian Bee Journal'?

"M. B. TREVORROW."

NOTES AND COMMENTS

By a York County Bee-Keeper

Packed Hives vs. Single-walled Hives Wrapped With Tarred Paper, For Out-of-door Wintering.

The leading article for the November "Review" is contributed by Mr. A. C. Miller, who writes, to quote the heading of the article, on "The Philosophy of Protecting Bees With Tarred Paper." While space will not permit for the quoting of the different arguments advanced, suffice it to say that, as is always the case with Mr. Miller's writings, they are very convincing from a theoretical standpoint. Mr. Miller regards a packed hive as "virtually an ice-house to the bees. They cannot warm it, nor can the sun help them in the few hours it is up in the winter." Relative to the paper-wrapped, single-walled hive, he says: "In a single-walled hive wrapped in material which is wind and waterproof, black in color, and a poor conductor of heat, we have a domicile for the bees which will absorb heat in goodly volume, with considerable rapidity, and give it up slowly. It embodies the good points of both the single-walled and the chaff hive, and avoids their bad ones." He recommends a hive made in New York State, called the air-spaced hive. It has two half-inch walls, separated by an inch space, and the space face of each wall is covered with a sheet of heavy building paper. Mr. Miller lays special emphasis on the necessity of leaving entrances wide open, 14 inches wide by half-inch deep, on the single-walled hives wrapped with tarred paper, "then, when bees are roused by the wormth, they are less likely to leave the hive when the outer air is dangerously cold. They come down close to the entrance and stop." I might say that, two years ago, partly by some experimenting during the two previous **mild** winters, but more particularly through reading Mr. Miller's articles on wintering, the writer became quite enthusiastic over the tarred paper idea. However, I will just say that experiments conducted the past two **severe** winters have quite effectually cooled off all the enthusiasm along that line. No, siree, as before stated, Mr. Miler's arguments apepar quite plausible in print, and likely are practical as well in Rhode Island and similar climates, but in Ontario feel safe in saying that the papered hives are "not in it" when placed beside a well-packed hive. I feel sure that all who take the trouble to test the matter will quite agree with me. Regarding the air-spaced hive referred to, Mr. D. W. Heise for a number of years wintered quite successfully with a hive similar in construction, but in the past two **severe** winters referred to the bees in these hives nearly all perished, while a yard of mine only a few miles distant from them—all packed hives—came through in splendid condition. All who are acquainted with Mr. Heise will know that the bees would be put into winter quarters in first-class condition; in fact, I have no hesitation in saying they were in much better condition than those in my yard referred to. Yet two years hand-running results were as I have stated. If the packed hives had nothing to do with the matter, what was the prevailing factor that caused the difference?

Defects in Methods of Wax-rendering

After having our appetites whetted on this subject by the hints thrown out by Mr. Hershiser of Buffalo at our convention, our interest was still further stirred up in reading the concludi

paragraph of Mr. Miller's article, upon which we have just been commenting. He says: "With wax presses, which, so far, have yielded the largest amount of wax from the material treated of any process, we have a slow, a hot, a laborious and a sloppy system; in other words, an expensive method. Beides this, a press will not yield **all** of the wax. It is impossible; the principle is wrong. All the wax can be secured, and that with little labor or time." In a foot-note Editor Hutchinson simply says, "Tell us how." We certainly shall be on the qui vive for revelations on wax rendering. After. After listening to what Mr. Hershiser stated publicly, as well as what he told me in private conversation, regarding the amount of wax he had secured from apparently hopless material, I am convinced that the most of us (if not all) are still wasting a lot of good wax.

Caucasian Bees.

While these bees are being boomed considerable at the present time, the principal redeeming quality, according to their admirers seems to be their "gentleness." Hives can be banged around, frames ripped out, in fact, any kind of rough usage given without the use of smoke. We even surmise that one can "'pinch the critters' tails" without them resenting the indignity by stinging. Pshaw! What's the use of having bees that will submit to such a useless show of rough usage. If gentleness is their only good feature, better leave them in the mountains of the Caucasus; we certainly have no need for any gentler bees than we now possess. Regarding the matter of stingless bees, I have often said that if they became a commercial possibility we would all be put out of business, as bees without stings would be the most abused creatures on the face of the earth, yet enough of them would be kept by the rank and file to put specialization in the business out of the question.

Alexander's Cure for Black Brood.

A recent issue of "Gleanings" contains an article from the pen of Mr. Alexander, in which he gives what he claims to be an infallible remedy for black brood, the great scourge of bees, particularly in New York state. The treatment is so simple that it seems almost incredible, yet, coming from so able an apiarist as Mr. Alexander, it certainly is worthy of consideration. In a nutshell the treatment is as follows: Remove the queen, then in nine days destroy all cells started and virgin queens, if any should be hatched. On the twentieth day after removal of old queen introduce a virgin **Italian** queen, or queen-cell ready to hatch, and the job is done. The theory is, that during the twenty days of queenlessness the bees will thoroughly polish the cells, removing all the dead, dried-up matter, in anticipation of having a laying queen to occupy the cells with eggs. In our locality I would expect the bees to plug most of these cells with honey and **pollen** while they were queenless so long. However, the treatment is very simple and within the reach of all, and if it should prove efficacious in the hands of others, as it has with Mr. Alexander, the bee-keeping fraternity certainly will owe him a debt of gratitude. Mr. Root wonders if the same treatment would cure foul brood. I would be very, very doubtful; in fact, believe, and will go so far as to say, that, in my humble opinion, it will not cure it. But, as in the case of black brood, any one can try, as the treatment will certainly do no harm.

Jamaica Honey Again.

Right glad, Mr. Editor, that I took the trouble to scribble that note re confederation of Jamaica with Canada, which appeared in the September

"Canadian Bee Journal." Mr. Taylor will, no doubt, be surprised when I say that I agree most emphatically with **nearly** all he has to say in his excellent article, even as to the matter of "dog-in-the-manger protection." Let me tell you in confidence that I used to have considerable reputation as a crank who believed in universal free trade. I am sorry to say, though, that after hustling for the necessary things of life on my own account, I have been forced to admit that the times are not yet ready for a propaganda of that nature. In this material age the "Golden Rule" has largely been lost sight of, and I fear often supplemented by the rule, "Do the other fellow as he would do you." But I have almost forgotten to tell why I was glad that note was written. Simply for the fact that it was the means of stirring up the latent talent which we find appearing in Mr. Taylor's article. I shall take the hint, and hereafter, if it should be my lot to scribble for the columns of the "Canadian Bee Journal" I warn you, Mr. Editor, to look out for "Notes" unorthodox and cantankerous in the extreme, in the hopes that some others may get awakened, even if the vials of wrath should be poured out on your humble servant.

Granulation of Honey.

Prof. Shutt's addresses are always interesting. This year's talk was no exception. It is rather surprising that different results were not obtained from his experiments re granulation of honey. While the Professor seems assured that a moderate agitation of honey does not hasten granulation, I feel quite positive that if he tries **stirring** the honey that granulation will take place much more rapidly than in the case of honey left alone. No doubt there is much room for research yet, from a chemical standpoint, relative to the granulation of honey. Three or four years ago friend Heise had a 600-pound tank of honey, in which the bottom half granulated solid, the upper half remaining liquid, samples of which are still on hand and have not yet granulated. No, the liquid honey was not thin stuff—Mr. Heise didn't produce that kind of an article; it was thick and clear and of a very mild flavor, noticeably more so than the granulated portion. This and like instances give ample scope for the chemist to experiment with. It is quite a conundrum as to whether to keep honey in the light or dark. In one case you gain in color but lose in quality, and vice versa. "You pays your money and takes your choice." Personally, I would be inclined to sacrifice a little in color and hold the flavor. But, as with the case of the "old lady and the cow," you know, "tastes differ," so I expect the difference is so little that to all practical purposes light or darkness cut but a small figure in the keeping of honey.

York County, Ont.

Did ever on painter's canvas live
The power of his fancy's dream?
Did ever poet's pen achieve
Fruition of his theme?
Did marble ever take the life
That the sculptor's soul conceived?
Or ambition win in passion's strife
What its glowing hopes believed?
Did ever racer's eager feet
Rest as he reached the goal,
Finding the prize achieved was meek
To satisfy his soul?

—Selected.

BRANT AND ADJOINING COUNTIES BEE-KEEPERS' ASSOCIATION

The annual union meeting of the local bee-keepers' associations of Brant and adjoining counties will be held in the Court House, Brantford, commencing 1.30 p.m., January 24th, and closing at noon January 26th. All bee-keepers will be cordially welcomed.

W. J. CRAIG, Secretary.

MIDDLESEX COUNTY ASSOCIATION.

The annual meeting of the Middlesex Bee-keepers' Association was held in London on November 4th. Those present reported a very good season, an average of about 75 pounds per colony spring count, mostly extracted honey. One member reported 228 pounds of extracted from one colony, and 196 sections filled by a single colony. Neither colony offered to swarm.

Mr. R. H. Smith of St. Thomas read an instructive paper on "Shall We Keep More Bees or Manage Those We Have to Better Advantage?" He advocated the latter plan of caring for those we have, rather than increasing the number of colonies and decreasing the amount of surplus per colony.

Mr. F. J. Miller read an interesting paper on "Managing Out-apiaries Without Help." By the use of hives and implements adapted to his system of management he is able to visit each yard every four days. The honey can be extracted at each yard, or taken home to be extracted. He uses the Heddon hive. The colony is examined for queen-cells between the two sections of the hive, the top portion being raised or tipped back by an implement of his own design. If there are signs of swarming the colony is divided.

The subject of raising comb or extracted honey was taken by Mr. D. Anguish of Scottsville. What he thought to be of more importance was to have strong colonies, then you can produce either; but he did not like to put sections on towards the close of the honey flow. He would put on an extracting super. Another important point brought out was that strong colonies will ripen honey better than the weak.

An address on "Foul Brood" was given by Mr. F. A. Gemmell, assistant Foul Brood Inspector for Ontario. He considered our foul brood laws very good, as some of the States had copied from it. The disease was on the decrease. He considered it more dangerous with young bee-keepers, who were more apt to have robbing and spread the disease. A suspected case should be destroyed or treated in a careful manner by shaking them on comb foundation starters. In three or four days shake again on full sheets of foundation. Caging the queen will prevent them swarming out.

Re-forestry was discussed, led by Mr. Robb of St. Thomas. He thought bee-keepers should plant basswood and honey locusts. The sowing of buckwheat for honey alone was not advisable, as it requires a light, warm soil and a moist atmosphere to secrete nectar.

The following officers were appointed for the ensuing year:

President—Morley Pettit, Villa Nova, Ont.

Vice-President—F. J. Miller, London.

Secretary—E. T. Bainard, Lambeth.

BEE-KEEPING IN RUSSIA.

Editor Canadian Bee Journal:

Dear Sir,—Your request for a few notes on bee-keeping in this country to hand a few weeks ago.

We generally take our bees out of the cellar about the middle of April and put them in about the middle of October, practically they are outside six months and inside six months.

About 90 per cent. of the bees around here are in log hives, and the more swarms a Russian peasant gets the better he thinks he is succeeding. The largest log hive I have seen will only hold about seven Dadant frames, so you see there is not much room for surplus. The Dadant hive seems to be the principle moveable frame hive in this country, although there are a great many kinds of hives advertised.

We sell the honey from 10 to 13 cents per 14½ oz, and the supply is gener-

ally short of the demand, especially on the 19th of August, when everybody buys a few pounds, in fact before that date there is very little sold. There is a demand for honey for funerals and people buy it and keep it specially for that purpose. I am sorry to say that there is plenty of adulteration with treacle, etc., and the worst of it is, there is no inspector to enquire into it.

A short time ago I heard that the government had decided to sell sugar without duty to bee-keepers. The ordinary price of soft sugar is 7 cents per 14½ oz.

As to bee pasturage, we have in this district a few golden willows, basswood, heaths, a little clover, cucumber that are grown in the gardens belonging to the work people, and wild flowers. During the four years I have kept bees here I have only seen a few bees on the basswood and last year there were no flowers on it at all. When the willows are in bloom the weather is generally too cold and wet for the bees to do anything. Our principal harvest of honey comes from the buckwheat, when we take them out on carts to the village on July 14, and have them there about a month.

I have averaged about 30 lbs. this year, no surplus last year, and about 40 lbs. three seasons ago, all from buckwheat. I would have got more surplus than I did this year if I had the time to attend to them. I am only at liberty on Sundays, and these were mostly wet when the bees were at the village.

The principal foods of the Russian peasants are salted cucumber, rye bread, sour cabbage and buckwheat porridge. So you see there is more or less buckwheat sown in every village.

If there is anything else you would wish to knów further regarding bee-keeping and I can furnish you with particulars, I shall do so with the greatest of pleasure.

HERBERT KIRKHAM,
Vladimir, Russia.

QUERIES and ANSWERS

Department conducted by Mr. R. H. Smith St. Thomas, Ontario. Queries may be sent direct to Mr. R. H Smith or to the office of the Canadian Bee Journal.]

I. Question: What is the best material to use for packing in outdoor wintering and to what depth should it be used ?

Answer—After trying chaff and cut straw, we are now using dry forest leaves, and find they are less liable to mould or harbor mice. In this locality (when more than one hive is packed in a case) about one inch of leaves in the bottom, three inches at the sides, and about six inches on top of the hives, with slats or the hive covers laid on the leaves to hold them down snug.

II. There has been considerable talk about the proper-sized entrance for hives wintered outside. What has been your experience ?

Answer: When the hives are packed in wintering cases, we find an entrance about four inches wide and three-eighths of an inch deep, sufficient. If exposed to the prevailing winds I would lean a board over the entrance. At one time we used a much narrower entrance but found they became clogged with dead bees.

III. Do you leave the covers on the hives and pack over them, or do you remove them? W.T.K.

Answer: We remove the covers and place the leaves directly on the quilt covering the frames; if this covering is much propolized we loosen the rear part and leave a slight opening to allow moisture to escape; we then lay the covers on top of the packing, as explained in answer to question No. 1.

IV. I have a number of colonies that have refused to take syrup, although they are light of stores, not having full combs to make up the deficiency. What is best to be done with such; would it be wise or otherwise to leave feeders on all winter ?

C. H., Aurora.

Answer: Reasons why they would not take the syrup; it may be that the colonies are queenless, too weak in bees or the weather too cold. If they are good average colonies and are to be wintered in packed cases outside, I would leave the feeder on and cover it up well to retain the heat and the bees should come through all right.

If they are wintered in a cellar the feeders may be left on ,or a cake of bee candy laid on top.

V. How would it do to winter bees in a shed above ground, having an entrance through the wall to the outside, and covering the hives with straw ?

"Beginner."

Answer: If the shed was facing the south, with a good roof, I know of no reason why bees should not winter well packed in straw, providing the other necessary conditions were present, viz., plenty of good stores, ventilation and a good thick cushion of wood directly above the frames.

R. H. S.

St. Thomas. Ont.

THE NATIONAL BEE-KEEPERS' ASSOCIATION CONVENTION

Another slight postponement of the National Convention seems to be unavoidable. The Fat Stock show upon which we have depended for reduced rates upon the railroads, has been postponed two weeks. The reason given is "the inability of the builders of the amphitheatre to secure structural steel for the same," and they don't wish to hold the show out of doors, hence the delay. Of course, there will be no excursion rates during the first week in December, and, as it would be suicidal to attempt to hold a convention without excursion rates, the executive committee has decided to postpone the convention two weeks in order to take advantage of the Fat Stock show rates. The dates for the convention will now be December 19, 20 and 21.

The place of meeting has also been changed to Brunt Hall, in the Bush Temple of Music, corner of Clark St., and Chicago Av. This was done because it was feared that the accommodations at the Revere House might prove too limited. The Chicago bee-keepers, with their customary enterprise and liberality, wil pay for the use of the hall. It is only five minutes walk north from the Revere House, corner of Clark and Michigan streets, which will be headquarters for the members. This new place of meetings is in a new building, where everything is modern. There are adjoining committee rooms, toilet rooms, good drinking water and elevator service both day and night.

W. Z. HUTCHINSON,
Secretary.

First Day.

Evening Session—7.30 p.m.

"Wax-Rendering Methods and Their Faults," O. L. Hershiser, Buffalo, N.Y.

"Can the Tariff on Comb Honey be Tinkered to the Advantage of the U. S. Bee-Keeper?" Hilbreth & Segelken, N. Y.

Second Day.

Morning Session—9.30 a.m.

"How Many Bees Shall a Man Keep? E. D. Townsend, Remus, Mich.

"Short Cuts in Bee-Keeping," M. A. Gill, Longmont, Col.

"Producing Both Comb and Extracted Honey on the Same Colony," James A. Green, Grand Junction, Col.

Question Box.

Afternoon Session—2.00 p.m.

"The Control of Increase," L. Stachelhausen, Converse, Texas.

"Migratory Bee-Keeping—R. H. Holtermann. Brantford, Canada.

"The Dietic and Hygienic Value of Honey," Dr. Eaton, Chicago, Ill.

Question Box.

Evening Session—7.30 p.m.

"Contagious Diseases Among Bees and How to Distinguish Them," Dr. R. Howard, Fort Worth, Texas.

"Experimental Apiculture," Dr. E. F. Phillips, Washington, D.C.

Third Day.

Morning Session—9.30 a.m.

"The Honey Producers' League—Can It Help Bee-keepers?" R. L. Taylor, Lapeer, Mich.

"The Business End of Bee-Keeping," N. E. France, Platteville, Wis.

"Successful Experience in the Making of Honey Vinegar," H. M. Arnd, Chicago, Ill.

Question Box.

Afternoon Session—2.00 p.m.

"In What Way Can Bee-Keepers Secure Their Supplies at Lower Prices " W. H. Putnam, River Falls, Wis.,

"How the Producer and Dealer May Advance Their Mutual Interests," Fred W. Muth, Cincinnati, Ohio.

Question Box.

Evening Session—7.30 p.m.

"What Have We to Hope for from the Non-Swarming Hive?" L. A. Aspinwall, Jackson, Mich.

"Poultry-Keeping for the Bee-Keeper," E. T. Abbott, St. Joseph, Mo.

W. Z. HUTCHINSON,
Secretary.

AUTUMN.

Winds are swelling
Round our dwelling,
All day telling
Us their woe;
And at vesper
Frosts grow crisper,
As they whisper
Of the snow.

—Thomas Buchanan Read.

THE O. B. K. A. CONVENTION.

Dear C. B. J.:

If it wouldn't be considered an intrusion, I would like to say a word or two in reference to the recent convention of Ontario Bee-keepers' Association.

If any doubts ever existed as to bee-keepers being enthusiasts, they were all dispelled at that convention—a convention in a large city with its many counter-attractions, with the Ontario Fruit, Flower and Honey Show in progress; a convention whose place of meeting was moved twice during the sessions, and yet no falling-off of members in attendance, no lagging in interest, not a dull moment from start to finish. This, Mr. Editor, speaks volumes for the level-headedness and intelligence of the members of the O. B. K. A., and should be regarded as conclusive evidence that the affairs of the Association are exceptionally well managed. The lectures, papers, addresses and contributions were all good and the bee-keeper who did not attend certainly missed a great opportunity. That "Trip to Jamaica," by Mr. Laing, was pleasant and convincing, and the heart-to-heart visits with, and the public addresses of, our American cousins, Mr. O. L. Hershiser of Buffalo, N.Y., and Mr. W. Z. Hutchinson of "the Review," Flint, Mich.' contributed largely to the pleasure of convention week; hope they'll come again.

Your correspondent was the guest of President Sibbald and his estimable wife, at their beautiful residence, 400 Givens street, during a part of convention week, and would say that, as entertainers, as host and hostess, they thoroughly understood their business. Miss Sibbald, sister of our worthy President, kindly favored with some choice selections on the piano. The visit to that model home, so perfect in all its surroundings and appointments, and to that dear family, so happily constituted, will long remain a bright spot on memory's page. H.

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ADVERTISEMENTS

Advertisements for this column will be received at the rate of 25 cents for 25 words, each additional word one cent. Payments strictly in advance, as the amounts are too small to permit of book-keeping. Write copy of ad. on a separate sheet from any other matter and on one side of the paper only. Say plainly how many times ad. is to be inserted. Matter must reach us not later than the 23rd of each month.

WANTED.

WANTED—First-class light extracted honey, state quantity and size of package. Foster & Holtermann, Brantford, Ont.

WANTED—No. 1 clover or basswood honey, quote price and say how put up. would also contract for your next season's crop. G. A. Deadman, Brussels, Ont.

WANTED—A few gallons of good sorghum. W. J. Craig, Brantford, Ont.

WANTED—A light democrat or market wagon. D. Tattersall, Grandview, Ont.

TO EXCHANGE.

Would exchange two-frame reversible extractor (not automatic) for bees or honey. Wm. Bayless, Grandview, Ont.

Would exchange bee-keepers' supplies for beeswax or light extracted honey. Goold, Shapley & Muir Co., Ltd., Brantford, Ont.

Would exchange 50 Doolittle Division board Feeders for cash or beeswax.
F. P. ADAMS, "Bow Park,"
Brantford, Ont.

FOR SALE.

$10.00 will buy a hand-power circular saw machine. Freight prepaid to any station in Ontario. Apply G. A. Deadman, Brussels, Ont.

$50 will buy gasoline motor and outfit for bicycle, nearly new, cost over $100.00 wholesale; could be used for running extractor. Apply G. A. Deadman, Brussels, Ont.

Would offer one 6-in. and one 10-in. comb foundation mill in exchange for Honey, Beeswax or Bees.
R. H. SMITH, St. Thomas.