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West Maitland, N.S.W.: E. Tipper, February 28, 1911

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THE AUSTRALIAN Bee Bulletin.

A MONTHLY JOURNAL, DEVOTED TO BEE-KEEPING.
Published by E. TIPPER, West Maitland
Circulated in all the Australian Colonies, New Zealand, & Cape of Good Hope.

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"The Australian Bee Bulletin."

A Monthly Journal devoted to Beekeeping.

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Published by : E. TIPPER, West Maitland, N.S.W. Aus. Editor: W. ABRAM, Beecroft

MAITLAND, N.S.W.—FEB. 28, 1911.

EDITORIAL.

Rain, more rain—why there has been more rain in less than two months than at times in a year. Our district is blessed with about 20 inches of rain in a little over a month. Yet our bees have not been idle and have gathered a surprisingly large quantity of honey, nevertheless. Fortunately most of the heavy rains happened at night time and slight rains did not hinder the bees to gather heavy loads; from early daybreak till almost dark at night they were as busy as if paid double wages for overtime. And how grand the whole vegetation looks now. Some places suffered by floods, but as such lands are more productive afterwards, it may turn out a blessing later on.

The price of almost every commodity is getting higher; but beekeepers sell their honey cheaper than ever. One must come to the conclusion that keeping bees is the most profitable occupation; but I know that it is not so. Proper beekeeping requires considerably more study, experience and care than other rural occupations, besides the fact that not everyone is adapted for the handling of bees, and many would sooner pay a shilling a pound for honey than suffer a single bee sting; but stings and many other things the beekeeper has to put up with.

Another thing: it does not necessarily follow that because honey is sold cheap that there is a greater quantity consumed, because the consumer has to pay anyhow, the main difference being that someone else reaps the benefit. And do beekeepers expect buyers to offer double or any price above the lowest they can obtain it for, just because the production is unprofitable to the producers. But what is the use of harping unless beekeepers combine and act in harmony. Bear in mind that one season some districts are blessed with a plentiful crop, while at another season other districts are to the fore, therefore, harmonious combination would benefit all. When this is recognised by beekeepers then the industry can be brought to the high standard it deserves. If this contention is the right one, then why not combine and evolve a scheme beneficial to beekeepers? Take heed and act in unionism, and bear in mind that after plentifulness comes scarcity. Now is the time to act. In any case, why should honey be sold at 1d. or 1½d. per lb, anyhow ? Why, golden syrup and treacle, the refuse of refined sugar, sells better than that. Thus, henceforth, if beekeepers make their fortune, enough has been said on our part; and if they fail to get rich, blame anything, but who is to blame?

According to a paragraph in the "Agricultural Gazette," the Bureau of Microbiology, Sydney, found nosema apis in bees submitted recently for examination.

In conjunction to the above I may mention I delivered some bees to the Department, and have been informed that no nosema spores were found; but as my own investigations are not yet concluded, I do not feel disposed to refer to the matter more fully. I may mention, however, that at the same time I sent bees to Professor Dr. Zander, and have just received his reply. He states that after careful investigation he did not discover any disease in any of the bees sent. The intestines showed no sickly impression. At the same time he mentioned that the year before he received several phials with bees from Mr. Wilkinson, Melbourne, and every one of these bees revealed the nosema apis disease. I mention this because the Victorian expert expressed himself somewhere publicly that he supplied these bees from his farm; but no one has yet proved that the heavy mortality (in the Stawell district) of 996 colonies out of 1785 was due to nosema. The question is: Has the expert proved that said great loss was not due to nosema. Mere hypotheses do not count under such disastrous circumstances, and the loss of 996 colonies out of 1785 is by no means a usual occurence and cannot be treated lightly. I may add that Professor Dr. Zander has kindly sent me his book dealing with diseases in adult bees, and as soon as time permits I intend to translate the main points of his excellent treatsy for the benefit of beekeepers.

Honey Production.

The "Practische" gives the following figures:—

The greatest beekeeper of the earth is Mr. Harrison, in California, who possesses 6000 hives, and takes yearly about 100,000 kilogramms of honey, which is about 200,000 pounds. In Greece there are 300,000 hives, which produce one million and a half kilogramms of honey, or 3,000,000 pounds. In Denmark 80,000 stocks produce 2,000,000 pounds; in Belgium, 200,000 hives supply 5,000,000 pounds; in Russia, 110,000 stocks gather 3,000,000; in Holland, 240,000 stocks give 6,000,000 pounds; in Germany, 1,450,000 stocks produce on 40,000,000 pounds. Austria-Hungary has the largest number of hives, namely, 1,550,000, and the yearly production is from 20 to 21 million pounds, whilst the United States possess 2,900,000 hives, owned by over 70,000 beekeepers, who produce yearly on 62 million pounds of honey.

Something New.

A new comb has been invented which consists entirely of aluminium. Mr. Newman writes in the "Central" ; "The cells are on both sides complete for the storage of honey, pollen and brood. The weight of this comb is the same as that of a wax comb. Experiments with the artificial comb have given astonishing satisfactory results. Without hesitation the bees filled the cells with honey and sealed them properly. The queen deposited her eggs and the brood developed splendid."

What next? Instead of wax production there will be aluminium, and thus prosperity once more.

* * * *

BEE DISEASE—NOSEMA APIS.

Prevention Better than Cure.

Some diseases have been thoroughly studied, safe cures are known and practised effectively. Not so with Nosema apis, the most destructive and therefore dreaded malady, the cause of which Professor Zander, Erlangen, the eminent investigator of this disease, discovered, and who states that no remedy is known at present. Thus prevention must be the means adopted.

That the immense loss in bees is due to disease cannot be doubted any longer, though some prolific writers still doubt and even deny that there is any cause for alarm. These are best left to their own fate if repeated losses do not open their minds to facts.

To take honey when there is a surplus is not systematic beekeeping; but it is quite another matter, and not so easily accomplished to keep bees under adverse conditions and influences. The systematic beekeeper at all times assists his bees to withstand adversities, and if that is always done the results are to his advantage. In their natural state bees must take their chance, according to Nature's provision, in the hands of mankind they are dependent on them, and the beekeeper is bound to provide for their best comfort or take the risk of consequences, for which the bees are not to blame. Systematic beekeeping is different to what is usually done. Especially greater care might be taken to winter the bees; but this alone is not sufficient. At all times proper methods must be applied for the successful wintering, as thereon depends next year's result; it means looking forward, not backward, nor the present.

The symptoms of Nosema apis, paralysis, Isle of Wight disease, etc., are very similar, though varying slightly in different districts, and Australian beekeepers are well enough acquainted with same that there is no occasion for repitition. What interests us most is, how to prevent an epidemic occurrence of the malady? I have long since come to the concusion that it can be prevented. If there was any trace of the complaint last spring or at any time afterwards, the chances are in favour of a re-occurrence next spring, and likely in an aggrevated form. To avoid this, remove the combs and give combs from absolutely healthy hives before wintering the bees; or, better still, remove the old combs whilst there is a fair honey flow and let the bees build all new combs. Exchange the queens with queens of vigor and stamina, and the last thing before winter, confine the bees in compact quarters, with just enough honey for their need till spring. Sealed honey preserves warmth to a greater extent than empty or partly filled, but not sealed combs; but an excess of honey is superfluous, then why leave it in the hive?

Before winter the hives appear strong and seem to require many combs; but when the bees draw close together into their winter cluster, some combs are free from bees. This becomes still more apparent towards spring, when breeding begins afresh, more especially should the bees be flying often and be gathering in winter, when many get lost owing to changes of temperature, etc. It is then very advantageous to confine the bees as closely as possible, in order to enable them to keep the first brood as warm as is necessary for the delopement, the more so should the weather be changeable and the atmosphere damp. Empty space under the cluster is not so objectionable as space above; but empty combs permit the atmosphere, the moisture gathers and causes mildew, the unsealed honey becomes watery and even sour. Cold, such as most parts of Aus-

tralia experience, bees can stand wonderfully well, provided they have a compact home and sufficient food, as by resuming a little more honey they produce more health, also their drawing closer together prevents the warmth escaping. Dampness may cause dysentry. Therefore the bees need the greatest care and attention in early spring when breeding commences.

Another matter for consideration is the age of bees that go into winter. The younger they are the more likelihood that they live till others are hatching; but if they are nearly exhausted with work before winter, or if the bees start breeding later than usual, then many bees may die before young ones take their places, thus considerable amount of brood may be found in the hive, but not bees enough to keep it warm and well attended. So long as the number of bees is enough to look after a fair amount of brood while the weather is cold and damp, feeding with a little luke-warm honey two or three times a week helps to keep the bees warm and active. A quarter to a half pound, two parts honey to one part water is sufficient for a feed, while a weak lot needs less.

Now analyse the various methods together with the usual atttention given to bees, and it is clear that many have left much to chance, and that a great deal can be done to assist them. This entails considerable more work, care and forethought than hitherto thought necessary; but who thinks it not worth while may please himself. There are laws in various parts to compel the curing of diseases—though not in New South Wales—but there is no law anywhere that compels a beekeeper to treat his bees according to the proper methods, since bees though householder's property, do not even come under "Cruelty to Animals."

Should one or a few stocks become badly diseased, notwithstanding the best care bestowed upon them, through infection, etc., it would be advisable to sulphor the bees, boil the combs for wax, and clean the hive properly, or, better, perhaps, to burn the whole lot, in order to avoid infecting others, which is likely to happen if left alone till too late. That diseases are infectious or contageous is well known, and Nosema apis is no exception, as the depletion, partly or wholly, of numerous erstwhile well stocked bee-farms bear abundant witness, no matter what the unbeliever may say. Nor is race distinction any hindrance to its ravages. It must thus be patent to all that it is better to prevent an epidemic. With this object in view, I have pointed out how I have acted and avoided the trouble successfully. Outside influences may have aided me, but my assistance at all times cannot have been in vain, because others, here and there, have fared badly repeatedly. Thus, until a positive cure is discovered, which may not be long, since the cause is known, and which I shall not fail to announce as soon as available—I maintain that prevention is better than cure.

W. ABRAM,

Beecroft.

NOSEMA APIS IN AUSTRALIA.

My statement at Weisenfels that I thought that the bee disease Nosema apis would be found to be of world-wide prevalence has very soon been found to be correct. I recently received from Mr. W. Percy Wilkinson (Commonwealth Analyst in the Department of Trade and Customs) Melbourne, the following important information: "In the investigation of a disease which has his year broken out virulently in Australia, and which has

caused much havoc in many districts of Victoria, the microscope has revealed organisms which in every respect resembled your Nosema spores which you described in the "Munchener Bienenzeitung" for September, 1909. As I wish to have my findings confirmed by you, I am sending you two flasks containing bees which have succumbed to Nosema."

These bees reached me a few days later, and I at once made an examination of them. As a matter of fact, closer investigation showed that all the bees were virulently infected with Nosema. The abdomen in some of the bees was much swollen owing to the lower intestine being filled with excreta of a light color and watery nature, while this characteristic was absent in some of the others. The connection between the presence of the large masses of the parasite in the intestine and the mortality of the bees has also been demonstrated in Australia by experiment. According to what Mr. Wilkinson wrote me, healthy bees, fed on food infected with material containing Nosema, died in from two to six days. The devastation which the parasite has caused in the infected districts appears to be very extensive. In the "British Bee Journal" for February, 1910, page 80, it is mentioned that in one case out of 1,783 colonies no fewer than 996 have been destroyed by this Nosema disease. —Dr. E. Zander, in "B.B.J."

THE RIGHTS OF BEEKEEPERS.

By I. HOPKINS.

The delegate representing the Waikato Beekeepers' Association at the late conference of beekeepers stated a case in which a Waikato beekeeper had been threatened prosecution by a neighboring farmer for alleged trespassing of bees and their interfering with the latter's cattle at the drinking place. The threatened beekeeper already had the sympathy of the local association, which had secured legal advice on the matter, and the conference "unanimously expressed sympathy with the question of combating the bee trespass issue, and considered the Waikato Association had taken correct action in the matter." This means, of course, that the Associations represented at the conference will assist financially to defend any action taken against the beekeeper.

It is to be hoped, however, that some friendly adjustment of the difference between the two individuals may be made without having recourse to a law suit, which as a rule only tends to make contestants feel more embittered against each other afterwards. Every effort should be made when dffierences occur between neighbours to come to an amicable settlement between themselves, but if this seems impossible, they should mutually agree to call in some person of repute to consider the case, and abide by his decision, rather than take it to court.

Should an aggrieved party in a question of this kind decide to take action against a beekeeper for alleged trespass of his bees, it would be of such vast importance to every beekeeper, and the industry throughout the country, that the Beekeepers' Associations, and in fact, every beekeeper in the Dominion, would be justified in assisting to obtain the very ablest legal assistance to defend the case. Not that I would wish to see a defendant gain an undeserved victory, but a case of trespassing (?) bees is so peculiar, and so very rarely comes into court, that either side might win or lose on some legal technicality in the absence of a very able lawyer.

The only cases of the kind that I am aware of that have come before the

courts in English speaking countries during the past 35 years, were in America. Most of them were trivial cases, and set up no precedent, but the noted one, the final result of which has evidently had a lasting influence in deterring others from undertaking such litigation, was that of A. J. Powers, v. S. I. Freeborn, the former a wealthy sheep owner and the latter a neighboring beekeeper. The case was tried in the Richland Circuit Court, State of Wisconsin, the complaint being that the defendant's bees by working on the complainant's clover were thereby trespassing, and interfering with the latter's sheep. It was noted for the interest created both inside and outside the bee world of America, the same even reaching to New Zealand. The importance of the result of such a law-suit to the beekeeping industry, and the risk of it going against the beekeeper, where, the latter, a comparatively poor man, was called upon to stand aaginst a very wealthy person, called forth all the resources of American beekeepers, and the National Beekeepers' Association took up the case. Money was poured into the Association's coffers, the very highest legal representatives were engaged, with the result that judgment went in favour of defendant.

This trial came off in October, 1885, and was published in full in the "American Bee Journal" for November 11, 1885, a copy of which I have before me. About 18 months previous to this a Waikato beekeeper in the vicinity of Te Awamatu had been threatened with legal proceedings concerning his "trespassing" bees by a neighboring farmer. Hearing of this, and foreseeing trouble to beekeepers in the future unless light was thrown on the fact that bees, instead of doing harm to farmers, are productive of an immense amount of good, I, with the assistance of my late friend, Mr. L. J. Mulvany, who possessed a very complete library on agriculture, including agricultural chemistry, prepared a series of articles on apiculture in relation to Agriculture." These were first published in the "New Zealand and Australian Bee Journal" (I was then editing) in the latter half of 1884, and subsequently in the 3rd edition of my "Australian Bee Manuel," and the Government Bulletin, No. 18, on bee culture (which can be obtained free). I have good reasons for stating that they have been the means of bringing about a better understanding between beekeepers and farmers, the latter being antagonistic only while unacquainted with the benefit resulting from the work of the hive bees in pastures.

In this connection it will be a fitting conclusion to quote the words of the president at the recent annual convention of the National Beekeepers' Association (America). He said: "For a number of years the principal object of the association has been that of defending its members in their right to keep bees in certain locations. Ignorant and jealous neighbors have often been a 'Thorn in the flesh' of some beekeepers, but when their complaints were taken into the courts of law by the association, we have won in nearly every instance, and rightly so. That very important feature, or object, of this association is rapidly passing away. In other words, there is not now the demand for such defence, as the right to beekeepers has become so evident that to-day it is seldom questioned."—"N. Z. Farmer."

SEASONABLE HINTS.

SUPERSEDING QUEENS.

This is the best month for superseding old or defective queens, where it has not already been done. The end of Febru-

ary or very early in March is the latest time to which this operation should be left, but the earlier it is done now the better. There is always much more risk in introducing alien queens as part of the superseding process near or after the close of the honey season, than while the bees are busy gathering and storing honey, and beginners should bear this in mind. This is also a good time for "Italianising." Beginners who wish to convert their colonies of common bees into Italians cannot chose a better time than February. If Italian queens be introduced in place of the common ones by the middle of this month, there will be none but Italian bees in the hives when they get into winter quarters.

AUTUMN BREEDING.

Although we have not yet passed the summer months, a few words on autumn breeding will not be out of place, especially as the substitution of young queens for old ones has an important bearing on the matter. One of the features of good management is to provide plenty of young bees in each colony at the beginning of May, when they should be finally fixed up for winter. To obtain the young bees it follows that breeding must be kept up till late autumn, or, at all events, until May. Old queens, past their prime, or say, in their third season, cease breeding early in autumn; hence there are none but old bees to go into winter quarters, while younger queens keep up breeding till the end of May, provided there be plenty of food in the hives. The advantage of re-queening periodically therefore is obvious.

NEARING THE END OF THE HONEY SEASON.

When the month of February proves exceptionally dry, the main flow of honey usually closes suddenly toward the end of it, otherwise the flow may only ease off a little, and continue into March. It is, however, always wise to be prepared for the unexpected. When the flow ceases suddenly, robber bees are about at once, and are likely to cause trouble if the beekeeper is caught napping.

LATE EXTRACTING.

Some beekeepers leave their last extracting until the honey season was closed; this, I consider, is very unwise, not to say foolish. It may, of course, in some instances, be necessary to do a little extracting rather late, but I have known of quite a number who made it a practice to leave nearly the whole of their extracting till the close of the season, and I know of some who do so at the present time. No matter how careful one may be, or whether bee escapes be used, robber bees are bound to give trouble to those who work in this manner. My advice is, to keep the extractor going close up all this month, then if the season suddenly "chops off" you will have no necessity to open the hives while robbers are on the alert.

COMB HONEY IN SECTIONS.

When work in the sections appears to be slackening off, all the partly finished sections should be concentrated on the strongest colonies so as to avoid as much as possible having to carry over to next season any unfinished ones. It is a very good plan to place some shallow extracting frames filled with foundation in the half stories from which the partly finished sections are taken, to give the bees something to do in drawing out th combs, which will be better able to do than completing the sections.—BEE-KEEPER, in "N. Z. Farmer."

ROYAL EASTER SHOW SYDNEY

11th to 19th APRIL, 1911.

ENTRIES CLOSE:

EXPORT BUTTER	March 7
WINES	March 8
SPECIAL CHEESE PRIZES	March 13
HORSES (all Classes)	March 15
CATTLE (all Breeds)	March 16
SHEEP AND PIGS	March 16
POULTRY	March 17
DOGS	March 20
FARM PRODUCE	March 21
FOODS	March 21
APICULTURE	March 21
WOMEN'S INDUSTRIES	March 22
MISCELLANEOUS	March 23

PRIZE SCHEDULES & ENTRY FORMS

May be had on application to

H. M. SOMER,

Secretary.

Ocean House,

Moore St., Sydney.

THE ROYAL SHOW.

The Royal Show in Sydney, which will be held from April 11th to 19th this year, promises to eclipse all the splendid Exhibitions which have preceded it. The Royal Agricultural Society has apparently extended its influence throughout Australasia. Every year its roll of membership is increasing rapidly and embracing Stock breeders and others in the different States as well as New South Wales. It is also attracting the top-notchers in live stock from all the large Shows held in Australia, while New Zealand is becoming a consistent supporter.

Applications for schedules for the coming show are legion and the Secretary informs us that in addittion to the solid phalanx of old exhibitors who have, through bad seasons and good, made up the splendid displays which have been seen at Moore Park, there will be a large number of new people fighting for the coveted awards and the still more earnestly desired ribbons of the Society next Easter.

The schedule this year presents a few new features, but there are no very striking additions. The prize money has been added to in most of the principal sections, and thus some further encouragement has been offered to exhibitors. One of the principal new items is a class for ladies who will be asked to ride over the big fences in the Ring. This will be open to ladies who have not won prizes in other than amateur equistrienne events on the Sydney show ground. The first prize is £25, which is a nice little award for the daring and skill which must be displayed by the lady who will be fortunate enough to catch the eye of the judge.

A handicap trot is introduced for the first time. The event prize in this is £80, and £110 is given altogther for this event. The horses will be handicapped on a 2-35 basis, and will be trotted in heats, probably three in each heat. There is every prospect that the horse show will be a very large one, but the greatest increase will probably come in cattle, the season being extremely favorable in all the principal districts from which cattle are sent to the Royal Show.

The first of the entries for the Exhibition were those of the wheat classes which have closed with a total of over 70 entries. This is easily a record for and show held in Australia and is a good augury for the more extensive sections which are to come later on.

Visitors to the show ground will find it vastly improved since the 1910 exhibition. The council of the Society has voted £15,000 for works on the ground for the year, all of which will be completed before the Show. The principal buildings are a new double-decked grand stand, to be called the Coronation Pavilion, and new offices and reception rooms. The two stand side by side and form a very fine block of buildings. The stand will accommodate about 4,000 people The office accommodation is most modern—there are rooms for every purpose, including one which will be at the disposal of country bodies or presidents and secretaries of country societies, who may desire to hold meetings during the show. A new brick wall is being erected in front of the ground and the main turnstile buildings are also being erected of brick.

Easter will bring more visitors than ever to Sydney, and it is satisfactory to know that the big principal event will be greater than before.

Black Brood In San Joaquin Valley, California. Its Symptoms and Treatment.

RALPH BENTON.

In order to fully appreciate the California black brood situation in the San Joaquin valley, a review of the seasonal variation in honey flow with its attendant adaptations of procedure in apiary management will be necessary. Wintering in this locality is reduced to a minimum; the months of December and January being characterised by inactivity on the part of the bees, accompanied by a winter dearth of honey sources. In February and on through March and into April the orange bloom yields, in some locations, quantities of honey. During the latter part of this period other fruits bloom, and the foothills are clothed with an abundance of wild flowers. As might be expected, the bees build up rapidly, in some places store a surplus from the oranges, and swarm quite universally during April. There are two temptations that confront the apiarist at this time. Firstly, to move to the oranges, a paying practice undoubtedly for the individual, but one, in view of the presence and distribution of disease, fraught with danger to the beekeeping community. And secondly, to make extensive increase for the summer honey flow. This plan of procedure is, in view of black brood, extremely risky, and, furthermore, unless followed up during May and June with regular systematic feeding, quite untenable.

This starving period during May and June, coming as it does after the excessively stimulating early flow of honey, is doubly critical; and, as we shall see presently, is a host to be reckoned with in coping with black brood. The best plan to follow when the bees build up in the spring seems to be not to make increase, but to give the stronger colonies a limited amount of additional space and take steps to hold them over and prevent swarming. Some comb foundation may be given them, but there should not be very much put out; only as much as will be immediately occupied and drawn out; for we do not favor at any time the placing of foundation on a colony when the bees will not work on it. It should only be put on in sufficient quantities to insure their covering it and immediately drawing it out. If foundation stands in a colony very long it becomes fried out, rounded off, buckeled and coated over with propolis, and never makes so good a comb in the end. If much foundation is given at this time it posits consecutive feeding on succeeding days, a practice the value of which is questionable in light of the economy with which combs may be built at the opening or during a good honey flow.

One of the best aids to the prevention of swarming at this critical time in the spring, is the requeening of the apiary with young, vigorous queens, whose tendency is not to swarm. Furthermore, the cessation of brood rearing activities for a greater or less period attendant upon the operation of requeening will have a direct value in arresting the swarming of individual colonies, and contribute an important feature in treating for black brood after the Alexander or a modified Alexander method of treatment.

The factors which cause this somewhat phenominal honey dearth right in the presence of honey yielding flowers, are to a certain degree uncertain. The nights during this period are cool, and a strong prevailing wind sweeps up the valley, not only preventing bees from working but probably drying out, to a large extent, what nectar might be produced. The greatest factor of all, however, is the almost universal practice of cutting

the first one or two crops of alfalfa early in order to even up the stand of later crops, and, also, in order to get ahead of the foxtail and Bermuda grass growing in many hay fields as something of a pest.

Varying somewhat with seasons, but usually quite consistently, by the latter part of June the hot weather becomes constant and the nights quiet and warm, bringing on the steady alfalfa honey flow of July, August and September, not infrequently prolonged into October and November by the blue curl, spike or alkali weed, and the so-called jackass clover. Extracting begins some time in July and any where from one hundred to two hundred pounds surplus per colony may be consistently expected.

The Bee Disease Stiuation Acute.

Just how long black brood has been in California is somewhat a matter of speculation. We are of the opinion that it has been here for a good many years. Indeed, there is some evidence to the effect that it was here ten or twelve years ago. However this may be, certain it is here now, and was last year, and has been definitely seen in the San Joaquin valley for the past three or four years, although not definitely established to be black brood similar to that recently prevalent and so destructive in New York, until the epidemic of last year .

The disease first appeared extensively last season in Fresno county in a strip of territory about ten miles long; and has since been moving steadily southward into Tulare and Kings counties. It is significant that the disease is moving with the prevailing winds, and that in its progress it makes almost a clean sweep of every apiary large and small. The smaller comb honey apiaries of a half dozen colonies or so owned by farmers and non-professional apiarists are found to be infected, but not to so great percentage as the larger apiaries. This is probably due in the first instance to the fact that colonies in these small apiaries are left much to themselves, and furthermore are operated more as individual units rather than collectively as an apiary. In the larger apiaries the percentage of infectious runs as high as ninety per cent., and rarely below fifty per cent., except in exceptional cases to be mentioned later, or except in those apiaries which have undergone some system of radical treatment.

The individual colonies affected lose activity; and the bees crawl listlessly about dispersed over their combs. In a typical infection, half or more of the brood is infected and the queen makes no headway; the death rate of the colony slowly but surely depleting its numbers. Little of the infected brood becomes capped, and that which does seem to escape and mature yields not infrequently dwarfed and imperfectly developed bees. There is in the more severe cases a distinct acid and sickening odor to be noticed on opening the hives. The odor can nearly always be obtained by holding the infected frames close to one's face in the direction from which the wind is blowing. Early infection may be detected by the presence in isolated larva of a yellow spot within the curve of the larva as it lies in the cell. This yellow spot enlarges, the larva turns over in the cell, dies, and dropping to the lower side, gradually assumes a darker appearance, forming finally the characteristic dark brown or black scale of black brood. Repeatedly in the course of field investigations I have found the presence of both black brood and foul brood not only in the same apiary but in the same colony at the same time. The foul brood may be distinguished by its extreme ropiness and coffee brown color. Also, if present

in sufficient quantity the strong odor of a rank nature is distinctive. In foul brood, as is well known, nearly all of the brood becomes capped; and in many respects the disease is comparatively little to be feared if promptly and carefully handled.

Straight McEvoy System of Treatment Ineffective.

The McEvoy system of shaking twice and destroying the old combs together with the comb built in the interval between shakings, has not proved itself to be an effective method of treatment in combating black brood in California. To begin with, this system of treatment, standard for foul brood, posits two conditions; firstly, that the agency of transmission of the disease is the honey of the infected hive and bees; and secondly, that there is a good honey flow on, enabling the bees so shaken to recover themselves. In the situation under consideration neither of these conditions prevail. Although the exact cause of black brood is doubtful, it seems evident that the honey is not the chief, if at all, a channel of infection. Further, from what has been above mentioned in reference to the seasonal honey flow in the San Joaquin Valley, it is easily to be seen that the shaking plan on a wholesale basis is inexpedient during the spring honey dearth. This plan of treatment has been tried on a quite extensive scale, modified by giving the colonies full combs at the second shaking with the result of a very high percentage of or from without, is doubtful. In a comes from within the colony so shaken reinfection. Whether this reinfection region in which nearly 99 per cent. of the apiaries show a large percentage of infection, the opportunity and channels of reinfection from without are so multiplied that it is difficult in the absence of direct experimental work to arrive at a conclusion on such a point. But, however this may be, it is evident that under existing conditions the shaking plan is not effective, which is really the pertinent question the practical apiarist is wanting to have answered.

Alexander System Alone, Ineffective.

The system of dequeening for a period of from three to four weeks and then introducing a laying Italian queen, now quite generally known as the Alexander treatment, from the noteworthy success that the eminent New York apiarist attained in his black-brood-control-work, has not proved itself to be entirely successful. The success of the Alexander system again implies two things, namely, that the colonies be strong, and also that there be a good flow of honey on or approaching. The first of these conditions can be, in a measure, brought about by uniting weak colonies, provided the bee keeper takes his apiary in time before too many colonies become greatly depleted in numbers. The second condition so necessary to insure activity in cleaning out infected brood, it is difficult, almost impossible to adequately supply In those apiaries fed a regular amount of syrup, the bees were stimulated to greater activity and cleaned out infected material in a much better manner, but even then, not as they would have done with a good natural source of honey coming on.

Alexander-Miller System Better.

The modification of the Alexander system introduced by Dr. Miller, e. g., that of supplying the dequeened colony with a virgin queen in ten days to two weeks, instead of waiting three or four weeks and then introducing a laying queen, has, for many practical reasons, under California conditions, the ad-

vantage of the Alexander system pure and simple. Chief among these practical advantages is that of economy coupled with the inability of Eastern queen breeders to supply the demand for early bred queens. The California spring in the San Joaquin valley opens three months earlier than the Eastern queen breeder can supply queens, and with the first rays of spring, indications of black brood begin to appear. Because of the shortage of early bred queens, indeed the inability of the Eastern market to supply queens of any kind early enough, it seems advisable for the beekeeper to procure some good breeding stock the fall before, and then plan to dissipate some of the extra energy and activity of his bees early the next spring in multiplying this stock and requeening his apiary before black brood gets much of a start. This will not only supply queens early in the season when they are wanted but will be found to be much more economical and hence within the reach of every beekeeper, big or little. Under the Alexander-Miller system of treatment, the raising of one's own queens becomes simplified in that ripe queen cells, or newly emerged virgin queens, may be supplied queenless colonies directly, thus eliminating all of the work of stocking and establishing nuclei for mating purposes. The matter of securing fairly good matings, even with a limited amount of breeding stock at one's disposal, can be early in the season better managed than later, by simply preventing the rearing of drones in the apiary except in those colonies to be bred from; and further, by encouraging the rearing of a superabundance of drones of the desired strain through stimulative feeding and the judicious insertion of drone combs into the brood nests more especially where there are old queens.

In the acutal raising of queens, the common practice of simply distributing brood from the breeding colony to the queenless colonies that it is desired to requeen, is to be discouraged. Such a practice violates several of the canons of the queen breeder. To begin with, the chances are, since the colony has been suffering from black brood, that it is seriously depleted in numbers, and hence not of sufficient strength to properly feed and build down queen cells. Further it has been deprived of its queen and brood for some days and will hasten the development of queen cells to such a degree as to produce a lot of abortive, runty queens not of the right stamp to head honey colonies, much less to cope with the black brood epidemic. All queens should be reared at all times in full colonies, preferably in colonies strengthened with the addition of frames of emerging brood from other heathy colonies.

Modified Alexander System a Success.

A further modification of the Alexander, or Alexander-Miller, system, has proved itself more of a success; in fact, when systematicaly prosecuted throughout the whole apiary and its environs, the modified system about to be described has been found to be adequate and equal to the occasion. With the earliest symptoms of black brood, colonies are dequeened. At the same time all combs containing any signs of diseased brood are taken away and immediately boiled up for the wax that is in them. A convenient plan is to throw them right into a large galvanised iron tank of boiling water heated over a fire built in a pit just beneath the can as it stands in the open. A very desirable shape of can is a rectangular can provided with a partition running crosswise and extending nearly to the bottom. The combs are

placed in one side for melting and then with the aid of a forked stick the frames are thoroughly rinsed and pushed under the partition into the clean water of the other side, where they may be further boiled and removed free of wax. To assist in freeing the wax from the residue of cocoons, cast larval skins and other impurities in the combs, collectively and expressively spoken of as "slumgum," five per cent. of commercial sulphuric acid may be added. A stronger solution is not any more effective and is liable to make wax brittle, deteriorating it in value. A wax press, preferably on the Hatch principle, arranged, however, for pressure under hot water, is the most effective type. The melted comb and hot water may be dipped into burlap and folded in the press, and pressure applied, alternately released, several times before the hot water and melted wax is permitted to run off.

To return to the apiary. In about ten days queen cells should be removed, and again any further infected brood taken away and immediately rendered up. Then either ripe queen cells or virgin queens may be given the colonies thus treated . Or if it is planned to introduce laying queens they should be permitted to remain queenless ten to fifteen days longer. Weak colonies should be united and emerging brood given them. in the absence of a honey flow, systematic feeding for stimulation should be begun. For this it is not necessary to provide feeders, though feeders of the McIntyre type on the rear of the hives, or of the Alexander type under the rear of the hives, will be found convenient. The writer in his experiments in the field went down the rows of the apiary, and raising the covers of the hives, poured in about a half pint of warm syrup (equal parts of granulated sugar and water by weight) in the top story of each colony, just at sundown, to avoid robbing.

We deem the removal and immediate rendering up of combs containing infected brood, and regular systematic feeding, two important features to be incorporated with the Alexander or Alexander-Miller system, if either is to be successful under California conditions. In case of reinfection after requeening with young vigorous queens of the most resistant stock available, in subsequent treatments during the same year the queens need not be removed, except in the most aggravated cases of reinfection, but merely caged for ten to twenty days, and the colony in other respects treated as previously outlined, at the end of which treatment the queens are again to be released.

Carniolans take their Place Beside Italians as Resistant Stock.

We have mentioned the use of resistant stock in requeening. It must be borne in mind that this term is merely a relative one, for, at present, there are no strains of bees known to be entirely resistant to the brood diseases. There is, however, a noticeable degree of difference of susceptibility to black brood among the different varieties of bees. The common black or German bees are most prone to succumb. Italians, although not generally known to be resistant to certain of the diseases of bees, are, on the other hand, noticeably more resistant to black brood than are the Germans or hybrid-Italians, commonly kept. Of the several strains of Italians experimented with, the golden Italians seemed to be most resistant.

The writer is known to the beekeeping public to be a strong advocate and lover of the Carniolan bees and the gentler varieties generally. It can readily be imagined with what gratification and pleasure it was to us to find that

Carniolan bees, when tested side by side with Italians, were found to be equally resistant to black brood, and this predicted trait of theirs thoroughly established by experiment. In fact, it was with interest that we learned of a colony of Carniolans of the best stock obtainable in this country that withstood the black brood when Italians on every hand were infected and reinfected; and more than this, the colony in question supplied to weak colonies about it some twenty frames of brood during the spring months. It must not be construed that we base our estimate of the resistance of Carniolans entirely upon this single colony, but simply cite it as a striking example of what a blessing a good stock fo Carniolans can be even in an Italian apiary. Our real estimate of Carniolan bees has been arrived at through experiments with a large number of queens sent to the infected region, and, as we have said, they take their place beside the Italians as resistant stock, and one more good trait is to be identified with this irresistible and excellent variety of bees for the commercial beekeeper.

The Value of a Source of Honey During May and June.

From what has been emphasised in regard to the need of a source of honey in order to make the treatment of black brood effective, and, in the absence of such a source, the necessity of regular systematic feeding, the importance, if possible, of supplying the bees with a source of honey during the spring dearth in the San Joaquin valley is seen. During our field work in May and June last we had this feature in mind and everywhere looked for possible sources to fill in this gap. Our quest seemed not in vain, for in many places, growing, it is true, in a limited amount, yet, nevertheless, growing and slowly getting a foothold, we were pleased to find what we at once recognised as two invaluable sources of honey. We refer to the two sweet clovers, Meliotus indica, and Meliotus alba respectively. The former commonly known also as "yellow top," blooms a little earlier and is the lesser of the two plants, both in size and importance as a honey yielder. The white sweet clover, melilot or Bokhara clover as it is sometimes called, is a plant worthy of the consideration of every beekeeper who has the betterment of bee pasturage at heart. This Plant is a biennial, quite easy to start, and when once started spreads rapidly along roadsides, irrigating ditches, sloughs, and river bottoms; in fact, anywhere where it can get a foothold and have sufficient moisture to germinate. It is not a dangerous weed at all, as it can very easily be eradicated and stock will learn to feed upon it. The honey is a little dark, of a greenish murky color, but of pleasant flavor, and would be an invaluable source of stimulation at the critical time when the present spring dearth of other sources of honey is on. Every beekeeper should purchase some seed, and along in the fall when the rains have begun, about the time when alfalfa is sown, he should scatter it along roadsides and ditches all over his range and he will get his time and money back with interest a hundredfold. In fact, beekeepers' associations should seriously consider the purchase of such seed for distribution and broadcast sowing.—"Review."

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CONVERSATIONS WITH DOOLITTLE.

A Few Hints About Beginning in Beekeeping.

"I want to begin keeping bees next spring, and wish to prepare somewhat this coming winter. Can you help me a little?"

This subject of beginning in beekeeping is one of vast importance, at least to the beginner. As I look back to my own beginning with bees and think of the many difficuties with which I had to contend, owing to having no one to instruct me, I am willing to do what little I can to help you.

The first aim of the beginner in apiculture should be to post himself as fully as possible by a careful study of some one or more of our best works on the subject. And right here you have the advantage over those of us who began fifty years ago, as there are many good books on apiculture now, and several bee-papers, while there were only one or two of either, then. One might keep bees, and for a time make the business comparatively successful, without this preparatory study; but, like all other occupations, a thorough knowledge of first principles is of the utmost importance, and it will insure sucess when otherwise failure would be more apt to be the result of the work.

But don't think these books will help very much by a casual reading. They should be carefully studied till they become a part of your very nature, so that, when you commence with the bees next summer, you can put into practical use what you have learned. This study should, of course, be done this winter

The next step will naturally be the choosing of the frame which you will use. And here you will meet with a diversity of opinions, and it will behoove you to go slow. As a pointer I will say that the Langstroth frame has been used so long, and has stood so well on its merits with our most practical apiarists, that the average beginner will not be liable to make a mistake in choosing that.

If you should start with five colonies in Langstroth hives I would advise getting ten other hives. You might not use all of them the first summer, but it is well to have all you want, should the season prove above the average. As few as five colonies would be my advice, then you can depend on your old business mostly for your income until you are sure with the bees.

The next thing will be a location. This should be in plain sight of the house, and easy of access, so if you allow natural swarming you can see when the bees come out, or so that any disturbance may be noticed at once and remedied. The hives should face south to southeast, if possible; and if the ground can slope that way so much the better. Then if you can have a piece of woodland or a snug hedge on the west and north sides of the apiary, better still. If these can not be, a tight fence should be built. Bees, when in good condition, are rarely destroyed by cold, but they do suffer much from the disturbance caused by high winds and severe gales, so any thing done to relieve them in this direction is profitable.

I would not set the hives on benches. Make a low stand for each hive out of 2 x 4 stuff. Set the hives on such foundation, and attach an alighting-board to each hive, allowing the same to touch the ground at its outer edge. This will save you many bees from getting lost in early spring, when the sun shines intermittently, on cool days, for bees to crawl into a hive if they have a chance, when they are too much chilled to fly. The space in front of each hive for about four feet

should be kept free from grass or weeds, so that the bees may not be entangled on their return with heavy loads of pollen or honey.

My apiaries are arranged on the hexagonal plan, the hives standing ten feet apart in the rows, and the rows ten feet apart. Where space can be obained I prefer this distance to any other. One can get along with six feet instead of ten, but ten gives elbow room.

On the question of increase is where a great many stumble. They are too ambitious, and want to increase their number of colonies too fast, and simultaneously secure a good yield of surplus honey. The beginner naturally desires rapid increase, and at the same time he also looks for some of those remarkable yields of honey that he reads about. The first he generally secures, and the second he generally does not; and so he is apt to decide that his location is not a good one for honey. Allow me to press home on your mind that rapid increase and a large surplus can not be secured at the same time except in phenominal cases. Remember that every move toward increase, whether made naturally or by dividing the colonies, is in direct opposition to the storing of large yields of honey.

There are three things which are almost essential for you to know. 1. You want a knowledge of the nectar-producing flora of your locality; in other words, you should know every flower that grows within flight-range, and also its time and duration of nectar secretion. This knowledge will be the key to the situation, and the means by which you can work your bees to advantage. 2. At the time of the blooming of the main nectar-producing flora that yields a surplus above what is consumed by the brood and bees, have the hive full to overflowing with workers right in their prime. 3. Keep the whole working force together, if possible, while this surplus flow lasts. Of course the nectar must be secreted by the flowers, else a crop can not be secured. Every locality has its off year occasionally in this respect.—"Gleanings."

QUEER CLUSTERING-PLACES OF SWARMS.

By W. A. Pryal.

Bees, when swarming, are apt to alight in any place; hence we know of the colony of bees that occupied the lion's carcass, as related in the story of Samson, as well as many instances in modern times where they have preempted some queer homes. It was only the last spring that I read of a swarm in one of the cities of the State of Washington, that alighted on the trolly-pole of an electric car standing at the end of its run. Then, elsewhere, one took possession of a street-car, and sent the passengers scampering in every direction. Then we have heard of bees going into caves, rocks, holes in the ground, and into hollow trees, chimneys, etc. We have a small patch of red raspberries, some of the canes of which are supported by wires running lengthwise of the rows. The wires are carried by small posts driven at convenient distances, and to these are cross-arms, at the ends of which the wires are attached by staples. It was on one of these wire-supporters the one of my swarms alighted. The wire on the left, as well as the berry-vines, had to be removed in order to get a good view of the swarm.

It is a rather novel position for a swarm of bees to assume, hence my sending you it as a curiosity.

Here I might remark, without trying to be unduly "punnish," if I may be allowed to use such a word, the bees of the swarm shown had not a cross dis-

position, though they assumed a cross position.

Hiving Bees made Easy.

One day during the past swarming-season I had several swarms issue the same day in quick succession. The first alighted on the lower branches of a rather young cherry tree, so that it was an easy matter to secure them with the aid of a short step-ladder. Instead of using a basket into which to shake the swarm I took a pail or bucket made out of a kerosene-can. I had hardly shaken the bees on the cloth upon which I set the hive I intended this new swarm to occupy, when I discovered a second colony sending forth issue. I knew at once where these swarming bees would alight or make for. I lost no time in gathering the cloth about the hive, thus securing the bees in a net, as it were. Before I lifted the hive from the ground to remove it to the stand I intended it to occupy henceforth, some of the bees from the second swarm began to cluster on the cloth. I bushed them off and then went about some operations that required my attention. In the course of five minutes I looked over to the aforesaid cherry tree to see what size of swarm I was getting. Lo and behold, there was no swarm ! Closer observation, however, revealed the fact that there seemed to be a goodly number of bees flying about the old oil-can I threw on the ground beneath the tree after I emptied it of the bees I shook from the tree so soon before. Approaching to investigate, I found that the entire swarm had taken possession of the inside of the can, with the exception of a few bees which were hastening to enter. I threw a sack over the top of the can preparatory of getting the camera. When I was ready I partially uncovered the bee-container. Of course, I was not able to show the large swarm that clustered within. It was but a few minutes after the camera's eye winked that I had those bees running into a nice comfortable dovetailed hive. Really, it seemed to have all been done in the twinkling of an eye.—"Gleanings."

SIMPLE TALKS ON BEES.

Bee Diseases.

Unfortunately, when we have treated of the dreaded Foul Brood, we have not exhausted the list of diseases to which our honey-gathering friends are subject. The Isle of Wight has distinguished itself in an undesirable way by giving notoriety to a disease inaptly called after the name of that fair island. The "Isle of Wight Disease" was first reported in 1906, and after having worked havoc among the apiaries there, it spread to Buckinghamshire, Hampshire and other countries in England. Investigations have been made; remedies without number have been tried; patience and experience, science and art, have been brought to bear upon it, but its cause remains a mystery and its cure unknown. The affected bees may be seen crawling on the ground near their hives, but unable to fly more than a few yards; there is distension of the abdomen, due to the massing of material in the large intestine; the stocks dwindle and succumb in about a month or six weeks. Re-stocking with healthy bees has been tried in vain.

Early in spring, Dysentry sometimes shows itself in stocks that have been maintained in winter upon unsuitable food, or have been too long confined to their hives by severity of the weather. Bees require cleansing flights, and when these are not possible, Dysentry may set in. They will then discharge their excrements in the hive, as they never do when in a healthy condition. The precautions to be taken should aim at supplying each stock with suitable food that

may be sealed in the combs before advancing winter can render this sealing impossible, and to leave them undisturbed until the warmth of spring enables them to fly freely from the hive. For winter food, no sugar but pure refined cane sugar should be used. When Dysentery shows itself, the bees should be transferred to clean hives, soiled combs removed, and properly made candy should be given. With the coming of a few fine days, in which the bees can sport themselves out-of-doors, the attack generally passes away.

Paralysis is a disease which, in its symptoms, is not altogether unlike the Isle of Wight disease, but it sometimes comes and goes, appears and disappears, suddenly; the bees tremble as they walk, their abdomens become swollen, the healthy drag out the unhealthy, and if the disease is not checked, the stocks soon perish. Re-queening, transferring affected stocks to the stands of healthy stocks, and dusting bees and broodless combs with sulphur, are remedies recommended by experienced beekeepers who claim to have grappled with and overcome the disease.

"Chilled Brood," which is generally included among the diseases of bees, may be due to a sudden drop of tempertaure, or to careless manipulation at unseasonable times. The brood requires heat; the nurse bees will provide this necessary heat if they get a fair chance, but if a sudden spell of cold weather should arrive, causing the bees to cluster together, the brood outside the cluster may become chilled. Then follows death, the white brood assuming a grey tint and finally becoming quite black. Similarly, the manipulation of bees and combs in cold weather, and the exposure of the brood to chill winds, often cause the death of the larvae. During summer there is little danger, but in spring and autumn, when breeding is in progress and the temperature is uncertain, plenty of warm wraps should be placed over the frames, and exposure of the brood nest should be made only when necessary, and then with due caution.

Generally speaking, disease may be most feared where stocks are too small and weak to offer sufficient resistance to the infecting medium. Such stocks can never be profitable, but they may work much mischief by disseminating disease. While healthy, they should be united, two or more together, to make one strong stock. Scrupulous cleanliness should prevail in the apiary. Careful watch should be kept for signs of disease. The beekeeper should never forget the maxim which declares that prevention is better than cure.—J. G. D., in "Irish Bee Journal."

KEEPING BEES FOR A LIVING.

That article of J. C. Frank's, in last "American Bee Journal," reminds me quite forcibly of a convention held in an eastern city not so very long ago, when a certain gentleman challenged the idea that any one was making a living exclusively from beekeeping. the said gentleman, if I am correct, followed a number of callings, for in addition to being an editor, a poultryman and a beekeeper, he also was a minister of the gospel. In so far as I can remember the reported incident, no one called the bluff—for a bluff it was, pure and simple.

Just on the spur of the moment I could name at least a dozen men right here in Ontario who depend exclusively upon beekeeping for a living, and who do not get disappointed in their expectations, either. No doubt this same condition is true in nearly all the States of the Union, although it is bound to

be so more in some States than in others, owing to some places being better adapted to bees than are some others.

Of course, our friend might retort that these men all do some other work as a help in making things go, in addition to keeping bees. Perhaps so; and in just the same way almost every professional man will have some hobby, which incidentally will yield him a little revenue, yet said hobby would not lead us to say that a medical doctor does not make a living from his chosen calling, simply because he does some other odd jobs by the way of recreation as well as profit.

In my own case, I would say that for 8 years I have depended upon beekeeping for a living. Previous to that I was on the farm at home, yet all the time having the bees in a smaller way because of a liking for them. However, in the 8 years named, I have had a kitchen-garden in which many a happy hour has been spent, and in addiiton some revenue has come in as well, in the way of food products grown for the table. I have also kept some hens to supply us with eggs and chickens for the table by way of variety. Then, again, as most of the readers know, I have a weakness for scribbling for the bee-papers, said weakness yielding me a lot of pleasure, and at least enough money to keep me in whisky and tobacco! Yet, if asked how I make a living, the answer would surely be, "Why, by keeping bees, sure!" If any of my neighbors were asked the same question about me, they would be sure to make the same answer, although they all know that I keep a few hens and a small garden.

Yes, there is no doubt that many hundreds of men, and women, too, are to-day making a living out of bees, and although beekeeping is not a get-rich-quick business, yet it is an occupation fraught with so much real pleasure that I verily believe the great majority of the fraternity would certainly choose the same calling in life again, if such a thing were possible, and we had this life to live over again. Here is one at least that would do so, as I have never yet seen a man who had a job that appealed to me quite as much as the one I am at. Of course, lots of other fellows make more money, but more money can only bring pleasure (very often it brings the opposite), and if one gets all the pleasure first-handed in the business he is engaged in, wherein lies the advantage of making more money?—"American Bee Journal."

SHOULD A BEEKEEPER HELP HIS NEIGHBORS TO START WITH BEES.

Our well-known friend, G. M. Doolittle, page 752, Dec. 1, has an article on the above subject which contains a good deal of sound sense. I find that, from a business standpoint, to say nothing about a Christian standpoint, it pays to be honest and frank. It is neither honest nor kind to magnify or minimize the difficulties in connection with beekeeping. To withhold all information and to refuse to answer a question which can be answered briefly by even a busy man is petty. However, I do feel that there are beekeepers who have spent much money in gaining experience, travelling to conventions, and experimenting. For instance, I do not feel called upon to sit down when I can not do all my work fully, and educate some one else for nothing; neither would I allow any one else to do this for me. For years I have felt very strongly that it pays a man who wishes to specialise in bees to learn the business

from a specialist and not acquire every thing by dearly bought experience; and I for one have not felt like teaching some one my business and allowing him any more than actual expenses while doing so. Beekeeping is a profession. A man does not secure an education at considerable expense, and then charge nothing for instructing others. The beekeeping industry has been brought to its present condition, not by governments and government help, but by individuals giving out what they have learned. The safeguard against undue competition in beekeeping lies not so much in keeping methods of success secret, but in the fact that not many will carry out those methods. Those who realise that their crop has been produced as a result of money invested, as well as of thought, time, experience, and labor, should be willing to share their knowledge; but they have a right to consider it worth all that can be secured for it in the market.—"Gleanings."

SELECTION IN BREEDING.

Breeding Horns from Cattle Not the Same as Eliminating the Swarming Instinct in Bees.

By Raleigh Thompson.

A good many have been writing about breeding tails from cats, horns from cattle, etc.; but these writers have been thinking of one thing and writing about another. Has any one ever heard of a poultryman trying to breed hens that would not lay, or of a stockman trying to breed a non-breeding animal? The beekeeper wants a queen that will lay eggs by the thousand. Now, while it is true that hens do not swarm to keep up a supply of hens, nor do animals swarm to keep the stock from becoming extinct, colonies of bees must swarm, for that is nature's way of keeping them from dying out.

In poultry there are male and female for increase; but among the bees the male and female are for increasing the number of bees instead of directly increasing the number of colonies.

Suppose a colony were put in a box car, and the queen lived for twenty years. If this colony were put on to six combs it would swarm when the honey-flow came on. Man may breed wings and legs, and even heads from bees, for all I know, but he will never produce a non-swarming race.—"Gleanings."

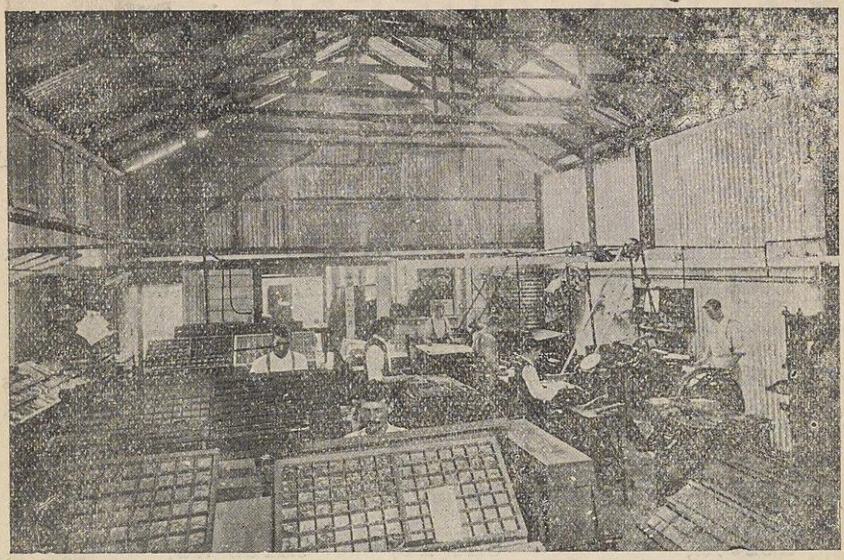
BEES CAPTURE A SHIP.

A swarm of bees recently settled on the steamship "Alleghany," at Port de Paix, Hayti, and at the expense of the Hamburg-American line rode to St. Marc, a distance of about 190 miles by sea. According to the chief officer, the "Alleghany" was lying off Port de Paix, on the northwest coast of Hayti, June 23rd. As the liner was about to weigh anchor. the swarm settled on the port of davits. A watch was kept on them throughout the day and night, and the next morning when the "Alleghany" was off St. Marc in Gornaive Bay, the sworm buzzed around the proffered hives, but soon made bee-line for St. Marc. Captain Meissner was furious. No bees, no passage money, and empty hives!

The foregoing is according to the "Baltimore News" of July 12th, 1910.—"American Bee Journal."

A. C., Marton, N.Z., writes:—I should be pleased if some of your readers can give results of trials made a few years back in "inverting hives for control of swarming."

[We shall be glad to have replies from some of our readers.—Ed.



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