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Gleanings in Bee Culture

VOL. XXXIX

OCTOBER 15, 1911

NO. 20

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Stray Straws
Siftings



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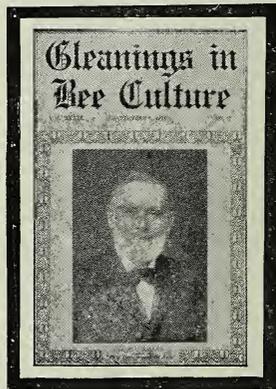
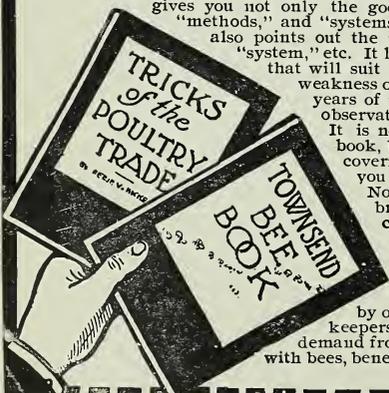
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Editorial

HONEY continues to be a scarce article. The quality this year does not seem to be equal to that of former years. Even much of the Western honey is a little off.

KILLING THE GOOSE THAT LAYS THE GOLD-EN EGG.

MANY are writing in that, owing to the extra-high price of sugar, they will not do much feeding. This may mean that many will let their bees starve. Can they afford, for a dollar's expense, to let four or five dollars' worth of property go to waste? Old bee-keepers know perfectly well that, in a single year, a colony of bees will very often make up for the expense and setback of two poor years twice over; and on the principle that it seldom happens that two bad years follow in succession, and that a third one never does so, then we have a right to expect that the year 1912, with the splendid rains we have been having this fall, will more than retrieve the loss of the off seasons. Look up, brethren. If you let your bees starve now, you will be kicking yourself next summer when your more provident neighbor harvests his crop of honey. Then you will be in the market to buy bees at prices a great deal higher than it will cost you to save what you now have at a small figure. Don't kill the goose that lays the golden egg.

RIPENING HONEY ARTIFICIALLY.

ON page 632 of this issue Mr. Isaac Hopkins takes a stand with the late E. W. Alexander against the opinion of most of the extensive honey-producers of this country—that honey extracted before it is capped, if ripened outside the hive, can not be detected from that taken from sealed combs. We do not want to appear as discrediting what Mr. Hopkins has written, for we are aware of the extent of his experience and of the vast amount of good that he has done the bee-keeping industry in his country; but we understand that chemists are able to tell artificially ripened honey from that ripened by the bees. The chief point of the controversy, however, as we look at it, is that the average bee-keeper had better err on the safe side and allow the bees to ripen the honey thoroughly inside the hive before it is ex-

tracted, for the reason that, without proper facilities for ripening it artificially, and without proper knowledge of methods employed, the results are likely to be disastrous. There is not much inferior honey on the market, perhaps; but there is enough, and strenuous effort should be made to improve the quality of honey rather than to cheapen the process of producing.

Perhaps the difference of opinion on the subject can be laid to the different conditions existing in New Zealand and this country; but the kind of honey certainly has a bearing on the question. We remember very well sampling some buckwheat honey that Mr. Alexander extracted from combs that were largely unsealed and then ripened artificially in the large tanks that he used, and this honey certainly had a good body and flavor. But sage and clover honeys, with their delicate flavors, have a distinctly finer aroma if allowed to ripen thoroughly *in the hives*.

"FIRST LESSONS IN BEE-KEEPING."

THIS is the title of an old bee-book under a new name, newly revised. Formerly it was known as "Bees and Honey," by T. G. Newman, then editor of the *American Bee Journal*. The work, still published by our contemporary, has now been revised by C. P. Dadant, certainly one of the best authorities on bees in this country or Europe, and for many years a large honey-producer, owning and operating a series of outyards. In glancing over its pages we notice numerous changes and many new engravings illustrating bee culture as it is to-day. In the preface the reviser says, "Those who have read previous editions may not recognize the book in its new form; but I have, nevertheless, tried to preserve as much as possible Mr. Newman's flowery descriptions, in which he excelled. I have also retained such of his methods as I consider safe and practical. In short, I have tried to produce a book suitable for beginners."

So far as we can judge from a glance over its pages, Mr. Dadant has done exactly what he says. The new title is certainly an improvement and in keeping with its pages. The price of the book, in paper covers, is 50 cts.

BEES MORE QUIET TO HANDLE UNDER A CAGE OR IN A HOUSE-APIARY.

ELSEWHERE in this issue Mr. J. L. Byer speaks of the ease with which he handles bees under a wire-cloth cage or bee-tent at a time when, ordinarily, they would be very cross. This, he explains, was done, primarily, to circumvent robbers. We have noticed this time and time again. When robbers are prowling around, bees are apt to be cross; but even when they are inclined to sting from other conditions, they can usually be handled very easily under a cage; for the moment that a cross bee or a number of them find they are imprisoned in the enclosure, their desire to sting is immediately transformed into the desire for liberty. They bump their heads against the wire cloth, and then when tired out they cluster quietly in the top of the cage. Outside cross bees, of course, can not make any trouble, and for that reason the apiarist can work hour after hour and day after day, with a great deal of comfort.

Years ago, when we had entire charge of our home yard, doing nearly all the work, it was our invariable practice, after the robbing season when we had more than a moment's work at a hive, to work under a cage. In our effort to circumvent the thieving bees, we found we had inadvertently stopped all the sting nuisance; and, as our friend Byer says, we also discovered we could take off the bee-veil because no bees offered to sting.

Precisely the same thing is observed when we work in a house-apiary. Bees released on the inside of the building seek only to get out, for the enclosure in which they suddenly find themselves is unnatural.

FINDING BLACK QUEENS FOR THE PURPOSE OF REQUEENING.

THE article by J. L. Byer, on page 619, is interesting because he undertook a problem that is new to most modern bee-keepers; that is to say, bee-keeping where it is carried on to any extent has to do mainly with Italians and hybrids, or, more correctly speaking, a cross between the old-fashioned blacks and the yellow bees. It is very seldom that we find an apiary of any size that has pure blacks—such blacks as we used to see in ye olden days.

The editor well remembers in the early 70's what a time he used to have in trying to find black queens; how two or three of us* would collect around the hive as the black fellows boiled over and ran like droves of sheep from one part of the hive to the other until all seemed one moving mass of confusion.

Mr. Byer's problem was the more complicated because he undertook the work during the robbing season.

We might say that he wrote us, as he did

a number of others, asking for the best method of hunting up black queens. We suggested the use of entrance-guards, shaking the bees in front, and catching the queen when she attempted to get in. But that was impracticable on account of robbing. Elsewhere in this issue J. E. Crane gives a method that he thinks eliminates the difficulty almost entirely. See page 615.

But why is the matter of finding black queens of particular interest now—especially so if we do not have black bees in the modern yard? Simply this: It is proven now, we think, beyond any question, that black bees do not resist foul brood, especially the European type, nearly as well as pure Italians. It has come to pass that many of the up-to-date bee-keepers are now compelled to buy out their neighbors' "black stuff" and Italianize it. The disease has been spreading, and their only protection lies in having only pure Italians. What Mr. Crane and Mr. Byer have to say in this issue on finding queens will be read with particular interest.

BLACK BEES NOT IMMUNE TO THE RAVAGES OF EUROPEAN FOUL BROOD.

ELSEWHERE in this department we refer to the fact that the old-fashioned blacks do not resist European foul brood as do the Italians, and the same is true to a great extent of hybrids. In this issue Dr. Miller speaks of the recurrence of European foul brood among his bees. He does not touch on the question whether he has, during the last two or three years, Italianized any of his apiaries. For many years he has rather favored hybrid bees—not only because they were cheaper, but he thought them as good as if not a little superior to pure Italians in the production of *comb* honey. Now, then, as it seems to have been pretty well proven that European foul brood is inclined to linger in an apiary of hybrids or blacks in spite of treatment, we wonder if our good friend the doctor has yet Italianized. Mr. S. D. House, of Camillus, N. Y., showed us an apiary a year ago, with his strain of pure Italians, that did not have a trace of European foul brood; and he assured us that the disease existed among all the bees of his neighbors who had hybrids and blacks within a mile or two. Mr. House considers a vigorous strain of Italians as almost entirely immune to European foul brood. One of his pupils, Mr. Irving Kinyon, whose apiary we carefully inspected, showed no trace of the disease, and Mr. Kinyon, like Mr. House, attributed that immunity to vigorous Italian stock.

The inspectors of New York, if we are not mistaken, are urging the very great importance of Italianizing to ward off disease. Mr. Byer is only one among hundreds of others who are now taking steps to insure themselves against the European type of foul brood. In fact, this year, so far as our experience goes, shows the largest trade in Italian queens that we have ever known.

* It seemed to require three pairs of eyes located at different points of view to locate the queen in her wild scramble with the rest.

AUTOMOBILES FOR BEE-KEEPERS.

ALMOST every day we get an inquiry from some one relative to the use of an automobile in the apiary, or else some one who already has a machine writes of his experience in using it for hauling bees, etc. We are expecting to have a photograph very soon, showing how one of our subscribers who had rented a high-powered truck hauled his bees for less money than he had always spent for the horse-drawn vehicles used before.

We have been asked a number of times to give our opinion as to the best car for the bee-keeper, but always replied that we did not regard any one car the best for all conditions and circumstances. The simple machine, and the one that has good material combined with good workmanship, is the one to buy. High speed is by no means an essential, as this does not necessarily indicate a good reserve of power economically applied when the roads are bad and the load heavy. There are a number of good reliable machines that are neither expensive nor high-powered. Starting with the little Brush and Sears, we might mention the Reo, Ford, Overland, Cartercar, E. M. F., Buick, Maxwell, etc. We have seen all of these running in this vicinity, and we believe that any of them would be a safe investment for a bee-keeper or farmer. The experimental stage, to a great extent, has passed, and the machines are becoming so standardized that the prices have become lower—or, rather, the same amount of money to-day buys a much better machine than it did five or six years ago. We know that some are holding back, fearing that some great discovery or revolution in invention will make all existing machines out of date; but we regard this as a very remote possibility.

WHAT IS THE BEST FORM OF TRANSMISSION?

We have also been asked what transmission to select. By way of explanation we would say that, since it is not practicable to start and stop the gasoline-engine in the modern automobile every time the car is stopped and started, there must be some form of clutch and change-speed mechanism which will allow the engine to run faster on bad roads and the car itself slower (thus giving the engine greater leverage), and also to enable the engine, without reversing its motion, to drive the car backward.

By far the larger proportion of machines manufactured to-day have the sliding-gear transmission, with three speeds, forward and reverse. These have the advantage of efficiency and an intermediate speed on rough or bad roads. The disadvantage is that this type of transmission requires considerably more skill to operate than any other form.

The planetary transmission (two speeds forward and reverse) is ideal for a light machine, but is hardly suitable for large cars where roads are rough or hilly, and where medium speed and much power are required. This transmission has the advantage of be-

ing easily operated. The Ford, which enjoys a larger sale than any other machine, has the planetary transmission; and since this is a light car, having ample power for its weight, the planetary gives splendid results.

The third type of transmission, which is less used than any other, perhaps, but which has a number of advantages, is the friction transmission, with an infinite number of speeds. It is quiet at all speeds, the easiest operated of any, and the simplest. In fact, the only part that wears out on this transmission is the paper rim of the driving-wheel, which, after three or four thousand miles' usage, wears down and has to be renewed at an expense of about three dollars. The reason why this type of transmission is not more universally used is that a number of concerns manufacturing very cheap cars utilized this transmission with plain bearings, which gave a great deal of trouble. It is highly important that a friction transmission have the best ball bearings in order that it may have long life and the proper efficiency. The friction transmission in the Cartercar has many times proven its reliability for every thing except racing and extremely high speed; and the fact that quite a number of the manufacturers of the heavy trucks are beginning to use this form shows that it is well adapted for hard service. Indeed, for truck work we regard it by all odds as the simplest to operate and the most reliable. The fact that the engine can be geared to any ratio to the speed of the car makes it possible to pull a heavy load over bad roads where any other type of transmission would stall the engine.

The one objection to the friction transmission is that a chain has to be used instead of the customary shaft drive as found on most cars. The chain is more efficient than the shaft drive, but makes somewhat more noise, especially when the car is running at a speed of over twenty miles an hour.

An automobile man said to us not long ago: "Although most people wait for good weather in the spring before buying an automobile, the fall is really the best time to purchase a machine. The factories are not so crowded then, and a more carefully assembled car is the result." In the spring, all is rush and hurry; the dealer and manufacturer are both working at a disadvantage; and the customer, when he finally gets his machine, well along in the summer, is in such a hurry to use it that he fails to make a study of it and learn how to take care of it. Instead, he gets on to the road at once, and in many cases actually abuses his car before he understands enough about it to take care of it properly. Most of the factories have their next year's models ready early in the fall, and there is really no object in waiting till spring. Of course, it may not be possible to use the car very much through the winter; but at the same time it is a good plan to have it on hand ready for business when it is needed.

Stray Straws

DR. C. C. MILLER, Marengo, Ill.

E. M. GIBSON, page 530, my experience with whole bottom-bars in connection with splints is probably much less than yours, and it may be safer to go by your experience and use the split bottom-bars.

BASSWOOD HONEY in many regions appears almost black!—*Deutsche Bzcht.*, 145. [Is it not possible that the basswood honey, instead of being almost black, was mixed with an almost black honey from some other source? We doubt if any pure basswood honey is ever almost black; it is, in fact, almost the whitest honey that is produced.—ED.]

THE DISGRACE of the nation by Secretary Wilson may be a good thing if it rouses the people to the horrible fact, as stated in *The Epworth Herald*, that since the days of Blaine it has been the settled policy of the government to aid the liquor interests. [If what you say is true, it is not always going to be the settled policy of the government to aid the liquor business.—ED.]

GLAD TO SEE A. I. Root lift his voice against the terrible divorce scourge. A heavy blow at the thing has been struck lately by an Illinois judge, ruling that, when a temporary residence is gained in another State just for the purpose of getting a divorce, that divorce doesn't count in Illinois. What we need is laws and rulings, not to loosen, but to make tighter the bonds of matrimony.

A. I. ROOT, although a bit late, let me congratulate you on your 50-year trudge alongside so good a woman. Well may you say to her in Browning's words:

Grow old along with me!
The best is yet to be,
The last of life, for which the first was made.
Our times are in his hand
Who saith, "A whole I planned:
Youth shows but half; trust God:
See all, nor be afraid!"

A. I. ROOT goes without supper, and eats apples. For the present I'm going without breakfast and filling up on ripe pears. [The fact is, several good apples will make a good supper, a good dinner, or a good breakfast. The same is true of pears. President Taft is said to eat only apples for his lunch at noon. The other day a young man told us he had been without work, and had been walking twenty miles a day hunting for a job, and all he had had to eat for three whole days was apples that he picked up in going through the orchards. He did not look as if he was starving either, by a long way. Say, doctor, are you poking fun at A. I. R. or at yourself? If so, you should have labeled this Straw as a joke.—ED.]

HIVE ODOR, according to N. Ludwig, *Leipz. Bztg.*, 131, goes further than is generally supposed. Give bees a frame of honey from another colony, and directly there is excitement, the bees pitch upon the honey, and likely play at the entrance, although

they may already have plenty of honey in the hive. From a frame of hatching brood brush all the bees, wait till a number of young bees have hatched, and then put them on the brood-frames of other colonies. The strangers will be seized by the wings and dragged to the entrance. I wonder now. [We never saw young bees—at least bees just hatched—receive any more hostile attention than mild toleration. In other words, very young bees are received the same as bees just hatched from the hive, according to our experience, anywhere and any time. We believe in colony odor and in queen odor; but Mr. Ludwig is apparently overworking colony odor.—ED.]

DR. WILEY may well thank his enemies for their frantic efforts to oust him from office. Nothing could have shown him so plainly the hosts of friends he has made all over the country by his brave fight for the interests of the people as against the interests of The Interests. [Had it not been for the people, Dr. Wiley would have been shelved in disgrace. We notice by the morning papers that McCabe has been dismissed, and Dunlap given an indefinite leave of absence. It is about time the Remsen Board were given their walking papers also. It was created, apparently, for the purpose of setting aside Dr. Wiley's important decisions, or, rather, decisions that affected big interests. At all events, the big corporations have got off easy and the little fellows, without influence or money either, have been made to meet the requirements of the law. We hope that Dr. Wiley will now be able to make some of the big fellows understand that they too must obey the same law that should be no respecter of persons.—ED.]

EDITOR YORK, according to *American Advance*, has been interested in the liquor business—in a way. A liquor-manufacturing concern sent him a nice little advertising contract, which was promptly returned, with the reply, "Not for all the world would we advertise whisky. Better get into some honest business quick." The intimation that making whisky is not an honest business was taken in high dudgeon. "We let you know that we expect a prompt letter of apology from you, in which we expect you to state plainly you did not mean a word of what you said." And unless the apology was received in six days (by Aug. 16) something might be expected to happen. The reply was not an apology. Quite the contrary. Aug. 16 passed without any earthquake, and George is still out of jail. [Good for Bro. York! There is probably not enough liquor money in this whole country to make him say that the liquor business is an honest one. Too many publishers are influenced by the big stick of "advertising." See what Collier's has to say about this.—ED.]

SIFTINGS

J. E. CRANE, Middlebury, Vt.

Mr. B. D. Cook, a master of his profession, looking over our bees preparatory to fall feeding, reports that he finds carbolic acid a great help in preventing robbing.



Mr. Byer states, page 453, Aug. 1, that British Columbia has the strictest foul-brood law yet enacted. Hold a little, my brother! Massachusetts has a law that holds bees in quarantine unless accompanied by certificate from an inspector that they are free from disease.



In attending the Charter Oak fair at Hartford, Conn., recently, I was introduced to a physician who told me that the medical profession had recently discovered that honey is one of the best remedies known for nervous exhaustion, the patient taking from a teaspoonful to a tablespoonful of honey in a glass of water six or seven times a day.



On page 459, Aug. 1, Mr. Beucus has given in a single paragraph more truth about the cause of swarming than has, perhaps, ever before been condensed into the same space, or possibly more than all that has been written on the subject before. It tallies exactly, too, with the conclusions I had reached some time before. Indeed, I had hoped to write up the subject when I had time, for I believe that, with the knowledge we now have, we may be able nearly or completely to check swarming by natural rather than artificial means.



Hello, friend Doolittle! You say, page 454, Aug. 1, that to look up black or hybrid queens you sit down and examine the combs until the queen is found, etc. Now, then, I want to know if you can do that for an hour when no honey is coming in, without music about your ears in the key of seven sharps. Yet we have been finding them this season for many days, sorting out the old or defective ones with great rapidity. We use a queen sieve, and are not troubled by robbing. You say, too, on the same page, that a dark room keeps the color of combs better than a light one. Goodness me! I thought the less color we had on our surplus combs the better; while, poor ignoramus that I am, I have been keeping a thousand combs in the light of a window for the avowed purpose of getting rid of the color; and as fast as they lose it I take them down and replace with others.



"Every one his own foul-brood inspector" is the heading of an editorial, page 448, Aug. 1. A capital idea, surely; but the majority of bee-keepers can not see—not that they are without eyesight, but they have not

been trained to look carefully enough to notice the difference between healthy and diseased brood. I find some intelligent bee-keepers on the watch for it; but until more than one bee-keeper in seven reads some journal devoted to bee-keeping, not much will be accomplished. I was surprised when I began inspection work to discover how very few ever read or care to read anything about bees. Why! the ignorance of the great majority of bee-keepers is beyond my powers of description.

I visited a yard the last of May, which is owned by a young man. He was not at home, but I showed his father the disease in various stages. When I was that way again, the young man said his father showed him the disease, but that he had to show him the second time before he was sure of it. To his credit let it be said that, when he did see it, he went to work with a will and cleaned out his yard in good shape.



Page 415, July 15, the editor calls on me to "describe exactly how to use" carbolic acid to secure the best results. I can not do better than give my experience in a single instance. On the afternoon of July 24 I rode with Earl M. Nichols from Lyonsville, Mass., to Reedsboro, Vt., to inspect a yard of some thirty-five colonies of bees. We arrived in the midst of a heavy thunder-shower, and could do nothing that day. The next morning was clear, and the sun was shining when not obscured by passing clouds. Mr. Crozier, a very intelligent bee-keeper in whose care the bees were, informed us that there had been no honey coming in for some time, and it was almost impossible to handle them in the open on account of robbing; and he had a small inclosure made of fine wire cloth where he could open a hive when absolutely necessary. Most of the hives had one or more supers which, of course, had to be removed to reach the brood-chamber. The bees, as I understood, were to be shipped later into Massachusetts, where the law is very strict; besides, Mr. Nichols would not want any bees with the least suspicion of disease near him. The bees were Italians with an unenviable reputation for robbing. We worked leisurely, examining every hive carefully, and, when through, there were very few bees lurking suspiciously about the hives. I had with me a ten-per-cent solution of carbolic acid and an atomizer. Before opening a hive I would sprinkle a little of the acid on the front of the hive and about the entrance, or, more frequently, two or three at a time. Possibly a much weaker solution would do just as well, although I am not certain. Now, I would not say that, if the acid had not been used, there would have been high-handed robbery; but it was an occasion where, if ever, we would expect it.

BEE-KEEPING IN CALIFORNIA

P. C. CHADWICK, Redlands, Cal.

Friend Hutchinson said, "Keep more bees." Dr. Miller says, "Keep better bees." It might be well to add a third bit of advice, "Keep bees better."



There are not many apiaries in this locality that could practice outdoor feeding without supporting a few neighboring colonies. There are a thousand or more colonies within reach of mine.



As long as sugar retails at about \$8.00 a hundred pounds, the price of honey should keep up well. During a recent trip to San Diego I noticed extracted honey retailing at 12 cts. a pound.



I sometimes wonder what would be the result of a thorough inspection of some of our California apiaries, in line with modern ideas on cleanliness and sanitation. I am convinced that some could not stand such a test.



We have just had more than an inch of rain, which is unusual for September; but it will be of little practical value, as it is probable it will be gone long before time for the regular rainy season. Besides, such early rains are not considered a good omen for the rainy season.



We want the National convention in 1915. It will be hard work to bring it to the Pacific coast; but with a world's fair at San Diego and one at San Francisco it should be an easy matter to get it that particular year, Los Angeles being an ideal place between the two cities mentioned.



Skunks have been very troublesome for some time. Hardly a colony in the yard has been left alone. I am using arsenic and eggs to destroy the pests, with good results. A stock of old bees can be rapidly depleted at this time of the year when breeding is slack and old bees are being regularly destroyed.



I am in receipt of a letter from Mr. J. D. Bixby, of Covina, Los Angeles Co., asking me to visit him and to see some genuine downeast black brood. Mr. Bixby fought the disease six years ago in New York, and should know what it is. It looks dubious when such reports as this come in together with that of Mr. Rays, of Monrovia. I ex-

pect to visit this infested district soon, and to learn more about this disease, for my own benefit, not being acquainted with it in this form. My experience with the American form, however, has taught me how to cope with it; and while I entertain no fears, I confess I am much worried over our proximity to this new form.



There is no part of a hive as indispensable as queen-excluders; yet to my notion, aside from the matter of economy, their use is conducive to more sanitary conditions. The larvæ can then be left undisturbed in the lower chamber, which is much better than later to strain them out of the honey. In many apiaries in California where they are not used I have seen conditions that were revolting.



The subject of queens laying eggs that would not hatch, commented on by Dr. Miller, p. 418, July 15, brings to mind a case that occurred in 1905. The queen was self-hived on empty combs in a hive where a colony had died. She laid continually for over three months, having been supplied with brood to help her restock the hive; but when it seemed to be a hopeless case she was destroyed. I had previously supposed that any egg laid by a queen would at least hatch drones; but this has left me in doubt.



Quoting Arthur C. Miller, page 560, Sept. 15, "From the writer's point of view Mr. Beucus erred in trying to put the various forms of absconding in the phenomenon of swarming." Swarming, to my mind, is not in any sense a phenomenon, but a law of nature, just as truly as reproduction in any form of life is a law of nature. To speak of it as a phenomenon is to discredit nature's laws. Quoting again, "Normal swarming is always accompanied by the production of queens." Here another law of nature is followed, that of self-preservation; for resources for a future queen for the parent colony are left when the swarm with the old queen issues; otherwise the ends designed by nature would be defeated, and the new swarm would become no more than an absconding one from the standpoint of reproduction. Superseding is in accordance with the same law, and is a most beautifully worked-out plan. If swarming, then, is one of nature's laws, success in controlling it will depend on one's ability to thwart those laws. Cell-building will never occur except in obedience to one of these laws; and theories attempting to eliminate the law of reproduction entirely are destined to be exploded.

Bee-keeping in the Southwest

LOUIS SCHOLL, New Braunfels, Texas

COMPARATIVE PROFIT OF EXTRACTED, SECTION, OR BULK COMB.

In answer to several letters regarding the comparative profits per colony when run for extracted honey, section comb honey, or bulk comb honey, the following, which is in part a copy of a letter in answer to a similar enquiry, will serve to show to a certain extent the difference in production of each of the above kinds of honey.

An average yield per colony, well located, should be at least 100 lbs. of extracted honey. During favorable seasons, and where the bees can be gotten into the best possible condition for the honey-flows, this can be doubled or even better. This amount, 100 pounds, is meant as an average per colony for an entire apiary; whereas some colonies, especially strong, may gather as much as four or five hundred pounds of extracted honey in a single season, if rightly managed. A sufficient supply of empty combs given at the right time, so that the bees will have all the room needed will help much toward accomplishing this. At the same time there may be colonies in the same yard that will not reach the hundred-pound mark, thus bringing the total average of the entire apiary down to 100 pounds, more or less, according to the season.

With comb-honey production these large yields can not be obtained, the main reason being that the bees are required to build new combs in which to store the honey. This delays the work materially, besides making it necessary that they consume from 12 to 24 pounds of honey, out of which the wax is secreted, for every pound of comb built, thus costing much loss of time and honey in the production of comb honey. Besides, the bees do not like to build in the small compartments of the section super, and hesitate to enter them readily. This causes further delay, loss of time and honey; and as this condition results in the bees becoming more or less crowded in the main part of the hive, which often incites the swarming fever, the bees swarm instead of gathering honey when the main flow comes. The result is a great deal more work for the apiarist and a smaller average of honey per colony, ranging from 50 to 125 lbs. of section honey per colony.

Although some persons believe that comb honey ought to be the cheapest in price since its production saves the bee-keeper all the trouble of extracting the honey from the combs, the explanation above will doubtless reveal at once the reason why bee-keepers should receive a higher price for comb honey. With extracted-honey production the combs once built are used over and over again, the honey extracted from them, and the combs returned to the hives to be filled again, thus saving all the loss of time and honey that takes place in comb-building. Besides this, the cost of preparing the comb-

honey supers every year with new sections and foundation, and the extra labor of getting those ready, and further labor and expense of putting the comb-honey in expensive shipping-cases and crating these before the honey can be marketed, increases the expense and lessens the profits of comb-honey production over extracted honey.

But since the market demands both kinds, and it is often hard to sell extracted honey, both forms are produced. It is rather difficult to say just what the relative net profits would be in each case. Granting that an average yield of extracted honey is 150 lbs. at 8 cents per pound, the result would be \$12.00. Figuring that, under the same condition, the average for comb honey would be 80 lbs. per colony, selling for 15 cents per pound, it would also be \$12.00. While the price received in each case is the same, the production in one is the easier and cheaper, and hence the profits the greater. While the comparison used here, so far as the figures are concerned, may not be exactly correct for all localities, they are very near right for our own here in this part of Texas, and for a long period of many years. The prices quoted are those ranging on the average market here at this time as received by the bee-keepers.

Since the expense of section-honey production is so much greater, the Texas bee-keepers long ago resorted to other ways of producing comb honey, and to-day there is very little section honey produced in this State. Bulk comb honey, on the other hand, is the leading product of the Texas apiaries, and is produced in shallow frames with full sheets of foundation, which are easily put in; and as the bees do not hesitate to enter the supers, much larger averages per colony can be obtained. Although the bees are required in this case to build their own comb, which would be a loss in this respect, it is not necessary to crowd the bees, and less swarming is the consequence; and as they work much more readily in the supers, the colonies are much more easily managed. On the whole, bulk-comb-honey production is easier, and less laborious and expensive, than section honey, and is not much more difficult than extracted, while the profits are much greater. Bulk comb honey is sold at an average price of 11 cents per pound after it is packed for the market. It must be considered that one-third of the honey in the package is extracted honey that is poured over the comb honey after the cans have been packed full to fill up the open spaces and make up the required weight. Figuring the real price of the comb honey by itself, therefore, we find that the bee-keeper receives 12½ cents per pound for the comb honey. This is obtained in this way: A sixty-pound can of comb honey at 11 cents per pound will be \$6.60. Since 20 pounds of the contents is extracted honey

Continued on page 633.

Conversations with Doolittle

At Borodino, New York

WORK WITH THE BEES IN THE FALL.

"What should be done with the bees in October, when the honey crop is entirely over, but when there are still supers on—mostly those holding the combs that have been run through the extractor and returned to the hives for cleaning?"

"It is best to take these off before the end of the month; and if you have never tried the plan of removing them by cold instead of with smoke I would advise you to try it."

"How is that?"

"When smoke is used, part of the bees are driven down below, after which the combs have to be handled separately to shake and brush off the remaining bees. To do away with this handling of each separate comb, some prefer the bee-escape, as in taking off supers of comb honey. While this is preferable to the smoke, it requires much lifting of hives and handling of the escape-boards.

When removing supers by the cold plan, unless the supers are full or partially so of section honey, wait until there is a cool or cold spell, when the mercury sinks nearly to the freezing-point, when the bees will have congregated in the brood-chamber. At the end of this cold spell there is generally a morning when there is a frost, when, by rising early, all of the supers may be taken off free from bees, requiring only one lifting of the super, with not a single comb to handle separately. I have practiced this plan for years, but I do not remember to have told any one about it before, neither do I remember having read about it for several years. In this way the whole apiary can be gone over, and all supers taken off in an hour or so, and these supers collected and wheeled into the store-house, usually before the bees begin to fly. Then by delaying until cool weather comes, one may avoid the possible development of eggs from the wax-moth among the combs after they are deprived of the bees."

"I have some weak colonies, part of which I fear do not have stores enough for winter. How about these?"

"Colonies that have not succeeded in securing a sufficient surplus, or those that are queenless or too weak in bees to go well through the winter, should be united without delay, either with stronger colonies or with one another. In this way it is possible to have good colonies in the spring instead of hives of empty combs and dead bees."

"But how is this uniting best done?"

"The old way was to move the colonies toward each other a little each day so that the bees would mark anew at each flight, thus saving a loss by their going back to the old location when finally brought together and united. But few use that plan now. After a cool, cloudy, windy, or rainy spell, bees generally mark their location

more or less, especially in the fall or early spring. At such a time a newspaper should be spread on top of the hive containing the colony where one wishes the united colony to stand, and one of the other weak colonies should be placed on top of it, then another newspaper on top of this, and the third colony on top of this paper, and so on, according to the number to be united. When it grows warmer the bees will eat or gnaw holes through the papers, and the whole will become one colony, flying out through the entrance of the lower hive, marking this new location as does a new swarm, owing to the mixup of bees before their flight. In a week or two, select combs containing sufficient stores for winter, and remove all other combs. The colony should be confined to one hive for winter."

"This is a great improvement over the old plan; but I prefer to go over each hive to be united some warm day, selecting the best queen to keep, using or killing the others, and leaving with the bees only the three or four combs containing the most honey, spreading these apart far enough so that the bees will cluster between them during a cold spell. Then when a cold morning comes, all there is to do is to insert the fingers down between the ends of these frames with the bees bunched between them; and by clutching them with the fingers and thumb they can be carried as a handful and inserted in the selected hive, putting the two, three, or four weaklings in as planned. In this way the bees are all mixed up, when all desire to fight is gone; and, through the mixing, the new location is marked, so that no loss occurs by returning to the old stands.

"If, after uniting all that are not strong enough to winter alone, some are lacking in stores, feeding may be done. The best way to feed is to secure heavy combs from colonies which have more honey than they need, exchanging these for those having little in them. But it is not always safe to depend on this way. The wise apiarist will look out for heavy combs during the surplus season, and, instead of extracting every thing which has honey, he will put enough of these heavy combs in supers, tiered up on colonies strong enough to keep them until they are needed for use. If, after all the colonies have enough for winter, there remains a surplus of these heavy combs, they can be stored away for use the next spring, by any colonies which may not have enough to carry them until the flowers yield."

Cat Eats Bees.

I have seen mention several times of chickens picking bees from the front of hives. Did you ever hear of a cat eating them? We have a cat that will sit in front of the hive or on top and pick out the bees heavy with pollen.

Monaca, Pa.

CHAS. P. BLAIR.

General Correspondence

EUROPEAN FOUL BROOD STILL IN DR. MILLER'S YARD.

A Summary of the Results of the Treatment.

BY DR. C. C. MILLER.

April 20, 1911, European foul brood was found in one of my colonies. At the same time it was found that the colony was queenless and had queen-cells. It reared a queen which, in spite of its being so early, was fairly good, and there was no more foul brood in that colony. The term of queenlessness had served as a cure.

May 5 a second case was found, and another on each of the following dates: May 9, 10, 11, 16, 18, 19, there being two found May 18. Then a case was found June 3 and June 7. Then cases were found as follows:

June 15, 7 cases; June 19, 6; June 24, 3; June 26, 4; June 27, 7; June 28, 1; July 5, 2.

I give these dates thus particularly, as there seems to be some breaking of rule, the rule being said to be that the disease appears early in the season, and then disappears more or less as the season advances. It will be observed that only 11 cases were found before June 15. On and after that date 30 cases were found. It might be said, however, that the season didn't "advance," for it was a season of terrific drouth and dearth. Not till August did the pastures turn green again.

In my favor was the fact that the colonies were strong, and remained strong in spite of the dearth. For it will be remembered that an important part of the treatment of European foul brood is to make the colonies strong.

As to the severity of the disease—in a few cases only a single bad cell was found; in some, 2 or 3 bad cells; in some, 5 or 6; and none that could be called very bad. In order to know something definite I went to the colony that I believed was the worst, selected the worst frame, and on that the worst 4 inches square. I think it was July 7. The queen was 4 years old. In the space marked off were 23 rows with 19 cells in a row, making 437 cells. Of these 437 cells, 76 were bad, or 17.4 per cent. Considering that less than one cell in five was bad in this worst spot in the hive, I suppose it would be safe to say that not one cell in ten was bad in the whole hive.

Now comes something that was a surprise to me. It is generally understood that in European foul brood the affected brood usually dies quite young; and if I had been asked what proportion of the diseased cells were sealed I might have said perhaps one in fifty. Indeed, I might have said so in the present case if I had not counted and *carefully scrutinized* the sealed cells in counting. As a matter of fact, of the 76 bad cells 14 were sealed or partly sealed. That is, 17.4 per cent, or nearly one in five. Without careful scrutiny I would not have suspected

any thing wrong with these, for most of them were perfectly sealed, and without picking them open nothing could be seen wrong with them, unless it be that the sealing was a trifle darker than that of the sound brood.

Of the eight cases found in May, five suffered a relapse after being treated, although there is no certainty that they were not freshly affected from some surrounding diseased colony. Indeed, it looks a little as if most of the cases were from the latter source, for it hardly seems likely that, if the disease was a home product, it would have appeared in most cases only after the middle of June. Yet I have an uncomfortable feeling that I would still have had trouble if no neighboring bees had been within a thousand miles.

In the two previous years it was rather common for a colony to clean up itself where the disease was mild. But it seemed no use to wait for any thing of the kind this year, as it occurred in only one case. Was this on account of the dearth? So in the first week in July I made a business of treating every case, no matter if only a single bad cell was found. Except in the one worst case, the queens seemed active and vigorous, so I killed only that one queen. In the other cases I caged the queen, and left her caged seven to twelve days, generally ten days. Ten days later all were found clean; but for how long, I am not prepared to say.

Please note that I am talking about European foul brood, not American, and that nearly all cases were very mild. In severe cases I would have given a cell or a very young virgin in place of the old queen.

Marengo, Ill.

WHOLESALE REQUEENING.

Finding Queens in Populous Black Colonies During a Time of Robbing.

BY J. L. BYER.

While an article on finding queens and requeening colonies from which the queens have been taken may be a bit unseasonable at this time of the year, yet in view of the fact that I have just recently had an interesting experience in this line of work I feel that perhaps some who may have similar work to do in the near future may be benefited by knowing just how the work was done, and may thus be in a position to form their own deductions and avoid the mistakes that we made.

Last spring we bought an apiary of 220 colonies about 200 miles east of our home; and with some increase, made by natural swarming, the yard now consists of 280 colonies. The bees were all black; and as European or black brood is approaching the locality from at least two directions we came to the conclusion that it would be best to requeen the whole apiary with Italian blood.

Accordingly 300 queens were ordered to be sent at the rate of 40 per day, and on the 21st of August I left my home with the intention of requeening, taking off the buckwheat honey, and doing all other work necessary to put the colonies in shape for winter, thinking that no more trips would be necessary this fall, as we have a good man engaged to put the bees in the cellar when the time comes.

I found that I should have come to the apiary at least a week sooner, for by that time most of the buckwheat was over, and the bees were not getting enough honey to prevent them from trying to rob if the hives were opened to any extent. When I viewed the 280 colonies, all strong with bees, I was impressed with the magnitude of the task of having to go through the whole outfit to find the queens. The hives are 14 by 20, and two inches deeper than the L. frame; but instead of 8 frames lengthwise in the hives, there are 12 frames crosswise in each hive. The frames had been moved but little for years; and as the hives were jammed with honey, any one who has had much experience with bees will know what I was up against. Of course the main problem was how to find the queens; and on this point I had fortified myself with the best advice possible from some of the best-known bee-men.

Among the methods advised were the following:

"Place entrance-guards over the fronts of the hives, shake the bees in front, and thus screen out the queens." "Use a device similar to the one described by Mr. Greiner, which is known as the Hanneman device for hunting queens." "Put a comb or two in an empty hive, and on top of this place a queen-excluder with the hive to be treated above that. Shake and smoke the bees down and find the queen on the excluder." "Place a super just above the brood-nest, first having nailed a bottom on the super, then drum the bees up into the super, and, when all are up, dump them in a hive-body over the brood-nest, the two having a queen-excluder between them; then chase the bees down and find your queen on the zinc."

As soon as I started operations it was quite apparent that, with the exception of the latter method, all of the foregoing advice would be impracticable, as it would be necessary to do all of the work under a tent, owing to the fierce robbing tendency of the bees whenever a hive was opened. While I had great faith in the plan of drumming, I was much disappointed to find that it would not work in my hands; and after trying it with three colonies, and getting none of the queens, I felt blue over the prospect of finding those black queens that could get such a move on whenever the combs were handled. As intimated already, all work had to be done under a tent; and as this necessitated my being on my knees all the time, some plan had to be worked out that would not expose honey to the robbers, and at the same time it had to be one that would not require too

much paraphernalia owing to the cramped space at my disposal under the tent.

After considerable thinking, the following plan was decided upon; and it worked so well that in future operations of the kind I shall probably follow the same method. In a shallow extracting-super two combs were nailed fast in the center; over this was placed an excluder; and on top of this, again, a full-depth super (same size as the hive-bodies) was fastened. The tent was placed over the particular hive to be operated on, and the super or supers, thus prepared, were placed to the left in front of the hive. Then I crawled under the tent with the smoker and proceeded to business. After a puff of smoke had been blown in the entrance, a block was placed over it to prevent the bees from stampeding out of the hive in front, for kneeling there I did not care to have *too many* bees going up my trousers; and then, again, the queen was apt to run out as well as the rest of the bees. After opening the hive, the front comb was lifted out; and after a hasty look over it, it was placed in the prepared super in front of the hive. This process was continued until all the combs were out of the hive, unless, of course, the queen was found on the combs, which was not very frequent, I am sorry to say. As a rule, as soon as the combs were out I would, on looking among the host of running bees on the bottom and sides of the hive, find the queen in a few seconds; and by actual count, out of every ten colonies I found six queens on the bottom-boards, three on the combs, and one on the zinc between the two supers after shaking the bees off the combs before returning them to the hives, which was, of course, necessary only when the queen was not found on the combs nor in the hive. The fact that the frames were bad to handle no doubt explains why so many of the queens ran off the combs.

Naturally the question will be asked as to how many queens would be missed; and just here I might say that no one was more surprised than I at the good luck experienced. In going through the first 75 colonies, 73 queens were found, and next morning I found a dead queen in front of one of the two missed, so that, in reality, only one queen was missed out of the lot. Then, again, no doubt many will think the process followed was a laborious one, and very slow at that. By actual timing, five queens an hour could be found—indeed, *were* found at that rate whenever we went at the work.

One morning the weather was dull and cloudy, with not a bee flying; and as the robbers were bad, even when working under a tent during sunshine, I went at finding queens under circumstances which only those who have been similarly engaged in can understand. From 7 in the morning until a little after 10, sixteen strong colonies were examined, and *every* queen found. It is needless to remind one that, with the tent to carry around, and with all the inconvenience of working under it, our movements were much hindered; and there can

be no question but that, in a time with no robbing and plenty of honey coming in, much better time could be made.

The apiary in question is in a small village, with a blacksmith shop and other buildings but a few rods away from the yard; and when a number of colonies were dequeenened, that factor, together with the tendency of the bees to rob all the time, caused them to get very cross, and I was afraid of trouble from stinging. This condition caused me to abandon the idea of requeening the whole apiary at this time; but certainly the difficulty of finding the queens had nothing to do with changing my plans. While working under the tent it was a revelation to me to learn that, although the bees outside were very cross, yet inside one could work with impunity without a veil or hat on, and get scarcely any stings. The cross bees from the hive seemed to cluster in the corner of the tent and stay there until shaken down when moving to another hive. But when I would emerge from cover, certainly it was a case of "lower the curtain" or get lots of plugging.

One thing that puzzled me very much was why I failed in drumming the bees into a box over the hive. I know some good beekeepers who have followed the plan with success, and it must have been bungling on my part in some way. The first time I tried, I had an idea that too much smoke was used at the entrance, and some of it went into the super above and made it unpleasant for the bees to stay above. The next time no smoke was used, and still I could not get the bees to stay there in a cluster. Then, again, it took too much time to get them even started to go above in any considerable quantity; and when a queen could be found every 12 minutes by the other plan, a method that took at least twice as long was not to be considered.

In thus describing in a rambling way the methods employed in hunting out a lot of black queens under the most unfavorable circumstances, I am fully aware that there must be some details that can be improved upon, and, as intimated, the foregoing has been given, not with any idea of its being a perfect method; and no one will appreciate more than the writer some suggestions that may be given that will point out how we can get along better *next* time, as we have a lot of this work to do in other yards another year.

Just a word as to introducing the queens. When we found the condition prevailing in the yard, a heavy loss in queens was anticipated, especially when, on the following morning after dequeening colonies, as many as a cupful of bees was found in front of each colony that had been operated on. My original intention was to introduce on the plan of pressing a wire-cloth cage over brood with the queen underneath; but this was abandoned when we found robbing so bad. The plan adopted was as follows:

In the honey-house in front of the window, all bees were removed and the queen

was placed in a cage *alone*. Cardboard was left over the plug of candy; but the cardboard was perforated with a pin until it would hardly hold together. The second evening after dequeening, the cage thus prepared was placed between two combs, the combs being spread apart for that purpose. The colony was left strictly *alone*; at least long enough for the queen to be released, before the hive was disturbed. All but 15 were introduced by this plan, and, to the best of my knowledge, not a queen was lost. The 15 exceptions were run in the tops of the hives in the evening, after the colonies were heavily smoked with tobacco. One was lost by this method; but I think the colony was treated too early in the evening, and not enough tobacco used. These surmises are based on the fact that the colony that killed the queen was the first one that I started on in the evening when the work was done. I was greatly pleased at my success in introducing at a time when ordinarily one would expect heavy losses; and one reason that I assign for such good results is that the hives were not molested until after the queens were released and had begun to lay, as I believe violations of this principle cause the loss of many queens during the process of introduction.

Mount Joy, Ont., Can.

SWARM PREVENTION VS. SWARM CONTROL.

BY J. E. HAND.

Mr. J. E. Hand.—I have read with much interest what you and others have written in GLEANINGS about your system of controlling swarms with your double switch-board. I think that all the principles involved in the methods of Alexander and Doolittle can be carried out, and others besides, with much less labor, and in a more pleasant way, by your method, if correctly understood and properly applied. I have just the number of colonies I desire. I do not want to increase nor decrease. All are in fine fix, with choice queens. There are three frames of brood and eggs in each to-day. Now, can I put two of those colonies on your switch-board, and with safety to queen and bees, switch the working bees of one into the other, and, after eight or ten days, switch them back again into No. 1, changing supers over, of course, to No. 1, thus uniting the working force of two colonies in one set of supers?

Of course I mean that the first switch is to be made after the colonies have become strong, and are near the swarming-point; also that all queen-cells started in No. 2 should be cut out before bees from No. 1 are switched into it. I should also, perhaps, remove all combs containing only honey from No. 2, and replace with frames of foundation only, so as to satisfy the disposition for comb-building, giving super space as conditions require.

Selma, Ala.

REV. F. G. RAILEY.

From the nature of the correspondence I am receiving with reference to the new method of controlling bees it is evident that some have a wrong conception concerning the correct system to be carried out in connection with my bottom-board equipment for the successful control of swarming.

While the method mapped out by our Southern friend could doubtless be operated with safety to bees and queens, the result would undoubtedly be a disappointment to the operator, for the reason that the principle is applied in open violation of the laws that

govern the successful control of swarming. The method above outlined is virtually a system of swarm prevention—a thing that is much talked about though seldom realized—a will-o'-the-wisp that is ever eluding the grasp of would-be promoters of systems and methods of swarm control.

While the terms "swarm prevention" and "swarm control" would seem at first to be synonymous, a closer study reveals the fact that they have a separate and distinct meaning. Swarm prevention is supposed to prohibit swarming entirely, while swarm control does not necessarily prohibit swarming but may forestall the event by substituting the artificial for the natural swarm; and thus by working in harmony with the habits of bees we pay tribute to the demands of nature, the swarming instinct is satisfied, swarming is held under control, and the bees are placed in condition to do the best work that they are capable of performing under the most favorable circumstances.

As a rule, where colonies are strong at the beginning of the honey-flow it is advisable to begin the season with a single colony on one side of a double switch-board, and, at the approach of swarming, shift the flying force over into a new hive that is placed beside the first one for this purpose, and in eight or ten days the swarm is reinforced by a subsequent shift of young bees by means of the switch lever. Of course, the queen and a frame of brood goes with the swarm at the time of shifting. If increase is desired, a young laying queen or a virgin just hatched is given to the depleted colony, which will build up strong for wintering. If no increase is desired, no queen is given; and at the time of the reinforcing shift, insert a specially constructed bee-escape in the entrance between the switch lever and the end of the main entrance, into which the returning bees will go, since no bee can enter the depleted hive.

When the brood has nearly all hatched, and the bees added to the swarm automatically, the hive and combs may be used as desired. Since all colonies are not strong at the beginning of the harvest it is very desirable to have a system whereby the working force of two colonies may be combined in one set of supers, as suggested by our correspondent, without violating the principles that govern the successful control of swarming, and with the minimum of labor. To accomplish this, and to avoid the intermingling of strange bees at swarming time, which would have a tendency to defeat the plans of swarm control, one colony is placed on top of the other on one side of a double switch-board, the two separated by a queen-excluder; this should be done a week or two prior to the time of shifting.

These double deckers use one common entrance with apparently one strong colony having two brood-chambers and two queens. At the beginning of the honey-flow the flying bees from both hives are shifted over into a new hive containing full sheets of foundation in brood-frames. In the center is

placed a frame of brood and bees, including the queen from the top hive, giving the swarm a superfoundation or extracting-combs above a queen-excluder and reinforcing the swarm thus made by subsequent shifts of young bees from the parent hive as previously described. If working for extracted honey, the top story of the parent colony containing brood and honey, but no queen, may be placed on top of the super on the hive containing the swarm; and as fast as the brood hatches, the combs will be filled with honey. Whether working for comb or extracted honey this method will give excellent results in honey production with no swarming and with the minimum of labor.

Doubling the working force of an already strong colony at swarming time, without the application of principles that would satisfy the swarming impulse, would defeat the plans of swarm control; furthermore, the shifting of the working force of a strong colony over into a hive containing a colony of bees and a hive full of brood at swarming time would have a strong tendency to accelerate swarming.

Don't think it is profitable or even desirable to attempt to prohibit swarming entirely. Don't forget that the surest method of swarm control is to substitute the artificial for the natural swarm. Don't forget that the intermingling of strange bees at swarming time will defeat the plans of swarm control. Don't make artificial swarms until you are sure of the honey-flow. Don't forget that the time to shift bees and form increase is during the honey-flow. Don't forget that the Hand system is virtually a system of swarm prevention by substituting the artificial for the natural swarm, and not a system of swarm prevention.

Birmingham, O.

Bees Fly Through Netting.

In a Straw, page 516, Sept. 1, Dr. Miller translates the following from the *Schweizerische Bienenzeitung*—page 226: "To protect passers-by from an apiary within 25 feet of the street, a fence of poultry-netting 40 inches high was erected. The netting had a two-inch mesh, but the bees all flew over it, not one going through, although one colony was only 12 inches from the fence." Now, they act differently for me. I have some bees at Hot Springs, Ark.; and when I left there, April 17, the bees from one hive were passing back and forth through the meshes of a thirty-inch fence of netting, although it was 18 inches from the hive, and not in front of it, but at the side. My brother from Hot Springs reports that the bees have done this throughout the summer. Perhaps that colony is a freak.

Vandalia, Ill.

L. H. HOOVER.

Record on Scale-hive for August.

Aug. 2, 65 lbs., one super on: 6, 7¼; 8, 8¾, super No. 2 on: 9, 9¼; 11, 100%; 13, 108; 16, 119¼; 18, 123¼; 20, 126¾; 22, 131; 23, 133; 24, 134; 24, 143, super No. 3; 27, 143; Sept. 3, 147; 4, 148½. Dry-weather vine yielded from Aug. 2 to 24; color white; wild cucumber and heartsease came the first part of September. One week, rains and cold weather stopped gain. I have a larger yield in September most years if dry and warm.

Evansville, Ind., Sept. 5.

W. W. VICKERY.

MIGRATORY BEE-KEEPING IN CALIFORNIA.

Moving to the Sages.

BY FRANK F. FRANCE.

In order to develop one's education in the methods of bee-keeping it is necessary to become fully acquainted with the ways of manipulation in different sections of the country. Having a good practical and working education of the northern ways of bee-keeping I decided to plan a season's work in Southern California, in the region of Ventura, for some of the most extensive bee-keepers on the western coast are found there. About the middle of January, 1911, I started from the cold and icy North, where the temperature at that time was about thirty below, and on my journey across the continent, and over the Sierra Nevada Mountains, the snow was so deep that it blocked the through mail trains at different sections. After leaving these mountains I noticed a gradual change in temperature, passing through the Green Mountains and into the green vegetation of California. Reaching the garden spot of all California, the southern valley and coast section, I did not wonder that the bee-keeper had an ideal temperature and location for his apiaries.

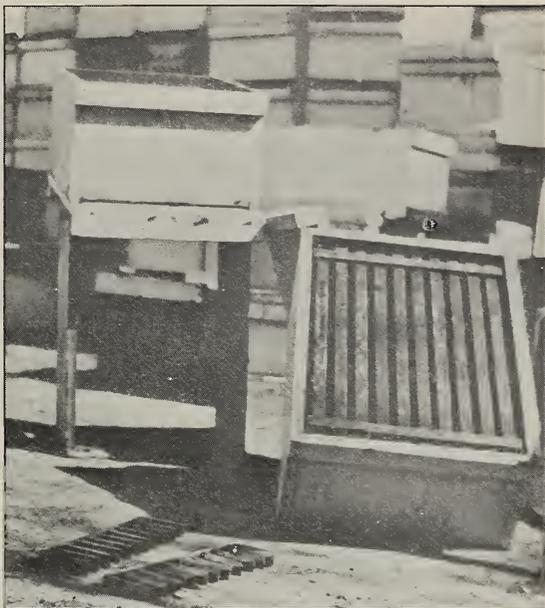


Fig. 1.—Method of clamping loose hanging frames for moving.

It was in January, about the 22d, that I began my work in preparing bees, hives, and fixtures for moving apiaries from the coast to the sage belt in the mountains. In making this preparation, all of the little details about the hives and moving appliances must not be overlooked. The bottoms of all

hives are stapled or nailed on solid, and the frames, if of the California style, are clamped so that there is no play whatever. The manner of clamping these frames is shown in Fig. 1. This clamp is made of frame material, the top of which is the same thickness as that of the bottom-bar, of the common Langstroth frame, and the spurs about the same thickness as the side bar, width $\frac{7}{8}$ inch. All hives not having this extra moving-clamp space above the frames are clamped in the same way, only the clamp has a tin top-bar. The frames are held from moving in this way, and there is no fear of breaking combs from jamming together or of killing any bees. All clamps should be removed immediately after the bees are moved, or they will be glued in so tight that it would be impossible to remove them without breaking.

Colonies moved single story, and not too strong, have an entrance screen only. This

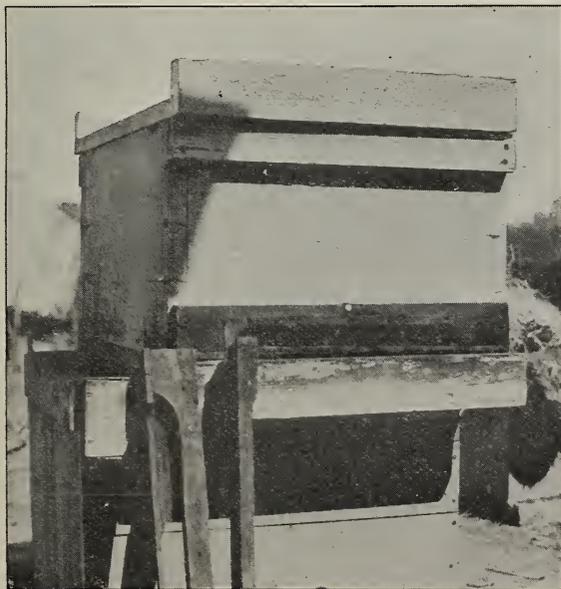


Fig. 2.—A substantial screen for closing entrances of colonies to be moved.

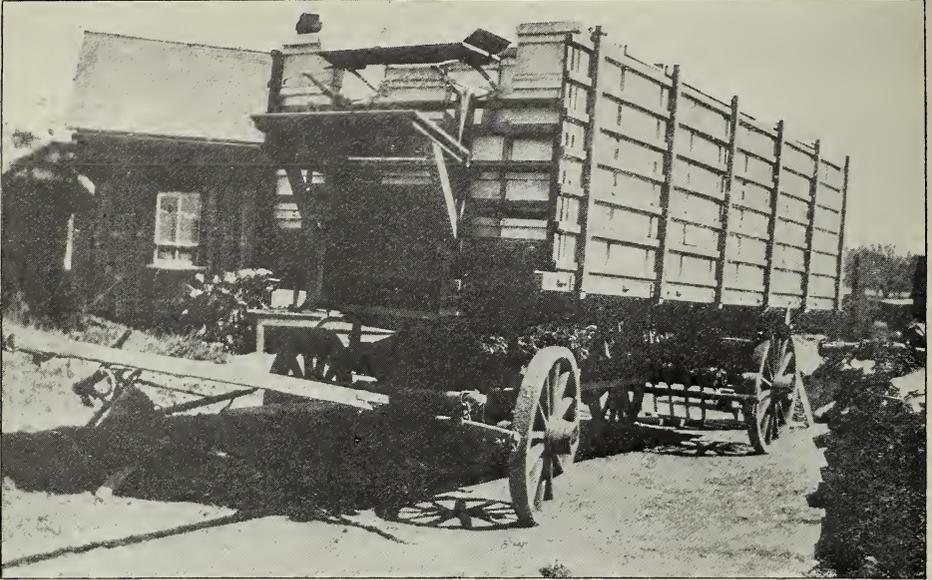


Fig. 3.—Rack made in California especially for hauling bees.

screen used is shown in Fig. 2, and can be used one season after another. Many bee-keepers use just plain wire cloth tacked over the entrance; but this plan of a screen on a frame means less labor. This screen frame is fastened by one nail in the center of the top and one at each end. This holds it bee-tight, and gives proper ventilation. For strong colonies the entrance is nailed tight with a cleat, and the whole top screened.

This top screen is also made on a frame of inch stuff, and $1\frac{1}{2}$ inches deep, with a cleat $\frac{5}{8}$ inch at each end to hold the cover up from the screen. The cover is then nailed on by two nails on either side.

Now the hives are ready for loading on the rack. The rack used is made especially for hauling bees, and as shown in Fig. 3.

Many bee-keepers also use a plain hay-rack with good easy springs, while some use

a plain flat wagon-bed with springs. The manner of loading and binding hives on this rack and small wagons will be seen by the small wagon used for out-yards, as shown in Fig. 4. This system holds each hive in its proper place, with no slipping or jumping around. About 150 colonies, single story, on this rack make a load; but if only supers, some 300 are loaded.]

All moving is generally done



Fig. 4.—A spring wagon does very well for small loads.

at night to save the worry of the bees from heat and light. Many bee-keepers in Imperial Valley use ice in moving in that climate. All this first moving is done about the middle of March. If the bees are moved by car they are loaded the same way, only more space is allowed between the rows for ventilation, though preserving compact form, so as to have no breakdowns in switching. A common well-made cattle-car is best suited for this purpose. For hauling small loads of colonies from one yard to another, a light spring wagon, as shown in Fig. 4, is used. With proper care in loading and binding, 26 one-story colonies make a nice load.

The main honey-flow of this mountainous section runs from the first part of April until about the first of July, and comes mostly from the sages. About the middle of March the black sage (button sage) makes its first appearance, and blossoms more and more as the season advances. Like most honey-plants, its first flowers do not yield any amount of nectar, hence no flow for a week or two. The little buttons are made up of flower-buds, and the little white-lipped blossoms commence to come out on the outer edge of the bunch of buds. The plant is then in continual bloom until each button is flowered out. After the season is over, the buttons and leaves turn dark, from which I think it derives its name.

About the first of May, the next and most important honey-plant to come into bloom is the purple sage. This plant is almost like the black sage, only the flowering buttons are larger and the flowers of a purple hue. While there are many other minor honey-plants of some importance, such as the wild alfalfa, sunflower, white sage, and wild buckwheat, none can equal the purple sage, which produces the celebrated water-white honey. This clear honey, when taken out at its proper age, has one quality above all other honeys—that of remaining liquid in any climate. Figs. 5, 6, 7, are good clear pictures of the three important honey-plants of this section. No. 5 is black sage; No. 6, purple sage, and No. 7, wild buckwheat.

The first of July, to many bee-men of this section, means move again from this mountainous country back to the coast or bean-fields. This great Santa Clara Valley produces more lima beans than any other section in the world; hence if the season turns



Fig. 5.—Black sage.

good it pays to move into good locations near these fields. (This point may also be located on the map in Ventura County, between the cities Ventura and Saugus.) The bean-bloom begins about the middle of July, and continues for some weeks, giving a white nectar.

In comparing the crops, etc., of California with the East, it is interesting to note that Westerners estimate in tons and carloads, and sell to the commission man generally. The flow and quality are very good when they have a good year; but it comes only about once in four or five years, so that the good sections of the East will balance up by having something of a showing every year. Good locations are hard to get, and the sages are being cut and burned, making room for more cultivation, so that in the near future California is destined to lose its high rank among the first of the honey States.

The commission-man problem should also

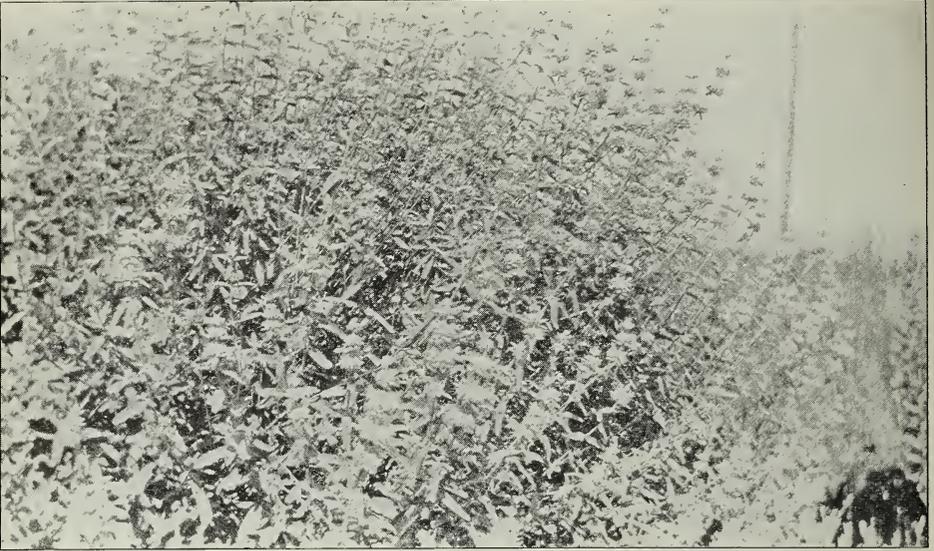


Fig. 6.—Purple sage.

be done away with by the bee-keepers coming together as one and in an organization, either through its own association or through the National Bee-keepers' Association, which in time I hope to see a controlling body in its chosen field.

Platteville, Wis.

[The bee-keepers of Holland think nothing of moving an apiary to different pasturage several times a season; and in many localities in this country migratory bee-

keeping is fast becoming an expedient, if not a real necessity. If a permanent equipment is provided, instead of hastily gotten-together make-shifts, moving bees should not prove the vexatious and burdensome task that it so often does when a temporary and flimsy moving outfit is used. Most of the accidents result from breakage of parts not designed for emergencies. The work is hazardous enough at best, and for this reason it pays to spend time and money for an equipment designed for this purpose.—ED.]



Fig. 7.—Wild buckwheat.

HOME-MADE FOOT-POWER SAWS FOR MAKING BEE-KEEPERS' SUPPLIES.

BY PERCY ORTON.

The four engravings show my two foot-power sawing-machines, which, as will be seen, are home-made; nevertheless, I have found them very satisfactory. The frames I made myself, while the mandrels and the ball-bearings (grindstone hangers) on the drive-wheels are from Sears, Roebuck & Co. The cost of the material in each saw was about \$6.00, not counting my own work.

Figs. 1 and 2 show the cut-off saw, and 3 and 4 the rip-saw. In Fig. 3 some of the products from the saw are also shown; that is, the hive-bodies in the flat, brood-frames, etc. For making the end-bars of frames I use a 1½-inch pine plank, 9½ inches long, wobble-sawed on the ends ⅜x⅝, and then this plank rip-sawed into pieces ⅜ inch thick, thus making the end-bars of the frames like those nailed up. The bottom-bars of the frames are ⅜x⅝, just fitting in the notch in the lower end of the end-bars. The top-bars are ⅝ inch square and 19½ inches long.

To fasten foundation in my frames, one-fourth of the top-bar is cut out of the lower side, the strip cut out being ⅞ inch square, less the width of the saw-cut. The foundation is laid in this cut, and the strip nailed in place with three small wire nails, thus holding the sheet very firmly.

Northampton, N. Y.

THE ORIGIN OF PROPOLIS.

Not a By-product of Pollen; Dr. Kuestenmacher's Theory Erroneous, and Why.

BY ARTHUR C. MILLER.

Dr. M. Kuestenmacher's theory of the origin of propolis is certainly unique, and would be "interesting if true," but it happens to be erroneous—page 568.

Pollen does have some resinous gum, but not in any such quantity as would be necessary to produce the amounts of propolis found about the hives. Furthermore, it is distributed largely, if not entirely, over the husks of the pollen grains, and, being virtually insoluble in the stomach juices, it is not freed from the husks, but remains on them and passes from the system with them. Balsam in various forms, when taken into the human stomach, emulsifies and passes on, and is not "floating on top" of stomach content. This "floating" idea is very much like the childish idea of food lying in layers in the stomach, and the childish play of "topping off" with griddle cakes to serve as a "cover" for the rest.

A few simple facts which any one may observe will serve to determine the origin of propolis. First, large quantities of propolis are distributed in the hive when no brood is being fed and no pollen being gathered. Second, where the poplars known as balm of Gilead (*Populus balsamifera*) abound, the bulk of the propolis is gathered from

them, and large quantities are gathered in the fall. As the tree blooms in early spring, and the pollen from it is consumed about as fast as gathered, it is difficult to see how it can be the source of the propolis. Third, bees can readily be seen gathering gum and packing it in their pollen-baskets, where it forms little glossy beads, varying in color according to its source.

Pollen is packed while the bee is flying; propolis is packed while she is standing. In the hive the bee has no trouble in getting rid of it, never being bedaubed with it. In its removal and distribution, mandibles and tongues of oth-

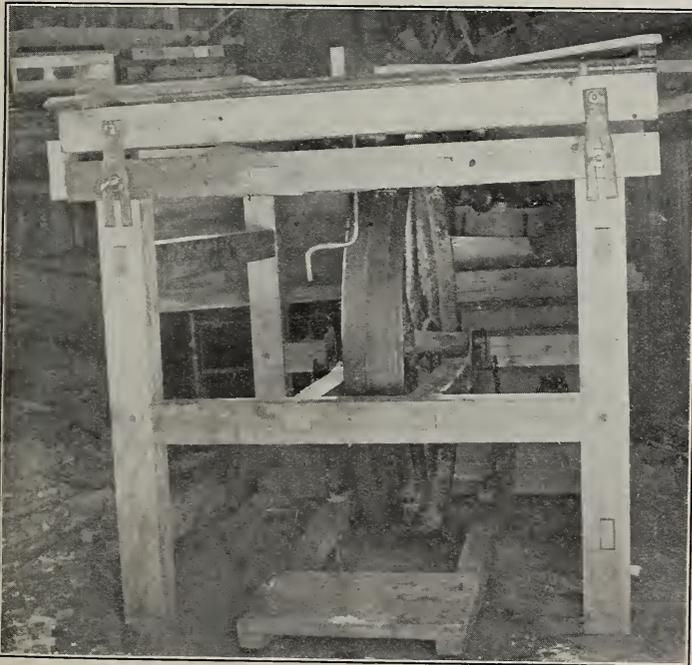


Fig. 1.—Cut-off saw-table for cutting bee-keepers' supplies; built by Percy Orton.

er bees take an active part. It is the tongue which forces the warm, almost fluid gum into cracks and crevices. Watch a bee busy in propolizing, and it is readily seen that the tongue is merely spreading propolis. It may have been from this that Dr. Kuestenmacher surmised that propolis came from the bee's stomach.

To those who wish to check propolizing, to keep covers from being stuck down, frames glued together, etc., the following simple remedy will be found efficacious: Whitewash all parts which it is desired to keep free. Our English cousins have for years used chalk rubbed along hive edges, etc., for the same purpose. After trying both of these for several seasons, the writer abandoned the practice so far as covers, floors, and some other parts were concerned. It was found

to be more satisfactory to have things reasonably sealed. When the accumulation of propolis becomes too great it is the work of but a moment to remove the excess.

Providence, R. I.

BIGELOW'S HEN-HOUSE STILL IN STAMFORD.

Arcadia: Sound Beach, Connecticut.

BY EDWARD F. BIGELOW.

For many years, until about two years ago last spring, I had an experimental house known as a biological laboratory, and a smaller building known as an apiarian laboratory, in a small back yard at the corner of Grove Street and Highland Avenue, Stamford, Ct.

In the larger of the two buildings I had a few hens, a few rabbits, cavies, and other pets. Every thing was kept perfectly clean, yet every autumn the neighbors complained about the offensive condition of that hen-house. Two or three repeatedly complained to the health department. Mr. Anderson, a zealous and efficient health officer, paid me a series of visits—one in response to each complaint. He carefully inspected the coops and the hutches. He sniffed at the ground, the sides of the building, and even turned his nose skyward. He was mystified. That there was a smell was plain, but it did not seem "henny." After each call he remarked that every thing appeared to be in good condition. But the neighbors passed by sometimes on the other side, and continued to complain, and to ask for an inves-

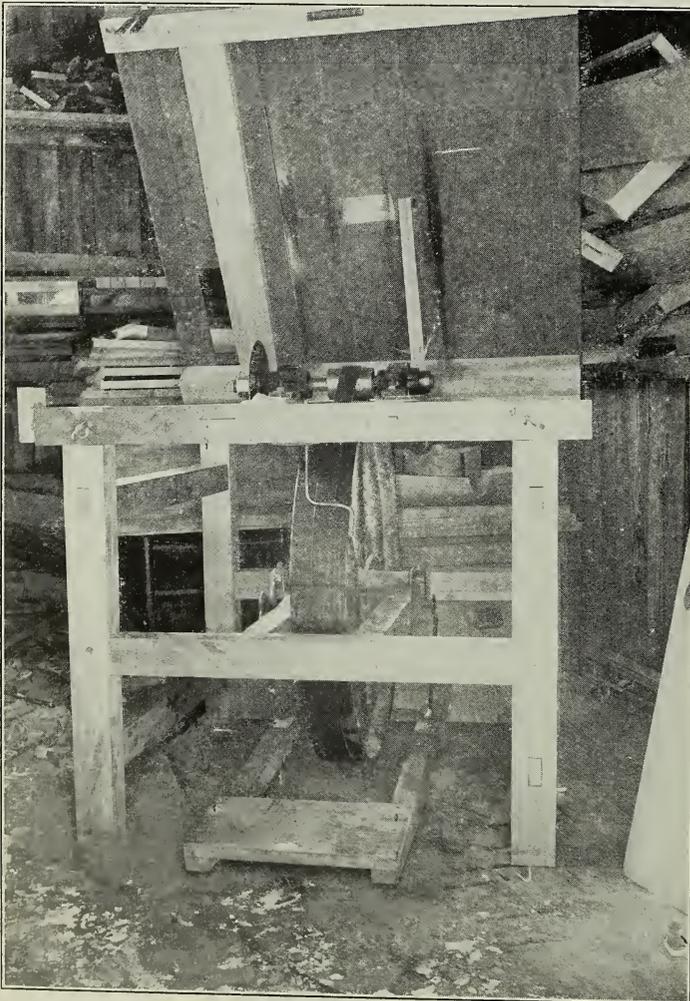


Fig. 2.—The cut-off saw with table raised.

tigation of that Bigelow hen-house.

Now, hen-house, apiary, house for my pets, all were moved two years ago to Sound Beach, several miles away, but, according to Highland Avenue, the smell of that hen-house lingers there still. It comes about in this way: Those same neighbors with the sensitive nostrils became interested in honey-bees, and my apiary left its trail on that street in the form of three enthusiastic converts to bee-keeping. One who in particular, with the members of his family, was

zealous in complaining, has not yet got rid of the smell; but now that he knows the cause, he appreciates the joke. There is a fact unknown, even by many bee-keepers, unless it is revealed by the proximity of the apiary to the house. In September and October the bees gather quantities of goldenrod nectar; and while this makes good honey, it has an odor that is pleasing to some but disagreeable to others, and it was especially so to some of the present bee-keepers of Highland Avenue before they became bee-keepers. The offensive odor was from the goldenrod and the bees, and not caused by the biddies nor by their owner. They were guiltless.

This reminds me of another marked example of the influence of a naturalist who is at the best regarded as a little queer, and is expected to do things differently from ordinary people. Nearly two years ago it was announced that the bee-house was to be moved to Sound Beach, and to be placed in the center of the village and near the postoffice. The entire neighborhood was alarmed. "We shall all be stung to death!" But the bees arrived; they prospered, and so did the people of Sound Beach. There were no stings except in the remarks made about the new natural-history establishment. The boys and girls learned to like the honey-bees, and so did other visitors. But some of the neigh-



Fig. 3.—Orton's home-made rip-saw.

bors did not. They remarked that the bees were puncturing their fruit, spoiling their blossoms, and, I suppose, were upsetting the general equilibrium of the home. Some of these complaints began kindly but firmly during the first year. They increased a little in the second. Wherever in all Sound Beach were seen honey-bees, bumble-bees, bee-flies, horse-flies, and I am not sure but flying ants and other members of the hymenoptera, they were laid to the charge of Bigelow's apiary. But here is just one little fact that has a bearing upon the situation, and that has been known to very few outside outside of Arcadia, and those few are not residents in the vicinity. The entire apiary was discontinued early last spring, and the building since then has been used for other purposes. There has not been a bee in Arcadia during this entire season. But the ghosts of Bigelow's bees plundered the flowers and pierced the fruits of Sound Beach during this entire season. *Dictum sapienti sat est.* "Overhaul your catechism till you find that passage, and, when found, turn the leaf down."

Sound Beach, Conn.

[There have been several reports regarding the disagreeable odor when bees are working on certain fall flowers. The aster seems to be the principal offender.—Ed.]

IN MEMORIAM OF E. C. PORTER.

The Maker of the Porter Bee-escape; Bee-keeper and Tile-maker.

BY A FRIEND.

[As there had been no picture taken of Mr. Porter except when he was a very young man, his friends did not send any. The following sketch of his life was prepared by a neighbor and friend.—ED.]

Edmond C. Porter was born June 10, 1857, and died August 6, 1911. He was the only child of Rufus and Mary E. Porter. He was a man of excellent character and sterling worth. He was honorable, reticent, studious, and industrious, taking the utmost pains to perfect any thing he undertook along any line of work. He possessed a vast fund of knowledge on various topics—very unusual in this day of rush and hustle. Nothing but the best satisfied him; and if

any question came up, he did not rest until he had answered it and was sure he was right. He was an ardent lover of nature, and it was his pride to cultivate choice varieties of fruit and plants.

His father, Rufus Porter, was a raiser of bees, and from his earliest childhood Edmond, too, loved and worked with them.

While Mr. Rufus Porter was the original inventor of the Porter bee-escape, the son improved upon it, and it was he who manufactured them and placed them on the market.

Just before his death he had been granted a patent on the improvement. He had many bees of his own, and made a specialty of extracted honey.

He was a fine financier, and, in addition to the bee industry, he had a large farm, and took charge of the tile-factory which had belonged to his father.

He was unmarried, and had always been at home with his mother, to whom he was devoted, especially since the father's death seven years ago. He has given her the most tender love and care. She is now well advanced in years, and feels his loss keenly.

He was loyal to his friends, just and generous to all, and in his death we have lost a really good man who will be greatly missed in the community in which he lived.

Ray, Ill.

AN INGENIOUS WAY OF PREVENTING ROBBING.

BY DR. C. C. MILLER.

There are times when there is very great danger that nuclei for fertilizing queens will be robbed out. Rudolf Eisner has devised a plan, *Bienen-Vater*, page 239, whereby he says the nucleus is safe from robbers without having its entrance contracted. A tube of wire cloth, *b*, is attached to the entrance, *a*. This tube is three or four inches long, and an inch or more in diameter. To this is attached another tube, *c*, 20 or 25 inches long, made of wood, pasteboard, etc. When the bees take their flight, they may try to get out through the wire cloth, but will soon find their way to the outer end of the tube, *d*, which rests on the top of a stake, the top of the stake serving as an alighting-board.

Well, what's to hinder the robbers from entering at the same place? Just this little trick: The end *d* is lower than

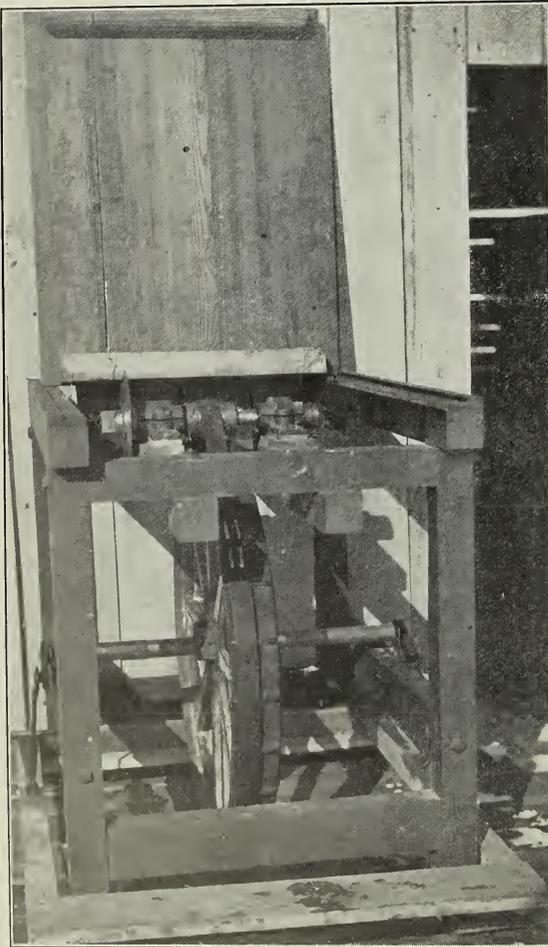
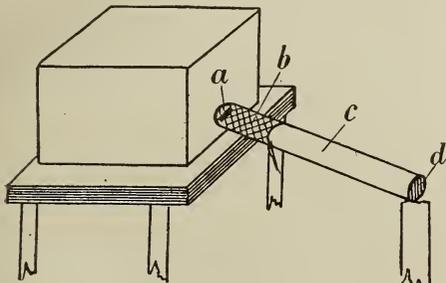


Fig. 4.—Rip-saw with table raised.

the end *a*. The bees of the nucleus have marked the end *d* as their place of entrance, and use it freely, while there is nothing to attract the robbers there, for the air rises in the tube, and all the odor passes out through the wire cloth, at which place the robbers vainly try to enter.

As an experiment, Mr. Eisner encouraged robbing last fall in a nucleus separately located. He daubed the front of the hive



with honey, and also placed there 1½ pounds of comb honey. In a short time it looked as if a swarm had settled there. Soon the honey was gone, but not the robbers. For nearly a week they kept up their attack upon the wire cloth, where the odor from within was perceived, while the little community quietly kept on its way without hindrance.

Although Mr. Eisner says nothing about it, it would seem possible that such an arrangement might work to stop robbing after it has begun. Have the tube ready to fasten upon the entrance of any hive, always with the outer end lower than the entrance, and then, when a case of robbing is found, apply the device and let the robbers fight away at the wire cloth. "But then," you ask, "would not the robbers that were already in the hive mark the outer entrance as they escape, as well as the bees of the hive?" Like enough. But it might work if put on the hive in the evening after flight has ceased for the day.

Marengo, Ill.

MAKING SURE OF PLENTY OF WINTER STORES IN THE DANZENBAKER HIVES.

BY E. D. TOWNSEND.

Mr. E. D. Townsend.—I want you to tell me how to manipulate my hives so that the bees will best prepare their winter nest. They are now in three-story Danzenbaker hives, each story the brood size (ten frames, 17 x 7½), and I run them for extracted honey. The upper story is now full and ripe; but it is so difficult to store empty combs until cool weather, on account of moth, that I should like to let all three stories remain on until Oct. 10, if I can do this and have bees properly fix the winter nest. I want them to winter in the lower story; but they will store nothing in the lower story as long as one or more stories remain above.

I have not tried carbon bisulphide with stored combs. Would you take off the upper story now, leaving two stories on, and put the bottom one—the one I wish to winter in—on top, and then later remove the bottom one? Please tell me just how you

would do it. From now on, bees here usually gather enough to winter on from peas, fall asters, goldenrod, etc.

Hollis, N. C.

C. C. GETTYS.

[Mr. Townsend replies:]

The Danzenbaker hive is not the only one that may have an empty brood-nest at the end of the season. Bees naturally go to the top of their hive to begin storing honey; and the queen, if unrestricted, will gradually move the brood-nest along near the lower edge of the honey, vacating the original brood-nest for the inviting place above. Now, if no more room is given, and the honey-flow continues, the bees will finally crowd the queen out of the top stories back into the lower story, or brood-nest, with honey. On the other hand, if more combs are given a colony than the bees can possibly use, the lower hive is likely to be entirely deserted, except a considerable amount of bee-bread, and to be in no shape for winter unless the upper stories are removed (after the brood hatches out) and the colony fed for winter.

This fall feeding we have abandoned, as it is too late in the season where a fall flow of honey is secured, as with you. Both the size and shape of the brood-nest cut some figure in the amount of honey left in the hive at the close of the season for winter stores. A deep hive is more likely to have more honey left for winter stores than a shallow one. Then there is a difference in the strain of bees about carrying and storing honey. Pure Italians store their honey nearer the brood-nest, while the blacks or hybrids store their honey freely at a considerable distance from their brood.

You want to winter your colonies in the lower story of your three-story Danzenbaker hive; but as the lower story has no honey, the colony will need at least 30 lbs. in your location, to winter and spring, and an upper story of honey should be left on for this purpose. A Danzenbaker body, when sealed full, will likely hold 40 lbs. of honey and bee-bread; so if the story were three-fourths full of honey it would be about right in this location. It will not take less in your location, and may take more. A little watching along this line will help you to determine for yourself the stores you will need. You say that the top story is now full of honey, and a fall flow in sight. It is quite likely that the second story will be filled during the fall flow, and the queen and her brood-nest in the lower story, as you want them. In this case all you will have to do the 10th of October will be to extract the top story, leaving the two lower stories and the honey they contain for the bees during winter.

This aster honey will not be quite as good as the early honey for winter stores; but with you, bees ought not to be confined to their hives more than sixty days during winter without a fly. If bees have an opportunity to fly each six weeks or two months during winter, the quality of winter stores need not be considered. The only requisite is to see that they have plenty.

The Danzenbaker or eight-frame L. hive is too small to breed up a normal colony for winter and still have room for the storing of their winter food, as 30 lbs. of honey will fill the Danzenbaker hive four-fifths full, which would leave scant room for the brood-nest.

Remus, Mich.

RIPENING HONEY OUTSIDE THE HIVE; VENTILATION OF HIVES.

A Detailed History of Some Extended Experiments.

BY I. HOPKINS.

Both of these questions are of very great importance in the economy of bee-keeping, and both are now controversial subjects, especially the first. Bee-keepers as a rule are apt to follow without considering whether the leader may be on the right track or not. There appears to be a tendency among the majority to accept as facts theories without scientific foundation, which have been put forward by popular writers and others. This is especially true where a statement is made which happens to be in accordance with preconceived ideas on the subject; yet it may be altogether misleading. When this is the case, much harm is done; for if generally accepted as correct, it may be the means of obscuring the real point at issue, and of delaying a scientific investigation for years. This, I consider, has been the case with the first subject at the head of these notes.

RIPENING HONEY ARTIFICIALLY.

We all remember what a commotion was created in the bee-world when the late E. W. Alexander gave, early in 1906, in GLEANINGS, his method of extracting uncapped honey. Yet not one of the opponents of his system ever put forward one definite reason for his opposition. I have watched very closely all that has been written against the system, for I have been particularly interested in all that could be said for and against it, as I first adopted it in 1883, and carry it out still at our government apiaries. Out of all the correspondence there has been nothing but vague statements that honey can be properly ripened only within the hive. The opponents of the system hold that honey ripened outside is inferior. I would ask what grounds they have for their assertion. Against their loose statements we have the experience of Mr. Alexander, who was one of the foremost men in the bee-keeping world.

I have also proved by practice, to my own satisfaction, the great advantages of the system, and that absolutely no difference can be detected between honey ripened outside and inside the hive. Nevertheless I should like to learn that chemical investigation of the matter is likely to be carried out. I am of the opinion that the chief factor in ripening honey, aside from the possibility of some chemical change in the sugars going

on, is the ridding it of its surplus moisture, which can proceed outside as well as inside the hive in suitable surroundings.

VENTILATION OF HIVES.

The fact that this question periodically crops out in the bee-journals indicates a lack of knowledge of its principles; yet it is most important that every bee-keeper should understand the matter. Though the question of the best method of ventilating a hive is capable of being demonstrated in the apiary, without recourse to a scientific person, it is not every bee-keeper who has the patience or time to devote to experiments which need great care and considerable time to carry them out properly. I don't remember any account in the journals of such experiments being conducted. Probably this is due to the fact of its appearing such a simple matter that it has not been considered necessary to experiment.

In my early days of bee-keeping, in the mid '70s, I used to be troubled every spring with moldy combs, which, considering the favorable surroundings, I could not account for until years afterward; but I was convinced it had some connection with the ventilation. In 1889, with the aid of a friend of mine (the Rev. J. R. Madan), I carried out an exhaustive series of experiments, extending over a good part of two months. The hives (a ten-frame Langstroth, of one and two stories) was prepared by boring holes in each part so as to take 12 thermometers, which were secured in such a manner as not to be influenced by the outside atmosphere; in fact, we took every precaution to exclude, as far as possible, all likely sources of error. In addition we had five thermometers outside the hive. We took readings every hour, and sometimes every half-hour, from early in the morning until late at night. We used a porous mat over the frames sometimes, and at other times hermetically sealed the hive above the frames to prevent all upward ventilation. We also experimented with a one and two story hive with colonies of a strength to suit. It was in January and February, our two warmest months; and the place where the experiments were conducted was Auckland, N. Z., in latitude 37 degrees south, the hives standing in the open, but sheltered.

Without going into details I may state that, during the whole of our experiments, the temperature of the center and lower parts of the hive (with the exception of one side near the entrance) was higher than the top portion. My note, made at the time, reads: "The most notable features are, 1, that the temperature at the top, just under the mat, was always lower than that three inches below; 2, that the lower thermometer (near the bottom-board on one side) was highest until the sun set; and, 3, that when the external temperature fell there was always a fall inside the hive." The difference in the temperature between the upper and middle parts ranged from three to six degrees, and on one occasion was eight degrees.

I doubt whether a more complete series of

hive-ventilating experiments was ever carried out; and whether the fact that a single porous mat was in use, or the hive was hermetically sealed above the frames, made any difference provided there was a liberal or large entrance. If this was much contracted, the inside temperature rose at once, and a force of bees immediately started fanning outside. The two thermometers, placed one on each side of the entrance, and projecting inside the hive, always showed a difference of several degrees. This fact, in conjunction with the results of each phase of our experiments, pointed unmistakably to the conclusion that the bees under all conditions carry out their own ventilation—that the exhausted air is driven out on one side of the entrance while the fresh air is being drawn in at the other.

May this not be accounted for by the probability that the bees give off a considerable amount of carbonic-acid gas, which, being heavier than the atmosphere, would descend to the lower part of the hive, and therefore necessitate its being driven out from the bottom? The fact that the bees try to close up every chink above shows that bottom ventilation is their system.

Dampness and moldy combs within the hives in our climate of Australasia in winter is due chiefly to insufficient bottom-ventilating space, and I always advocate a fairly large entrance during the winter.

Auckland, New Zealand.

BEE-KEEPING IN JAMAICA.

Some Misstatements Corrected.

BY SEPTIMUS NASH.

I read with interest the article in August 1st number, p. 463, written by Mr. W. C. Morris, and wish to make a few comments on what the writer has to say on the subject of bee-keeping in Jamaica. His first two sentences read: "The bee-keeping industry in Jamaica is only in its infancy. There is flora to support profitably a million and a half colonies, and there are only 112,000 colonies."

The area of Jamaica is 4200 square miles. Assuming that the odd 200 square miles are unprofitable for the bee industry, being swamp lands or under cultivation of canes, grass, etc., there are 4000 square miles left which are more or less suitable for bee-keeping. According to Mr. Morris, there are 112,000 colonies of bees here—probably a fair estimate—thus making about 28 colonies of bees per square mile. Does that sound like a country in which the bee-keeping industry is in its infancy? Mr. Morris states that 1,500,000 colonies could be kept here profitably—an average of 375 colonies per square mile, and he further adds that the average crop obtained is 50 lbs. per colony, but that with *intelligent* management it could be increased easily to 200 lbs. We bee-keepers would like to know whether there is another country on the face of the earth, of the area of Jamaica, that supports an average of more than 28 colonies of bees per square mile and makes 5,600,000 lbs. of honey, the result secured from the figures as given. What would you think of Mr. Morris' Jamaica supporting 375 colonies of bees per square mile, and producing a crop of 30,000,000 lbs. per annum?

Black River, Jamaica.

COMPARATIVE PROFIT OF EXTRACTED, SECTION, OR BULK COMB.

BY LOUIS SCHOLL.

Continued from page 617.

at 8 cents per pound, this must be deducted from the \$6.60, leaving \$5.00 for the 40 lbs. of comb honey in the can.

The average yield per colony of bulk comb honey is about 100 lbs.; and as extracted honey must be used to put up the comb honey with, both are generally produced in the same hive. The extracted-honey supers are placed on early in the season to catch the early honey before the season is well enough advanced for the best work in the comb-honey supers, and use is also made of them again at the end of the flow to catch the honey, which otherwise would result in a great deal of unfinished comb honey. Thus the comb honey is produced rapidly during the most favorable part of the season or the honey-flow, and during a time when the bees are secreting wax more rapidly, which lessens the delay in comb-building and consumption of honey otherwise necessary. Using the extracted supers in the early spring furnishes the bees extra room and keeps them contented longer, so that, when still more room is provided by giving the shallow supers with frames filled with full sheets of foundation when the flow begins, there is no desire to swarm, as is the case when supers with sections are given to a crowded hive.

Instead of using the regular deep hive or those of the Langstroth dimensions throughout for supers as well as for the brood-chamber below, the shallow supers, 5 $\frac{5}{8}$ inches deep, are used most extensively now, as these are the most suitable in size to use for the manipulations as outlined above for the production of bulk comb honey. It is possible to use a much lighter weight of foundation in the shallow frames, being both a saving, and making the presence of such less susceptible in the finished product than if heavier foundation were used. For extracted honey the shallow frames are also well adapted, as their comb surfaces are more easily uncapped before extracting, as the knife reaches across their width entirely, and one stroke uncaps the entire surface. Room can be given to the colonies more gradually as needed with the shallow supers, which is a great advantage over the deeper and larger hives for colonies that are not able to take care of so much room at one time. The writer is using these shallow supers throughout for the brood-chambers as well as for the supers, and their great advantages enable him to accomplish manipulations throughout the season that result in larger profits.

As there is a very large demand for bulk comb honey in Texas, greater than for the other two kinds together, its production has been most profitable for many years, and hence is the most extensively produced by far.

New Braunfels, Texas.

Heads of Grain from Different Fields

When to Ship Full Colonies; Fat versus Slender Queens; When does Supersedure Occur? Sending Queen-eggs by Mail for Grafting, etc.

1. What time of the year is best to ship full colonies of bees? how best to prepare for shipment?

2. Are drones reared from pure queens that mated with black or hybrid drones pure? If so, why are they darker in color than pure drones?

3. If it is necessary to have a good flow of honey coming in to rear good queens, why do the bees allow queens wait until after the flow to supersede their queens?

4. Which will give the most surplus honey where you have to build your combs—when all colonies are strong, take half of them and shake bees and queens into empty hives with starters or full sheets of foundation, taking their brood and combs to the remaining half, to be filled as fast as the brood hatches, or take the queens from the whole number and put them below excluders on foundation?

5. Can I use thin super foundation one inch wide in brood-frames, without trouble?

6. Are not queens with abdomens with plump fat bodies better than those having long slender slate-pencil-like bodies? I notice that all of my queens reared by up-to-date methods are shaped like the latter; and those reared naturally are shaped like the first named.

7. Why do queens reared from a purely mated queen vary in color?

8. Can fresh-laid eggs be kept away from the bees for a few days and then be given back if not allowed to get too warm or too cold?

Keyesville, Va., Aug. 18.

S. H. CRYMES.

1. There is no particular time of the year that is more advantageous than another, except that it is wise to avoid very cold and extremely warm weather. The spring of the year, or early summer, is a good time, because the hives are light in stores and the weather is favorable. During July and August the weather is liable to be quite warm. The fall months are very good, but hives then are often heavy with stores. This increases the express rates and the liability of comb-breakage.

2. According to the Dzierzon theory, the drones reared from pure queens mated with black or hybrid drones would be pure. We did not know before that such drones would be darker in color than drones from a queen mated with a pure drone. We doubt if it is true.

3. It is not true, according to our experience and observation, that the "bees always wait until after the flow to supersede their queens." As a general thing, bees will start supersedure cells at any time of the year when queens begin to show signs of failure, or after a period when the queen has been doing extremely heavy work. It transpires, therefore, according to our observation and experience, that supersedure takes place during the honey-flow; but the fact does not become known to the apiarist until after the honey-flow. This possibly accounts for your mistake. Supersedure cells that are built during the honey-flow might be mistaken for natural swarming-cells. While both such cells are exactly alike, the cause that starts the one is different from the cause that starts the other. And, again, it is not essential to have a good flow of honey in order to rear good queens. Just as good or better queens can be reared under the impulse of scientific feeding. The amount of food given during feeding can be controlled to a nicety, while the amount of food that comes in from a natural honey-flow can not. A heavy honey-flow always stops queen-rearing, while a light one, if continuous, will give just as good results as scientific feeding.

4. We don't know that we can answer this question, as so much depends upon conditions. Generally speaking, convenience would favor the second plan, as it could be more easily carried out.

5. Yes.

6. There is a difference of opinion on this point. We don't think that the shape of the queen's body, or abdomen, has so much to do with her egg-laying as the size of it. Eastern races of bees have queens with long slender slate-pencil-like bodies. Nearly all of these queens are very prolific. Another thing, up-to-date methods of queen-rearing have very little to do with the shape of queens' bodies.

The strain of bees used—or, rather, the breeder used—is the real factor that decides this.

7. While the bees of a pure Italian queen may be uniformly marked, the queens and drones from such queens may vary considerably. Some queens, however, will rear uniformly marked queens, as well as uniformly marked bees; but yet such queens are no better nor purer than the other type just mentioned. But queen-breeders as a general thing prefer queens that rear uniformly marked daughters—not because they are purer, but because the public demands the yellow-all-over queens.

8. Yes, it has been done a good many times. Fresh eggs have often been sent by mail some three or four hundred miles, and, when grafted into cells at the end of destination, rear good queens. Some breeders, quite a number of years ago, used to do quite a little business in selling fresh eggs in little patches of combs. The practice has been generally abandoned because of so many failures.—ED.]

The Heddon Method of Transferring; Questions Concerning Eight v. Ten Frame Hives.

Is there any new method of transferring better than the Heddon?

Is there any better way to requeen a colony that has been queenless for some time, and will not unite with nuclei, than to give them a frame of brood and eggs to raise one, shaking out bees and queen from a box hive on to full sheets of wired foundation, putting the box on top of the hive, with a queen-excluder between? Will the bees uncup the honey and put it below where the queen is, or will they require feeding until brood is hatched out in the box hive? There is very little coming in now. Goldenrod and buckwheat will soon be in bloom here. Clover and basswood are not half a crop here, on account of drouth.

What hive do you consider best for comb honey—the eight or ten frame? Does it pay as well as extracted?

In buying Italian queens would you advise getting tested or untested?

Aylmer, Ont., Aug. 4.

R. H. LINDSAY.

[We know of no better method for transferring than the Heddon. Late in the fall or early in the spring it is advisable to cut out the combs and insert them in the frames by the directions given in our standard text books.

Under the conditions named we would advise giving the colony a ripe cell if you can find one. If none are to be had, give the bees a frame of young larvæ and let them rear a queen of their own.

The bees probably would not carry the honey from the box hive down into the lower one. They might do so, however, if you could uncup the combs; but when they are in a box hive, of course you can not do that. As soon as the brood hatches out we would advise cutting combs out, extract them piece by piece, or mash them up and squeeze out the honey, and then feed the honey to the bees in the lower hive, with frames of foundation, until some of the combs are drawn out and brood started.

As a general thing we recommend ten-frame hives in place of the eight-frame. It is much better for your climate, and sometimes will produce more comb honey than the eight-frame. For extracted honey it is certainly ahead of the eight-frame hive.

As a matter of economy, it is cheaper to buy untested Italian queens of some standard breeder, for probably 95 per cent of the untested will prove to be purely mated. For this time of the year (August), a young queen is far better than a tested one that is probably a year old.—ED.]

Ants, while Not Troubling the Bees, are a Nuisance to the Bee-keeper.

I am annoyed by tiny black ants congregating with their cocoons under the covers of some of my hives. I have a painted cloth between the frames and the cover, and the ants are on top of the cloth. They do not go into the hives; but as soon as I raise the cover they run all over my hands. I have used fine salt, sprinkled on the cloth, which often drives them away, but not always. They are particularly bad this year. Can you tell me whether "Avenarius carbolinum" would be objectionable

to the bees, or whether it would be likely to impart an offensive odor to the sections under the cloth? If there is nothing objectionable about it I have thought I would put a sheet of thin cloth or heavy paper, painted with this substance, between the regular hive-cloth and the cover. In the advertisement in GLEANINGS it is claimed that it will drive ants away.

I am very much pleased with the German bee-brush. It is the best thing I ever had for brushing either bees or ants. W. M. MUTH-RASMUSSEN.

Independence, Cal., June 27.

[We would advise you to collect a few samples of pupae, put them in a small glass bottle, and mail them to your State entomologist. He could give you some formula or some preparation that you could spray on the back of your hive-cloths that would keep the ants out. We have never had any experience with the *Avenarius carbolineum*, but would think that a spray of that preparation applied to your hive-cloth and to the cover of the hive would keep the ants out. Possibly it might be cheaper to spray on top of the hive-cloth some sort of insect-powder. Spraying a little carbolic acid—that is, a very weak solution of it—might answer an equally good purpose and cost far less. It is our opinion that *Avenarius carbolineum* or even the carbolic-acid solution sprayed on top of the hive-cloth would not cause any trouble on the part of the bees. It would be necessary, however, to see that the hive-cloth is tucked down very closely so that the odor of the other substances will not drive the bees down into the brood-nest.

A very thin sheet of tarred paper placed on top of the hive-cloth and under the hive-cover might answer just as good a purpose as any thing you could use.—ED.]

Is Foundation from Foul-broody Combs Safe? Bees in a Vegetable-cellar.

1. If beeswax is melted in a copper or galvanized-iron boiler, will it hurt the quality of the wax for foundation?

2. If combs containing foul brood are melted in a boiler, and rendered with an unheated press, will the wax be safe for foundation?

3. Which is better for shade—a shade-board or a grapevine trained to grow upon a post by the hive?

4. Would it be safe to winter two colonies of bees in a cellar containing apples, potatoes, etc.?

Cedaredge, Colo. L. RINEHART,

1. When you melt beeswax you should put water in the bottom of the vessel first. Wax melted dry in a metal vessel is almost sure to be discolored. Copper should always be avoided, for the high temperature causes the wax to act upon the copper to a certain extent, so as to give a green tinge instead of the desirable lemon-yellow color. Galvanized iron is better, but not nearly as good as bright tin or clean black iron. Rusty iron of any kind will discolor wax.

2. When rendering wax, if the combs are put into a boiler containing three or four inches of water, and this water is boiled until the contents have a mushy appearance, all the hard lumps being broken up by the long-continued boiling of the water, we do not think there is very much danger of transmitting disease if such wax is used at once for making comb foundation. The great trouble with the average person is that, in order to save time, the combs are either not left in the boiler long enough, or else they are not thoroughly stirred. The result is that the whole mass does not reach the boiling-point of water. This not only makes it very difficult to get all the wax out of the combs, but certainly fails to kill foul brood if present. In any foundation-factory, however, the boiling is so thoroughly done that no bad results can follow.

3. It depends a good deal upon your own personal preference which you should use for shade—a grapevine or a shade-board. If you have a permanent location for an apiary, and you are sure that you will not want to move the colonies to some other place, the grapevine makes a very pretty and effective shade; but, of course, the vines need more or less trimming every year; and, take it all in all, unless you have a permanent location, and want the grapes, the shade-board is probably the cheaper and more practical means of partially shading a hive.

4. Ordinarily a cellar that is ideal for the bees is good for the vegetables also. The mere fact that apples, potatoes, etc., keep well in a cellar, howev-

er, would not show that such cellar was also well adapted for wintering bees, for it might be too damp, or the temperature might fluctuate too much. A low temperature, combined with a moist atmosphere, makes a very bad place for bees. For the best results the temperature should be kept pretty uniform—from 40 to 45 degrees—and there should be a good circulation of pure air.—ED.]

Can Granulated Sugar be Used for Feeding that has Kerosene in it?

I have an opportunity to buy several sacks of granulated sugar that has been soaked with kerosene oil; and as my bees need feeding very badly, I should like to have you advise me whether the sugar would cause any trouble, in case I get it to feed them, on account of the oil.

Morrill, Ohio, Sept. 29.

O. T. PIERMAN.

[If the sugar has been soaked clear through by a considerable quantity of kerosene, we doubt if it would be safe for you to use it for the bees, even if they take it down; but if there is only just enough to spoil it for domestic use, we would say that you could use it. It might be well to try one sack first, to see how well the bees take it. If you melt it up and can eat any quantity of it yourself, it probably would not hurt the bees.—ED.]

Brown Sugar for Bees.

I notice that granulated sugar is usually recommended for making syrup. While it may be a little better, as a rule, I have failed to find any difference so far, and I have had considerable experience. I have used all kinds of sugar with good results—even the cheapest grades of brown sugar. I have also failed to see any difference in the effect of feeding thick or thin syrup; but I generally use a slightly larger weight of sugar than of water. The thin syrup, of course, would cause the bees to do some more work in evaporating the excess of water which it contains; but I have never noticed that this made any difference in the long run. As the climate is much more mild here than in the North, the question of winter feed is not very important, as the bees seem to winter on honey-dew just as well as on any kind of honey. While we sometimes have a very cold snap, it rarely lasts long, as it is very uncommon for the bees to be kept in the hives by cold weather for more than a week or ten days.

Stonecoal, W. Va., March 23. W. C. MOLLETT.

Slow Feeding in a Super from a Mason Jar.

Replying to your article, Aug. 15, page 483, regarding feeding for increase and stimulation, and feeding slowly, I would say I have practiced feeding slowly for quite a while. This is the way I do it:

I take a two-quart Mason jar; make a syrup, three parts of water to one of sugar; remove the porcelain part of the cover of the jar, after which I punch a hole large enough for a cabbage seed to pass through. In a piece of two-inch plank I cut about a three-inch hole; set the plank over the hole in the super-cover made for the Porter bees-escape, and invert the jar with the syrup. The hole in the piece of plank holds it. I then put on a super-body and close the whole with bags or carpeting to retain the heat. It is astonishing how quietly the bees will empty the jar, and how fast they will build up.

Vernon, Ct.

J. G. FRENCH.

Carbolic Cloths Satisfactory.

I have noticed that one or two of your correspondents have written about carbolic cloths. I myself have used carbolic acid a great deal in this way, and have found it very handy and useful. I used to have a bottle with three parts of water to one of carbolic acid—"Calvert's No. 5" it was called. I might say here that, when away from home, I bought another sort of carbolic acid, but it was quite useless for my purpose. If a few drops are shaken on a piece of soft calico or linen, and then this piece rolled up tightly, and put in a small tin, like a ten-cent tobacco-box, they are ready when wanted, and can be drawn slowly over the frames or sections. The bees soon get out of the way. If used too strong, or left on top of the frames, one would soon see the bees in front of the hive.

Wellesley, Mass., Aug. 1.

W. H. SCOTT.

Wasps Making Trouble in Montana.

We have been having a great deal of trouble here from the wasps and yellow-jackets that are robbing and destroying our bees. I lost eight or nine colonies in that way last fall, and they are at the bees again this fall. My bees are Italians, but the wasps simply come in from somewhere and rob and kill them. They do not build any nests inside the hive; but early in the summer they started some between the inside and outside cover. There are some hornets here also, but they have not been bothering very much as yet. The wasps seem to work earlier and also later than the bees. I have sat for an hour at a time in front of a hive and destroyed about a hundred wasps; and while I was killing one, perhaps five or six more escaped, so they are pretty thick. I have been told that the only remedy is to find the nests and destroy them; but that is not an easy matter, as we live in a place surrounded by cottonwood, willows, and wild-rose brush.

When the wasps start robbing a strong colony, the bees are thick in front at first, and try to fight them; but later the wasps win. They dart back and forth so quickly that the bees are confused.

My wax-extractor lid became a little warped so that it did not fit just right, and at one time I found a number of wasps inside on the wax. It occurred to me to put poison in the extractor, since the bees could not get through the crack, and I first tried a yeast cake mixed in a cake of honey. It attracted them all right, but I could see no dead ones. Later I used a sheet of poison fly-paper that had been soaked in a little water; and although the wasps seem to be getting fewer in numbers, I can find no dead ones. So far no bees have got in; but I am afraid that the lid may fly down some time and allow the bees to get at the poison.

Rancher, Montana.

C. ISAAC.

[We have had a number of reports from Montana and some of the other western States in regard to the depredations by wasps and hornets, and they are apparently more serious pests than most beekeepers realize—at least in some localities. It hardly seems to us that the few that could be poisoned would make much difference. We believe that it would be better to make sure that all colonies are powerful and pure Italians, then have all the entrances contracted during the time when the wasps are so thick.—ED.]

Amount of Wax in Old Combs; Two Queens Wintered in One Hive.

How many pounds of wax should I get from 100 lbs. of the average old comb, a Hatch press to be used? Last fall I united two weak colonies, leaving both queens with the united colony. Last April, on opening the hive I was surprised to find both queens living and laying. As there was no division of any kind, both queens having access to any part of the hive, I considered it remarkable.

Everett, Mass.

T. J. HAWKINS.

[It depends entirely upon whether these old combs contain honey or whether they are dry; also whether there is much pollen in the cells. We have sometimes obtained 50 per cent of wax by weight; but as a rule it runs a little less than this, owing to the fact that there is usually a little honey or pollen in the combs. Of course it depends, too, upon the age of the combs, as new combs yield a much larger proportion of wax by weight than old combs.

Two queens, if they are found together in a hive during the summer, almost invariably fail to keep up friendly relations or else the bees do not tolerate both queens, for one is usually all that can be found in the spring or even in the late fall. If you could duplicate this experiment you would have something valuable; but we presume that it is just by accident that the two queens lived through the winter. It would certainly be very convenient if a surplus of queens could be wintered over in this way, to be used the following spring for queening, etc.—ED.]

The Queen-finding Sieve a Success.

As the weather was cool and cloudy when I was ready to introduce a lot of queens that I ordered, I thought I would try the plan given by J. R. Crane, page 451, Aug. 1. Accordingly I made a box with

short legs, with wood at two sides, and queen-excluders similar to those I use on my twelve-frame L. hives for the two other sides and the bottom. I am well pleased with the plan, for I could easily find the queens after the bees were nearly all in. Of course I found a few queens when I was lifting out the combs, for I was careful not to use so much smoke that the queens would not run off on the hive. I removed all the combs that were above the excluder in other hives first, then those in the lower story by themselves, before I began to shake.

Low Banks, Ont., Sept. 11.

ILA MICHENER.

Bees Injuring Alfalfa.

Some of the ranchers here are circulating the report that there are so many bees here that they can't fatten cattle on their alfalfa hay. They assert that the bees take its strength. I am satisfied that the bees do not hurt the feeding value of the alfalfa. Some even blame the bees because they can't raise alfalfa seed. What do you think of such people?

New Castle, Colo.

S. R. STEWART.

[We have heard the same story before; but how any sensible man can blame the bees for alfalfa failures is more than we can see. The bees have about as much connection with the failure as the tree had in the case of the elephant. A little boy heard his elders telling conundrums, and so he proposed one himself, not knowing it had to have a "point." He asked why an elephant did not like mince pie; and when no one could answer he said it was because the elephant could not climb a tree!

We suppose these ranchmen have the idea that the bees take up all the moisture of the alfalfa plants, causing them to dry up and die. The pity of it all is that the bees are these ranchers' best friends.—ED.]

Colonies Packed in a Box.

I have a plan for wintering my two colonies of bees, and wish to ask your advice in the matter. I have thought of taking a large box, and, after guarding against its leaking, place the hives in it, surrounding them with chaff, then putting on the cover. Would it be better to leave the entrance so they could go in and out as they wish to all winter? or do you think that plan would not work?

Ithaca, Mich., Sept. 11.

GEO. STIVERS.

[Your plan of packing your colonies in a large box in the manner you describe will be all right; but you must be sure to have the entrances so arranged that the bees can have a free passageway to the outside at all times. If you shut them in, the result will be very disastrous.—ED.]

Rearing a Queen in the Super, etc.

I am very much interested in Florida, as I hope to go there some day. I wish to say that the series of articles by Mr. E. G. Baldwin, on bee-keeping in Florida was worth a year's subscription. I am only a beginner, starting last year with one colony. My son and myself bought six more this spring. I let two queens lay in the supers, and thereby had two strong colonies. One of these I divided and got two good colonies, the mother colony giving me 25 lbs. of honey. The other strong colony I let alone, and that gave me 35 lbs. I had one swarm; and in trying to introduce pure Italian queens three were killed.

This has been a poor year about here. We got about 140 lbs. of honey from seven colonies, and shall have to feed some syrup.

New Bedford, Mass.

I. ELLIOTT.

Will Unsealed Honey Sour?

I should like to know if honey would sour if kept in unsealed combs.

Chicago, Ill.

R. K.

[If unsealed honey is kept in a warm dry place we do not think there will be any danger that it will sour; but usually, since it has not been thoroughly ripened when it is still unsealed, it is a little harder to keep than sealed honey. Any honey, if kept in a cool damp place, will absorb moisture from the air; and, after becoming very thin, will sour very quickly.—ED.]

Our Homes

A. I. ROOR

Be not forgetful to entertain strangers; for thereby some have entertained angels unawares.—HEB. 13:3.

Our stenographer just reminds me, after I had chosen this talk to-day, that this verse has reference to Abraham when he entertained the three angels who came to his tent in the heat of the day. Now, you may smile a little at my application of this beautiful text; and you may think that what I say should come under the head of high-pressure gardening or the poultry department. Well, let us get a start.

Some of you older ones may remember the time when tomatoes were not considered edible. They were called "love-apples," and were grown in the garden for ornament. Finally somebody discovered that they were "good to eat," and not *poison*, after all. We had been entertaining angels and did not know it. May be you think this a pretty big stretch of the imagination; but at the present time there is scarcely a canned vegetable in the whole wide world that is put up carload after carload as is the humble tomato. It is true that somebody started the scare, some years ago, that the use of tomatoes will produce cancer; but our expert doctors and experiment stations, after making careful tests, have brought in a verdict in favor of the tomato—not guilty. Eating *too many* tomatoes or too much of any thing else, especially without thorough mastication, may induce cancer; but the tomato is certainly a most precious gift from the all-wise and loving Father; and yet for ages we held it off at arm's length, and did not recognize one of our best friends.

It is much the same way with sweet clover. Just think of the racket we have had about sweet clover being a noxious weed! and the story even got into some agricultural papers that ought to be ashamed of themselves. Sweet clover to-day is one of our most valuable legumes, and in many places it is called the *most* valuable. It will grow where nothing else will, and, in fact, it seems to prefer the hardest and most unpromising clay or gravelly soil; and after it has pushed its roots away down and pumped up water and fertility, it makes a poor ground fertile to grow other crops. Even in the alkali lands, where almost nothing will grow, the voracious sweet clover makes the soil sweet, and finally assists in making the desert lands "blossom as the rose."

Well, just at the present time many folks are complaining of the humble dandelion. A "spud" has been invented to dig them out, root and branch; and some of the papers are telling us to go around with a coal-oil can and drop a little oil on the crown. A year or two ago I wrote up the dandelion cow (1907, pages 840, 841, and 842), and gave a picture of our orchard where the dandelions stood knee-deep. We proved, too, that the dandelion gave the richest milk

and the largest quantity of cream, and it comes out in the spring ahead of clover. After that, other agricultural papers took it up, and people are just beginning to catch on to the fact that in the early spring the dandelion is one of the best plants in the world for the dairyman.

And this brings me to another *great discovery* that I have just made. Our orchard of about half an acre was heavily manured some years ago when potato-growing was my hobby. I think our last crop of potatoes was grown under straw. The whole orchard was covered with straw a foot deep, and we fondly hoped it would choke out the dandelions. Not so. The dandelions evidently considered the straw mulching was for their special benefit, and they crept up through it earlier in the spring than ever before, with great healthy blanched stalks and leaves that made magnificent greens. I suppose most of you know that down east the market-gardeners grow dandelions expressly for human food; and nice crisp dandelion greens early in the spring bring a big price in the market. Of course, there are people all over our land who have discovered that the dandelions are not only healthful but delicious, and they are out with their sharp knives hunting rich stalks, to get the first early dandelions. Now, everybody knew (or ought to have known) that dandelions are good healthful food for human beings; and after the way we wrote it up they ought to have seen they were good for the cow. But my discovery is that they are good for chickens, especially certain breeds of them. This half-acre orchard I have mentioned is, at the present time, my poultry-yard. It is surrounded by a fence of netting four feet high, and another fence runs across the middle, dividing it into two parts, and still another through one of the halves, making two small yards and one large one. My daughter, Mrs. Boyden (formerly Blue Eyes) has caught the chicken fever, and she has a yard adjoining my orchard, in which she keeps White Wyandottes. Well, after I returned from Florida I noticed there was not a green thing in her yard—not even a dandelion; so I made an opening in my fence and let her chickens, big and little, get into one of the small yards in the orchard. Of course, they went for the dandelions and other green stuff with avidity.

A few days ago, when we were gathering the apples down in this yard, all at once I noticed there was scarcely a dandelion visible. There was a good growth of grass and some clover; but the Wyandottes had snapped up every dandelion as soon as it showed a bit of green. Now, I do not know whether *all* Wyandottes are so greedy for dandelions or not; but I think most of the large breeds that subsist largely on green food where they can find it could be easily taught the trick of eating dandelions. The other yards,

where my Leghorns are, were full of dandelions almost knee-high. The Leghorns either did not care for them or else there were not enough Leghorns to gather the crop; and my discovery embraces the fact that, even if it does cost more to feed the large breeds, they can be taught to subsist largely on greens, and perhaps other plants as well as dandelions. When I observed their strong preference I swung the gate open and invited my daughter's whole flock to come over and "be happy" like the traditional "pigs in clover" you have heard about. Why, it was just fun to see the beautiful plump white pullets and long gawky cockerels wade into the dandelions. They were so crazy for the greens that they did not mind my presence at all as the Leghorns do. And this is another thing in favor of the Wyandottes. They are so exceedingly gentle and kind that it almost seems wicked to kill the little chaps; and I for one seldom or never kill a pullet for anybody.

I suppose you have all heard of nice "corn-fed beef." It certainly is very much superior to beef fed on any thing else. Now I am going to introduce to the world "dandelion-fed" chickens. I think that down east they have already acquired a reputation for *milk-fed* chickens. They all say they are greatly superior. But it is *my* pleasure to introduce to the great wide world *dandelion-fed* chickens.

Yesterday was the anniversary of our golden wedding. The children and grandchildren were all assembled. It took five Wyandotte cockerels to furnish the dinner; and, if I am a competent judge, I should say a dandelion-fed Wyandotte cockerel makes better fried chicken than any other "fried chicken" in the world. My brother-in-law, J. G. Gray, in closing his remarks, said it was characteristic of A. I. Root to want to share with the rest of humanity every thing he discovers or comes across that he greatly enjoys. Very likely he gave me more credit (as is customary on such occasions) than I deserve; but if he is right about it, I hereby take great pleasure in introducing to your notice the humble dandelion and the dandelion-fed fried Wyandotte chicken. I told you there were toasts from different ones present. One of the toasts was a little poem by one of my very good friends; and I thought best to submit the poem right here.

Just fifty years, my worthy friends,
If records rightly tell,
Since into Amos' loving care
A "blue-eyed Susan" fell,
And not one charm, in all these years,
Has that sweet flower lost,
And not one nip at autumn-tide
Of matrimonial frost.

As from these richly nourished Roots
Five little blue-eyes sprang,
To God, from whom these blessings came,
Your humble praises rang.
And now, at this late autumn-tide,
All lands your praises sound.
For your long cord of love has reached
The whole wide world around.

May be you think I have forgotten all about the text at the head of this talk; but

if you will be patient a little you will find that, when I get to the end of my story, it comes in after all.

Not quite forty years ago—perhaps 35—I started a mission Sunday-school in one of the worst beer-drinking spots in our county. It was about the time these Home papers were started. If you have the old numbers on file you can turn back and read about that Sunday-school. When the weather was pleasant I used to take Blue Eyes. She was then just learning to talk; but she used to stand up on the platform in the Sunday-school and sing—

I am Jesus' little lamb;
Happy all day long I am.
I am his and he is mine—
Oh! I'm his lamb.

Well, while the weather was good during summer the Sunday-school was a success. Sometimes the people deserted the brewery and the saloon (both of which were open all day Sunday and Sunday night in those days), and came to the Sunday-school until some days the country schoolhouse would hardly hold them all. Well, when winter came, everybody—or at least almost everybody—thought the school would have to be given up; and in discussing the matter I told them if it were given up it would be because of no scholars; and I announced I would be on hand, no matter what the weather; and if any person felt as I did about it I should be glad to have such person be on hand and back me up.

One day late in the fall the weather was so bad that our Medina liveryman said he could not consent to let any of his "rigs" go out in such weather. But he was not much in sympathy with Sunday-schools, you will notice. I went home and tried to make up my mind that I would not go that day; but when I thought it might be possible that some of those bright little faces would be on hand and find no teacher, I told Mrs. Root I could not stand it. I got some rubber boots and a big umbrella and waded through the mud four miles to that Sunday-school. One of my good friends, a deacon in our church, brought the subject up in prayer-meeting, and said he thought I was carrying things to an unwarrantable extreme. He said he had taken pains to investigate, and found I had traveled off down there to Abbeyville, through the mud and rain, and found *just two barefooted* boys present. I smilingly owned up that what Deacon Thompson had said was true; but I did not agree with his *decision* in regard to the matter. I was happy at every step I took on that four-mile tramp. And I think the two small boys went home happy also. I had a good square talk with them. I then learned that their mother was carrying a fearful load in caring for a pretty good-sized family while the poor father was a victim of that saloon and brewery. I wonder if my text comes in here anywhere—"entertaining angels unawares." If you had seen me with my umbrella and mud-bespattered rubber boots you would never have thought of call-

ing *me* an angel; and, if I remember correctly, those two small barefooted boys—that is, in the sight of the world—would be considered any thing but “angelic” in looks. But, dear friends, I am sure that God’s angels were watching over us—that little trio in that humble country schoolhouse on that stormy day. The two boys are now grown-up men, and they both belong to the Lord Jesus. The oldest one is foreman of our shipping department, and has held that post for years. He has three beautiful children, and one of his boys is expert with the automobile. A few days ago, when we were both watching the boy as he managed a large fine machine with such skill, I said, “Jacob, do you remember that stormy Sunday when you and I first became *acquainted* down in that Abbeyville schoolhouse?”

“You bet I do, Mr. Root. I shall never forget that day.”

“Well, Jacob, as we studied the lesson we had that day, little did you or I dream what God in his infinite love and kindness had in store for us. That day was probably a turning-point in the life of all three of us.”

“Mr. Root, it certainly was a turning-point in my life; and I shall never forget the helping hand that was extended to me that Sunday afternoon.”

Not many days after, the boy came to me for a job. He was so small I was tempted to laugh at the idea. I set him to helping the engineer. In a very few days he knew all about that engine and boiler. It is no wonder *his* boy caught on quick to automobiles. The boy was soon a favorite throughout the whole establishment. He carried the mail quicker, and attended to every errand with more skill and precision, than any one had ever done before. He went up and up, and finally married one of the most able girls in our office; and it was his good wife who wrote the beautiful little poem I have given you. Don’t you think that all three of us “entertained angels” on that stormy Sunday afternoon? and would it be too great a stretch of the imagination to believe that invisible angels were present at that little school, and that they have been following in our footsteps and watching over us ever since that day, nearly forty years ago?

He shall give his angels charge over thee, to keep thee in all thy ways. They shall bear thee up in their hands, lest thou dash thy foot against a stone.
—PSALM 111 : 11, 12.

CAN A MAN WITH A LARGE FAMILY, EARNING \$2.00 A DAY, EVER BECOME A MILLIONAIRE?

Mr. A. I. Root:—Did you ever stop to think how long a poor honest man would have to labor, at \$2.00 a day, to save \$1,000,000? Only 1370 years. How much longer would it take if he had a large family to sustain? This would be hard to tell. Your ideas and sermons coincide so well with my way of thinking I can’t help writing you and wishing you all good health and peace possible. I am 42 years old, and have been digging coal for the most of 20 years; and now on account of my health I shall likely have to quit mining. I have a large family, too—ten children at home. I am not ashamed to confess that it takes quite a lot to keep this family,

I have kept out of debt so far; but if I can not work, then what? Mr. Root, do you think the “oil king” would read a letter if I could get one to him? The millionaires give organs, libraries, etc.; but did you ever know of their helping an honest, worthy individual? Mr. Root, I often wish these rich men could see and know how the poor have to live and where they live. It is sadly true that some could do a lot better if they would spend their hard-earned dollars for their families in place of drink; and there are good honest men all over the land struggling hard in this life, denying themselves and family of many things to keep out of debt, too honest to ask for help. God knows nothing would please me better than to have sufficient means to make a start with poultry; but I tell you honestly it takes all I can make to support my family, and I neither smoke nor chew tobacco nor drink whisky nor beer. Oh to be out in the beautiful pure air! If they only knew, Mr. Root! perhaps I have gone to extremes; but I do hope you will forgive me for this long letter; but my thoughts must cry out. May you be strengthened in your work to strike a blow at wickedness everywhere.

Three Springs, Pa.

W. S. COHENOUR.

My good friend, I thank you for your kind and frank letter; and while I can not promise to show you how you can become a millionaire (and I am not sure I would try to, even if I could), I think I can tell you briefly how you can get ahead enough to get some chickens and live out in the country. Of course, \$2.00 a day would not support a wife and ten children—that is, in very much luxury; but, my good friend, do you mean to tell us that those ten children, especially the older ones, can find nothing to do to help support the family? Can not some of the older boys help you in your work of digging coal? There is something wrong somewhere if you have not been able to lay up at least something for a rainy day. Are you and your family reading the papers, and keeping yourselves educated as to what is going on in this busy world of ours? There are steady and unfilled demands for good, honest, energetic men, and especially for young men and boys—the kind who have been trained, and who are training themselves for useful positions in life. I suppose you know, without my telling you, that most of our millionaires started with little or nothing. Edison, right near my home, was a poor newsboy, and he has made his way almost without assistance from any one. You suggest that a good-sized family may be a hindrance. My dear friend, when the little prattlers came trooping into our household until there were five, Mrs. Root and I felt worried and troubled; but those two sons and three sons-in-law have lifted the burden from my shoulders in a way that makes me thank God again and *again* for his great wisdom and love in sending them. In fact, were it not for the children I fear I might not now be living.

The great business world is now offering five and even ten dollars a day for men of education and ability; and the men and boys who command these great salaries have nearly all come from humble homes where the parents could not afford to give them more than a common-school education. They are mostly “self-made” men.

Yes, you could send a letter to Mr. Rockefeller; but there are so many such letters

sent him already that he never thinks of reading them—in fact, he *could* not. A clerk, or a number of them, read these letters, and decide to the best of their ability where money will do good instead of harm; for it is true that money given without some sort of equivalent not only very often does harm, but it is almost *sure* to do so. In giving to libraries and to schools and colleges, the money usually does good because it *helps* the poor ambitious boys to get an education with but little effort on their part. In the same way money given for the spreading of the gospel and missionary enterprises also helps.

While I dictate this, there are men and boys wanted in hundreds of places. Farmers everywhere want help—that is, if they can get efficient and intelligent help at a reasonable price. If this is not the case in your locality, let some of your bright boys and girls push out into the world where they are wanted. I say girls, for girls are now getting almost if not quite as good pay as boys. But we want girls and boys who have been carefully brought up, who are capable and willing to work.

There is an item now going the rounds of the press telling about a man who lives on 25 cts. a week. When somebody said it was an impossibility I replied, "My friend, 25 cts. will buy a peck of good wholesome wheat; and if you grind it in a coffee-mill, and then cook it a good while in a farina-boiler, it will make not only a most wholesome food, but a most delicious one." Such a diet will make you well and keep you well; and it will not hurt you, but, on the contrary, it will do you *good* to go without a lot of things (as Terry does) that most people—yes, many poor people—think they *must* have three times a day or they will starve. May the Lord help you, dear brother, to get out of that coal-mine and out into the open air, and raise chickens, and set a good example before your family of ten children.

PARCELS POST! PARCELS POST!

We clip the following from the *Postal Progress*, published by the Postal Progress League, Boston:

1. Why does our Postoffice Department charge one thousand per cent more for carrying parcels than does the German government?
2. Would not the establishment of a parcels post throughout the whole country reduce the cost of living, and benefit every consumer and producer?
3. Why does the Government charge 16 cents a pound, and limit the weight to four pounds for packages destined to any postoffice in the United States, while it receives parcels weighing eleven pounds at the rate of 12 cents per pound for delivery to almost every other country in the world?
4. If you favor a parcels post, what are you doing to bring it about at this session of Congress?

Yes, sure enough. Why does our own postal department carry 11 lbs. clear over to Australia cheaper than it will carry it to our next-door neighbor? Is there any official connected with our postal department, from the Postmaster-General down, who dares undertake to give any sort of answer to this question?

BILLY SUNDAY; WHAT HE DOES WITH HIS MONEY.

Now, I do not know what he does with *all* his money; but I can tell you what he did with *some* of it. During his evangelistic work in Lima, Ohio, a banker, while looking over the pledges that had been handed in at the end of the meeting, made the remark that a pledge for \$20.00 from a poor hard-working woman was more than she could afford, and that she should not be allowed to make such a contribution, especially as her little home was mortgaged, with very little hope that the mortgage would ever be lifted. Sunday agreed with the banker, and was anxious to know how she came to make such a free-will offering. Investigation brought out the fact that her husband was converted the night before, and publicly announced that he had started out to lead a new life; and his good wife, out of gratitude to her heavenly Father for having thus answered her prayers of many years, gave the twenty-dollar pledge. Mr. Sunday asked the banker to get the mortgage. It was for the sum of \$800; whereupon Mr. Sunday paid off the mortgage, and sent it to the devoted praying woman, telling her that he did not mean to be outdone in gratitude to *his* heavenly Father by a poor woman who had heretofore been the wife of a drunken husband. See page 610 of our last issue.

APPLES FOR SUPPER; OR, ONE MEAL ENTIRELY OF FRUIT.

Dr. Miller, in his Straws in this issue, tells us he has pears for breakfast instead of apples for supper as I do; and I suppose it does not make very much difference which one of the three meals during the day is entirely of fruit. President Taft has his fruit—apples, if I am correct—in place of his regular dinner. Well, I want to tell you that for some time of late I have been having my apple supper at four o'clock instead of five. Then nothing goes into my mouth after this apple supper except water, until bedtime. I sleep very much better at night, and feel better and fresher in the morning, by having the process of digestion finished and out of the way as much as possible when I go to bed at nine or ten. Another thing, years ago Dr. Salisbury told me to be sure to have my nap during the day *before* dinner instead of after it. Dr. Kellogg, of Battle Creek, recently gave me substantially the same instructions. Now, we hear a great deal about an after-dinner nap; but it does not work at all with me. A nap before dinner rests and refreshes me; but when something prevents a nap before the meal, and I take a nap after dinner, I feel distressed, my mouth tastes bad, etc. The point that both doctors make is this: One should be thoroughly *rested* and *refreshed* before sitting down to *any* meal; and the process of digestion seems to go on very much better, especially in my case, while I am moving about and doing actual work.

POULTRY DEPARTMENT

A. I. Root

DRUGS AND "DOPES" FOR CHICKENS AND —FOR "HUMANS."

Prof. A. W. Bigham, one of our best authorities on poultry, of Brookings, So. Dakota, gives us the following in the October number of the *Western Poultry Journal*:

It is simply silly to allow conditions to exist which invite disease, and, when the scourge arrives, resort to the use of drugs. I wonder how many cases have been reported to me this year in which the poultry-keeper used, in the drinking-water for his fowls, carbolic acid, permanganate of potassium, sulphate of iron, and patent poisons galore. The digestive system of the bird is adapted to taking in pure water to mix with the solid food to a reasonable extent. Certain juices and secretions are supplied in the food tube by glands to help digest the food. What is the effect of the poisons added to the drinking-water? Usually digestive disorder is increased, because these drugs are not adapted to aid in the digestive processes. They upset the natural plan, and disarrange the digestive system. Try a little kerosene or carbolic acid in your own drinking-water, or add a little permanganate to your coffee some morning, and note what a pleasant, exhilarating, super-digestive influence results.

VALUABLE VENTILATION.

Again, how often the mistake is made of gathering in the beautiful healthy pullets from colony houses on free range and placing them in closed houses! Perhaps the house is a new one, all so clean and nice, but not completely dried out. Very quickly the confined birds catch cold, and probably roup results. Then comes the dosing with "roup cures." Write it down, please, in your Bible among the records of the family births and deaths that pure fresh air and sunshine are better for fowls (and humans too) than all the medicines listed in the pharmacopoeia. Ventilation has a value, because, when correctly provided, it prevents illness and contributes to the health and proper productiveness of poultry.

Amen and amen to the above sentiments. We make our chickens sick (and people too) by shutting them up in close rooms, cutting them off from God's free air, and then try to cure them by dosing them with poisonous drugs—drugs that have about as much to do with the disease in question as the absurd remedies among the heathen doctors. In many of our poultry-journals you will see a long list of remedies (one for each "disease," real or imaginary) for chickens—50 cents a box—when the real cost of the ingredients in the box (if the stuff really *was* needed), is probably less than 5 cents. Of course the chickens often get well in *spite* of the drugging; but the medicine has no more to do with the recovery than does the horseshoe nailed above the door to bring "good luck" and ward off disease.

INDIAN RUNNER DUCKS.

We clip the following from *The Farmer's Guide*:

Indian Runner ducks will grow and mature three times as fast as any variety of chicken or any other animal that wears feathers. We have a bunch of them, just five weeks old yesterday, that are now half grown and nearly feathered. When full-feathered they will be ready for market—and that is where all culls should go. One breeder of Runners, living near a good-sized town, has a contract with a large hotel to supply young ducks at fifty cents per head, and nice fresh eggs at quite an advance over the usual market price. This provides an outlet for all

surplus stock and eggs. Those making a business of rearing Pekin ducks for market dispose of them at nine weeks of age. Runners could easily be made ready for market at *eight* weeks of age.

Of course, these ducks had good care and a plentiful supply of correctly balanced food. One would not expect them to grow bones, muscles, feathers, eggs, etc., on thin air and water, fond as they naturally are of the latter.

Their vitality is extremely strong. For example: We had a colony of seven hens hatching ducklings. After we supposed they were through, the few unhatched eggs were gathered into a basket, out of the way of the young ducklings. Later in the day we went out and found in the basket a duckling. It had insisted on coming into the world, even if he had to do it alone and unheated except by the warmth of the sun whose intense rays were veiled by clouds. We gave him into the care of one of the good motherly hens, and he is still alive.

Another great point in their favor is their immunity from the little ills that carry away so many young chicks. Poultry-raisers know, to their sorrow, how difficult it is to rear chicks upon the same ground year after year. Now, while it is vastly better to renovate the ground for any kind of fowls by growing some kind of crop on it after having "chicken-cropped" it for several years, we have started young ducks in coops right at the back door, where chicks have been reared ever since the red men roamed the wilds, and where chicks developed gaps and runtiness whenever permitted to roam there; but the ducks did not mind it at all. They grew and thrived, and soon got so saucy that they had, perforce, to be taken to their little wire runs where they could be kept under surveillance.

Our neighbor passing by the other day, and noting our growing ducklings, remarked that she was sorry she had not arranged to rear more of them, "for," said she, "you can keep them where you want them." This lady has been quite unfortunate in having her chickens taken by crows, hawks, etc. It is true, the ducklings are easily restrained. An eighteen-inch-high one-inch-mesh wire fence will do it, and they soon become accustomed to their narrow limitations, and are happy, busy, and *hungry*.

MRS. J. B. HOWE.

INDIAN RUNNER DUCKLINGS; ANOTHER SIDE OF THE QUESTION.

The next time "A. I." writes about Indian Runner ducks, please have him tell us how to feed and care for the small ducks. I find them very hard to raise here. They have fits, and get weak in the legs, crawl around a few days, and die at the age of about three or four weeks. I can not get them to live at all. They get out in the sun, and are too weak in the legs to get back, and just lie in the sun and die. I keep plenty of water by them all the time; feed two parts bran, one part shorts, one part corn meal, all they will eat, moistened. If he will tell us how to produce the desired results it will be of much greater value to us than all of these big reports, which are of no account to us, unless he will show us how to produce such results.

Boyd, Ky.

H. C. CLEMONS.

My good friend, I have had no such trouble at all as you mention. My ducklings were hatched under hens. Their first food was bread and milk, but they were permitted to run out over the grassy lawn whenever they felt inclined. After they were about a week old I gave them bran and shorts mixed with water, just as you did, except that I did not use any corn meal. It may be something in the locality, or possibly something in the strain of ducks. I fed mine whenever they seemed hungry, and most of the time they had bran mash where they could get it whenever they wanted it. Whenever the sunshine was too hot they had easy access to shade.

Temperance

OWENS VALLEY, CAL., WET, 35 PRISONERS
IN JAIL; DRY, JAIL EMPTY.

The *Rural Californian*, in writing up Owens Valley as a fruit region, mentions incidentally the following:

It appears that Owens Valley a year ago was voted dry. At that time their county jail contained thirty-five prisoners; to-day that jail is empty, and there is not one criminal case before the court. A recent election on local option upheld the present policy that Owens Valley would continue dry for two years at least.

Now, then, with the above facts facing us (and there are hundreds of similar ones coming up every day), how can any man who pretends to be a good citizen, to say nothing about being a professing Christian, or how can any man of good common sense, vote wet?

THE DRINK HABIT—BY ONE WHO KNOWS
WHAT HE IS TALKING ABOUT.

Josh Billings once said, "It is a bad plan to tell lies," and added that he knew by "experience." Now right here our long-time friend Chip Henderson, of Murfreesboro, Tenn., sends us a newspaper clipping in regard to the evils of the saloon traffic; and the man who gives us this evidence is one who *knows* by sad "experience" what he is talking about.

MANKATO, MINN., Sept. 30.—Ben F. Parker, who once owned 38 saloons in Des Moines, Ia., is trying to make restitution for the past by working for temperance as hard as he used to work for intemperance. He has been lecturing here, and will lecture in other parts of Minnesota. Later he will go to Iowa, and eventually to Des Moines.

With all the authority that belongs to a brand plucked from the burning he lambasts the business in which he was formerly engaged. "The curse of mankind," he said in a lecture at the Congregational church here, "is the liquor-drinking habit. I have owned and controlled 38 branches of the devil's sin-producing gin-shops. I want you to realize that you are listening to a former practical dealer in the wages of sin, and not to the vapors of an on-looker.

"I was the acknowledged champion extra heavy-weight dispenser of the heaviest of all woes; and when I tell you that the liquor business is the curse of the human race I am talking from the standpoint of one who has witnessed the results every day in the year from 38 angles, and not through the bell end of a funnel.

"I defy any man to present a single argument that will stand the acid of criticism in favor of the liquor game. I have seen the working man spend the money for drink that ought to have bought shoes for his children. I have watched the business man spend money over the saloon bar that belonged to other persons; and I have been *particeps criminis* to more woe than the bubonic plague ever spread in its most aggravated form.

"I tell you that the drunkard is more to be pitied than censured. He is a helpless weak-brained idiot, and is fostered in his prostration by the evils of his surroundings. If all men were determined that way, the saloon would soon go out of business; but, unfortunately, most men are weaker than their environments, and fall by the allurements of vice. It is the absolute removal of these surroundings that will assure the betterment of society; and the stamping-out of the saloon, the brewery, and the distillery is the only practical means by which the evil can be exterminated."

Parker was for many years one of the noted characters of Des Moines. Backed by brewery interests he established a chain of saloons, more than double the number owned by the biggest saloon trust in Chicago. The evils of the business finally became unbearable to him and he gave it up.

He has for some time been announcing his intention of going on the temperance platform and attacking the business in which he was formerly engaged on such a large scale. In person he is as unusual as his career has been. He weighs about three hundred pounds, is forceful in demeanor and impressive in his makeup. His temperance lectures are attracting wide attention.

OFF FOR FLORIDA ONCE MORE.

On Nov. 7, after casting my vote, Mrs. Root and I expect to start for our Florida home; therefore all communications, after Nov. 1st, for A. I. Root, should be directed to Bradentown, Fla., instead of Medina, O. Now let me give you, in a friendly way, a caution. During the past summer, with two or three stenographers right at my elbow I have been able to answer letters promptly, and sometimes dictate good long ones. But down in my Florida home, without a stenographer, I can not keep this up. If you will, however, inclose an addressed postal card, I will try to pencil a brief answer of some kind to you. I can often do this without looking or thinking about the address of the writer; and I hope you will excuse me for saying that nothing wears on my "threadbare" nerves like trying to decipher addresses. You may think that inclosing an addressed envelope will do as well. Now, next to deciphering addresses, folding and unfolding sheets of paper has worn me out. I am trying to keep young, even if I am 72 years old; but I shall not be able to keep young if I try to keep up the voluminous correspondence that I have been keeping up during the past summer. You may ask why I do not have a stenographer in Florida. Because keeping her busy and caring for her out in the country would be an additional care and worry, especially as I go to Florida to play with my ducks and chickens, and take a big long rest and keep out of doors.

Now, after this explanation you can send me as many letters as you please; but as a rule I wish you would not make them very long; and I hope you will not feel hurt, some of you, if I ask you to use white paper; and if you *must* use a pencil, get one that is nicely sharpened and will make a *black mark*. My mental energy has been sometimes almost used up in trying to read a long letter written with a pencil, and so crowded together that it took the strongest light of day and spectacles of strong power to make out what it was all about. I know I ought to feel happy, and I do feel happy, to know that I have so many devoted friends, some of them in the humblest walks of life. Quite a few of the friends last winter would add; "Mr. Root, do not bother yourself to try to answer me. I do not expect any answer, and my letter does not require it." When you write that way, I do not care how many letters you send. I like to carry home from the postoffice a big pile of mail; and kind words, especially suggestions in regard to the ducks and chickens, are always gladly welcomed.