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50TH YEAR

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American Bee Journal



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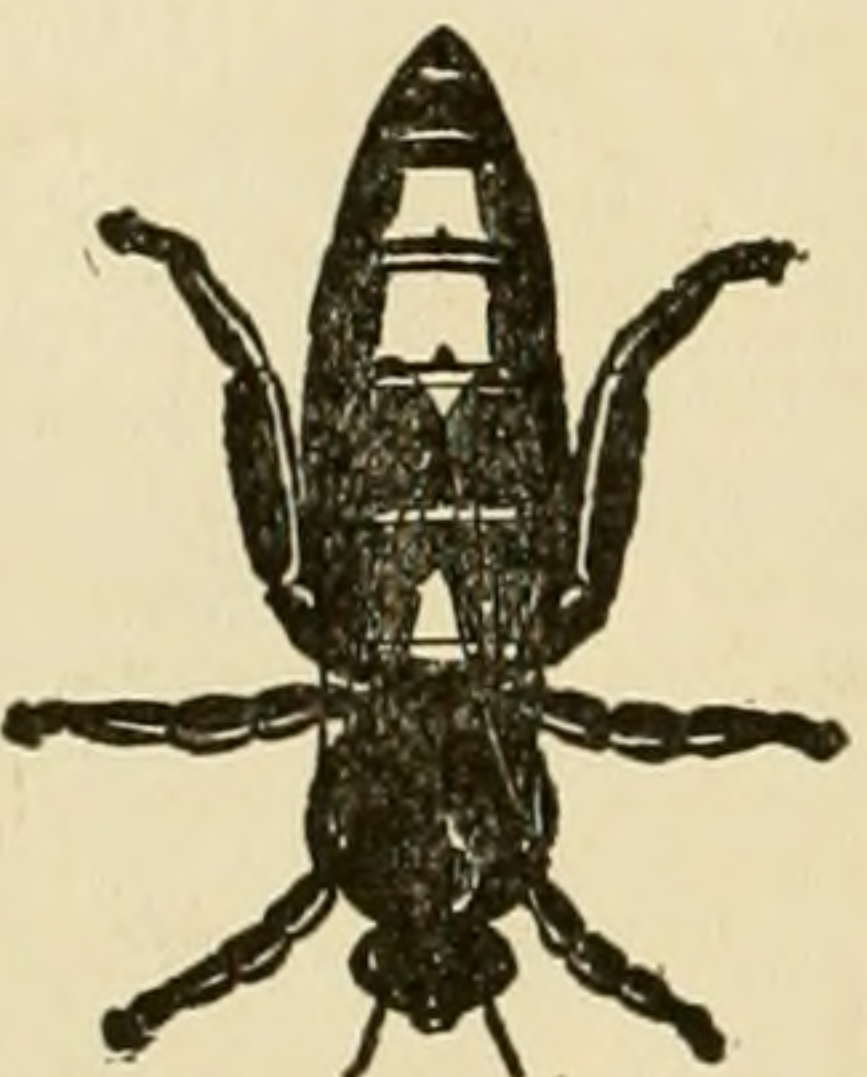
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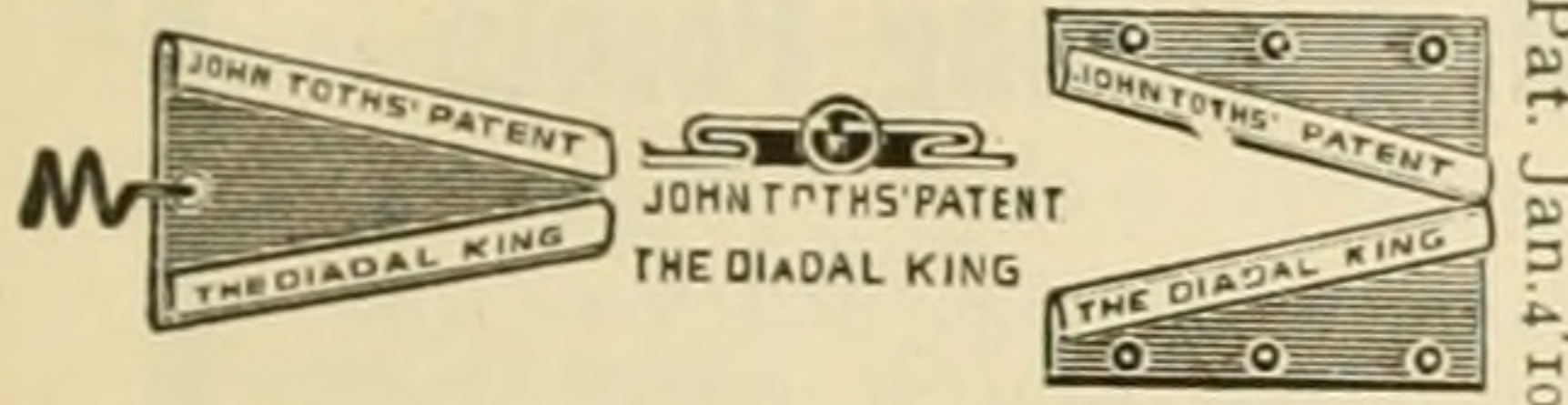
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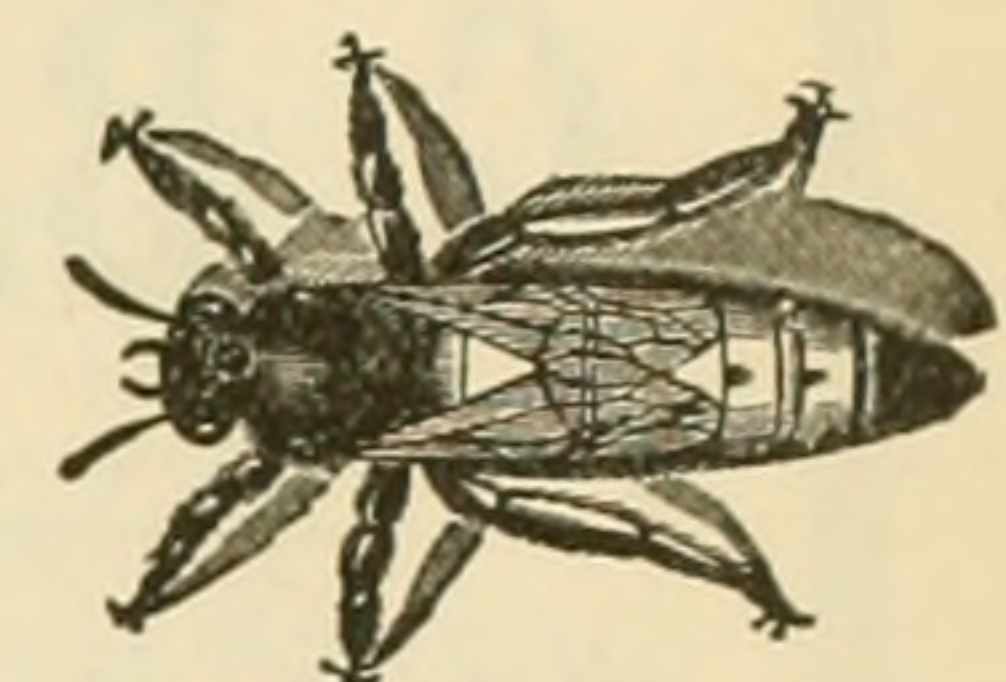
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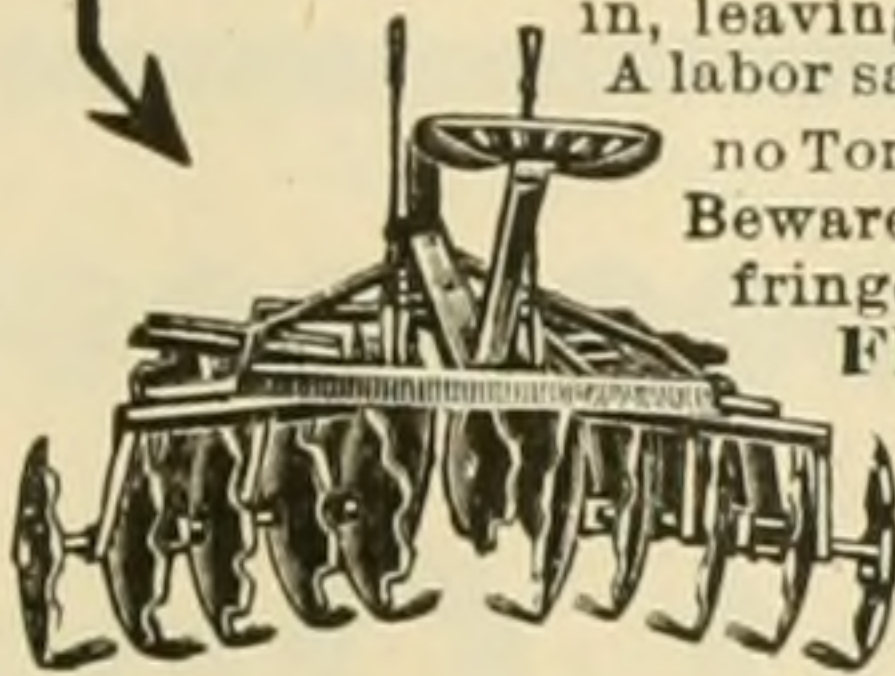


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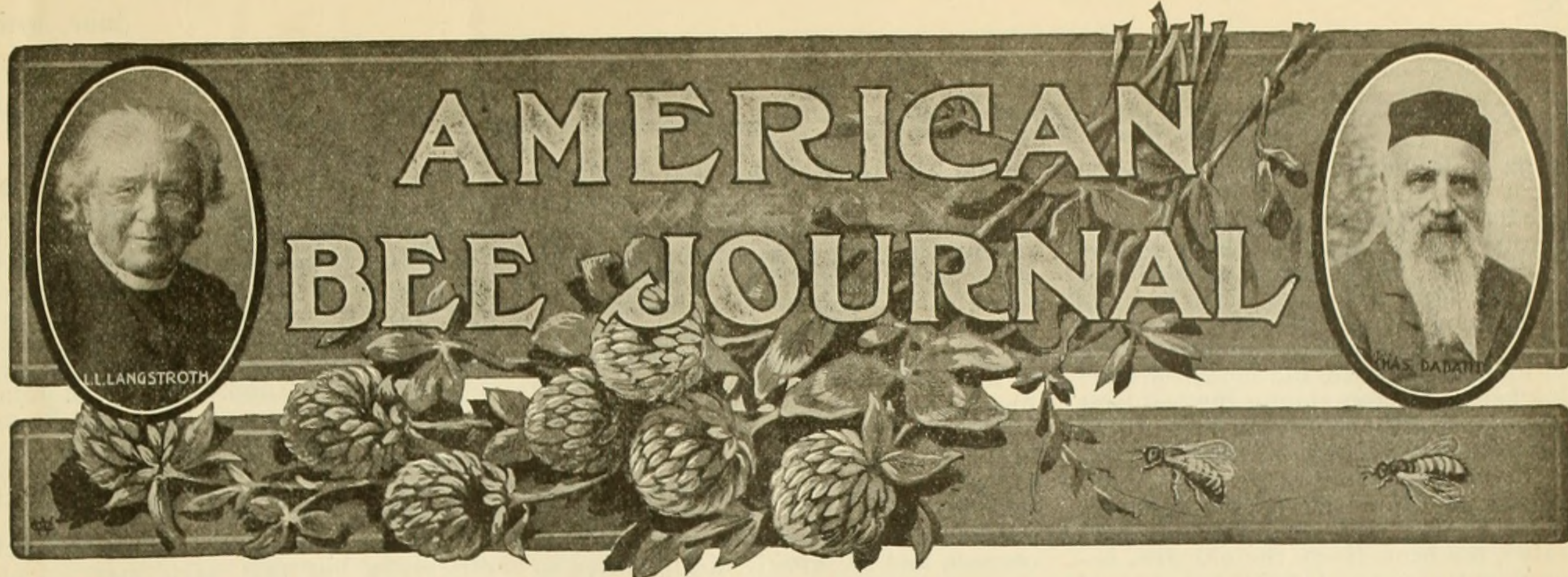
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GEORGE W. YORK, Editor.
DR. C. C. MILLER, Associate Editor.

CHICAGO, ILL., JUNE, 1910

Vol. L---No. 6

Editorial Notes and Comments

“*Nosema Apis*”—Is It a New Bee-Foe?

Under the title, “*Nosema Apis*—A New Bee-Foe,” in the November, 1909, issue, page 358, there appeared an editorial giving a brief resume of a report in the *Praktischer Wegweiser*, of the work of Dr. Enoch Zander on *Nosema apis*, a member of the animal kingdom which he finds in adult bees suffering from dysentery. He considers the organism as the cause of the diseased condition, and considers the disease infectious and a serious manace. The published accounts of this work have seemingly led many of our bee-keepers to be alarmed for the future of the industry, and to fear that this disease may be introduced into America. There is no cause for fear in the matter.

The disease with which Dr. Zander has evidently worked is our old friend and enemy Dysentery. He does not claim that this is a new disease, but rather that he has found the cause of the old one. We should be glad that the cause of a well-known disease is being investigated, rather than alarmed because a new name has appeared on the bee-keeping horizon.

Dysentery is a well known and readily prevented disease, which causes no great inconvenience to progressive bee-keepers. It is brought on by poor winter stores and long confinement in the hive. Honey-dew is a very common source of this trouble, and during the past winter, when it was so abundantly used for winter stores, dysentery caused heavy losses. The progressive bee-keeper, however, got the honey-dew away from the bees before cold weather set in, wintered on sugar syrup or good honey, and no dysentery appeared. A disease which we can predict, prevent and produce if we should so wish, is not likely to frighten progressive bee-keepers very much.

In the meantime, let us patiently wait until full knowledge of the new organ-

ism is obtained. We need not worry about the introduction of dysentery into America, for it is already here. Now that Dr. Zander has found *Nosema apis* in the intestines of diseased bees, dysentery does not thereby lose or gain any undesirable characters.

When to Put On Supers

To put supers over a colony much before they are needed is simply a waste of heat, and so, indirectly, a loss in the harvest. To leave them off till they are needed helps to bring on swarming, and this again interferes with the harvest. It is better, however, to put them on a week before they are needed than a day after.

The old rule was to give supers as soon as bits of white wax are seen on the upper part of the comb or on the top-bar. This is all right where swarming is desired, but otherwise rather late, for this extra wax is a sign of some crowding, and that induces swarming. It is better to have the supers on at least a few days before there is any danger of crowding. A little before the real honey-flow begins is all right. For example, in the North, where white clover grows, watch for the very first clover blossom that opens, and then, or within a week, give supers. The real flow from clover does not begin until about 10 days after a stray blossom opens here and there.

Honey vs. Sugar for Feeding

Is sugar as good for feeding bees as honey? That depends. Sometimes it is not so good: sometimes better. Let it be well understood that sugar and honey are not precisely the same. There are elements in honey that are not in sugar. Authorities tell us that young bees reared on sugar will be lacking in vitality, and those bee-keepers who empty all honey from the

brood-chamber replacing it with sugar may unwittingly be losing heavily thereby when they think they are gaining the difference between 20 or more pounds of honey and the same weight of sugar syrup.

On the face of it, it may look to some a very simple problem. Extract from the brood-combs 20 pounds of honey, sell it for 10 cents a pound, and you have \$2.00. Then feed back 20 pounds of sugar syrup at a cost of 70 cents, and you have \$1.30 for your trouble. But suppose the vitality of your bees the following spring be so much lessened that the colony shall store 13 pounds less of honey. You are then nothing ahead, and have no pay for your labor. Also, there is some danger that enfeebled vitality may become a permanent factor.

Sometimes, however, the brood-chamber is filled with honey-dew of such character that it means sure death to the colony before spring. In that case it is certainly better to extract and feed sugar.

Latterly, however, we are told that bees winter all right on part honey-dew. Perhaps if the matter be looked into closely, it may be found that it is even better to have part honey-dew than to have all sugar. For the sugar being fed last will be consumed first. Sugar is all right to keep up the heat of the colony when it is needed for that alone. If the sugar holds out till the bees fly daily, then they may take freely of the honey-dew without harm, and find it better than sugar for brood-rearing.

The important point is that plans should now be made to have on hand next spring plenty of good sealed honey for brood-rearing, so as not to have to depend upon sugar.

Double Shaking for Increase

Under the captivating title, “Making 100 percent increase, yet getting a full crop of honey,” is given in the *Bee-Keepers’ Review*, Leonard S. Griggs’ plan of honey-getting and swarm-prevention. As soon as any colony is found to have larvæ in queen-cells preparatory to swarming, the hive is taken from its stand and in its place is put a hive containing frames filled with

sheets of foundation, all but one frame which contains drawn comb that must have had brood reared in it at least one season. This comb is placed in the middle. The supers from the old hive are placed on the new. Then in front of the new hive the bees are shaken quite clean from all the combs in the old hive except two, the queen preferably being shaken among the last bees entering, so that she may not rush up into the super. Then the old hive with its frames of brood is placed behind and a little to one side of the new one. About a week later the shaking is repeated, the bees from the old hive being again shaken into the new, and from all the combs but two. Then the old hive is placed on a new stand and a young queen is given to it.

Answering the question, "Does the shaken swarm prepare to swarm again after receiving the additional shake of the week later?" Mr. Griggs says: "I would say about 5 percent have started queen-cells again; some about a week after the second shake and others toward the close of the swarming season."

By this method there is 100 percent increase, and Mr. Griggs thinks he gets as much honey as from a non-swarming colony. As to this last, not every one will agree with him, although the difference may not be so very great.

Why Bees Don't Work in Supers

The inexperienced bee-keeper is expected to ask as to this matter apparently with the notion that at a certain time all colonies, no matter what the circumstances or conditions, will begin to pour honey into the supers.

One reason may be that the colony is so weak that it has all it can do to keep up the supply for the brood-chamber, without troubling the supers.

Again, the brood-chamber may not be filled, and so long as there is any room there it is preferred to room in the supers.

If sections are in the super, the bees may be hesitating about commencing on the raw foundation, but will promptly begin if a bait-section is present; that is, a section drawn out, or partly drawn out, the previous year.

Again, the bees may be storing nothing in supers because they have nothing to store. Even though the bloom be abundant, there may be no nectar in it.

Foul Brood—American and European

There seems to be a constant tendency toward confusion as to the two kinds of foul brood, and those who say it would have been better to have retained the old nomenclature have some ground for saying so. There would be less danger of confusion, and it is certainly shorter to say foul brood and black brood than to say American foul brood and European foul brood. As the McEvoy treatment is successful with either disease, no harm will come from wrong naming if that treatment be applied. But when it comes to the Alexander treatment, the case is entirely different.

Whatever may be thought of the Alexander treatment, it should be dis-

tinctly kept in mind that it applies only to the treatment of European foul brood. Mr. Alexander insisted most strenuously that it was utterly without effect upon American foul brood. So a confusion in names may lead to serious results. A case in point occurs in the interesting report for 1909, issued to its members by the Illinois State Bee-Keepers' Association. In the report of the Chicago-Northwestern convention, page 132, is given in condensed form the Alexander treatment for *American* foul brood. An inexperienced bee-keeper might easily accept that as correct, and be bitterly disappointed in the result. Of course, European foul brood (black brood) was meant.

It may be worth while to give here a corrected copy of the condensed statement of the two forms of treatment given in the report:

MODIFIED ALEXANDER TREATMENT FOR EUROPEAN FOUL BROOD.

Make the colony *very strong*.
Remove the queen.
Ten days later destroy queen-cells and give a virgin of best stock.

MODIFIED MCEVOY TREATMENT FOR EUROPEAN FOUL BROOD.

Brush and remove all frames of brood but one.
Put beside that one two *empty* frames.
When eggs are found in one of the empty frames, remove the foul-brood comb and fill up with foundation.

Some days after the foregoing was written, we received the following on the subject mentioned in the above item, first paragraph:

DEAR MR. EDITOR:—Both Mr. Doolittle and Mr. Byer have complained of the terms "American Foul Brood" and "European Foul Brood," and yet they both keep on using them, whereas neither term has been accepted by the bee-keeping world, *nor likely to be*. The objections are these:

1. You cannot change a common name, such as "foul" brood or "black" brood, once established, *even if desirable*.
2. No change is necessary, or desirable.
3. The rule of priority holds good.
4. There are over 100 bee-papers in existence, and only two or three have attempted to make the change. There is not the slightest probability of the others making any such quixotic attempt; therefore, in the interest of science and of bee-keeping, it would be well for writers to drop the attempt and return to the *status quo ante*.
San Diego, Cal. W. K. MORRISON.

It certainly would be a good thing if all the bee-papers, at least those in the English language, would agree in the nomenclature referred to. "Foul brood" and "black brood" are very much simpler, just as clear, and have, besides, the advantage of several years' use.

Disinfecting Foul-Broody Hives

Another American fallacy has been exploded—namely, that respecting the uselessness of the disinfection of hives. The Swiss inspectors have also carried out experiments, and they have proved just the contrary. An instance is given of an apiary of 20 colonies, the bees of which had died out in the Bernese Oberland. The proprietor sold the hives to several bee-keepers in the neighborhood, and in every case where they were used the disease broke out.—*British Bee Journal*.

American bee-keepers are by no means a unit in believing it is unnecessary to disinfect a hive in which foul brood has dwelt. Some of them insist just as strongly upon disinfection as if they had spent their whole lives on British soil. The man, however, who thinks disinfection unnecessary will

hardly be satisfied with the mere statement that Swiss inspectors "have proved" disinfection necessary. He will say, "You've got to show me," and will ask *how* it was proved. As to the instance given, he will say, "I grant you that there may have been 20 cases of foul brood in hives that had previously contained foul brood. And I can point you to 20 cases in new hives that by no possibility could have previously contained foul brood. Where is your proof that the hive had anything to do with it in either case?"

Perhaps it does not make so much difference but that each may go his own way. The one will say, "Thousands of infected hives have been safely used; so it is certain that disinfection is not always necessary, and the cases of carrying the disease are so few that it is cheaper to treat again the few cases that occur than to be to the trouble of disinfecting all hives." The other will say, "It is not much trouble to disinfect a hive, and I believe it is best to be on the safe side."

Ohio Foul-Brood Law

Ohio bee-keepers are rejoicing because their foul-brood law has passed both houses of the legislature, but are still on tenter-hooks lest the governor veto it. There seem to be good grounds for their fears, from the fact that lately the governor of New Jersey vetoed a similar bill after it had passed the legislature, and some time ago the governor of Missouri did the same thing. It would be a good thing to have prepared a special course of instruction for governors, that they might be coached in advance.

Foul Brood Law in New Zealand

Bee-keepers in New Zealand are feeling quite encouraged with the workings of their new foul-brood law. Keepers of bees in box-hives at first thought it a hardship and an interference with their rights to be obliged to put all their bees into movable-frame hives, and some of them thought there was no need to submit to such a law. But Mr. W. B. Bray, the energetic inspector, had two of them fined for failure to transfer their colonies into hives with movable frames after having written notice served upon them, and this has caused a change of mind. Very likely the box-hive men will all come to look upon the law as a blessing in disguise.

Reserve Combs of Honey for Feeding

Not many pieces of advice can be given of more value than the advice to have on hand some extra combs sealed full of honey, ready to be given in the spring or early summer wherever needed. Not only does the beginner need the advice—there are no doubt those who have been keeping bees for years that do not fully realize its importance.

It takes a long time to learn with what rapidity stores are used in the early part of the season, when colonies are building up, with combs filled with brood that require a big lot of feeding, when perhaps little or nothing is being

brought in from outside. If stores run short, there is a let-up in brood-rearing, and it may even go so far that the white skins of larvæ may be found thrown out at the entrance, their juices having been sucked out by the bees. The result upon the honey crop is the same as if right in the midst of the flow a large number of bees were poisoned.

In white-clover regions there may come a period of starvation even after clover is in bloom, either because of inclement weather or because the bloom yields no nectar.

To meet the case there is nothing so good as a frame of honey entirely filled and entirely sealed. It is too late now to advise those who may be short at the beginning of this season, but it is perhaps the best time now to urge readiness for the spring of 1911. If you have 8-frame hives, you will do well to lay your plans to have at least 2 extra combs of honey for each colony. Larger hives are likely to have a larger supply, with less danger of running short.

Just what is the best way to secure these extra frames of honey is a question for each one to decide for himself; the present desire is simply to urge that the matter be not overlooked, but planned for in advance—planned for now. For some it may be best to have a colony or colonies—according to the number of colonies to be provided for—entirely devoted to filling up these extra combs. A colony that spends the entire season filling such combs will need very little care. Just before there is any danger of swarming, put all the brood but one in an upper story, leaving in the lower story the queen and one of the poorest frames of brood, with a queen-excluder between the two stories. The vacancies in each story will of course be filled out with drawn combs or frames filled with foundation. This is the Demaree plan, and with many it acts as an entire preventive against swarming. As the brood hatches out in the upper story the vacant cells will be filled with honey. But before there is any danger that the surplus room shall be filled an additional story must always be given. To make still more sure against swarming, allow ventilation between each two stories by shoving forward or back the upper story, so as to leave an open space of $\frac{1}{4}$ of an inch.

Some who count on a late flow of fall honey may secure filled frames at that time. Others may be able throughout the season to secure a frame here and there. Perhaps a nucleus may have a comb too much crowded with honey. These frames from different places may be assembled over a colony whose business it shall be to complete the job by filling the combs plump full.

Whatever plan may be adopted, plan now to have a stock of extra combs of honey for next spring.

Painting Hives

In the British Bee Journal is the following paragraphs written by D. M. Macdonald:

Congratulations to the American Bee Journal on attaining its "Golden Jubilee Year!" The associate editor (page 6) does not paint his hives! I would have all hives painted,

for one or all of the following, amongst other, reasons:

1. They look ever so much better painted. The senior editor is a man of æsthetic taste, and adorns the front cover of each issue of the American Bee Journal.

2. Painting preserves the wood.

3. In this way the existence of the hive is doubled or quadrupled.

4. Suitable painting keeps the interior of the hive warmer in winter.

5. It keeps it cooler in summer.

6. It hinders cracks and faults in the wood from developing.

For these reasons driving rain and melting snow are repelled from the wood, or at least it does not absorb the moisture readily.

Therefore, Doctor, the moisture from outside does not penetrate to the interior. You are a prohibitionist, I am a temperance advocate. We both aim at keeping moisture (drink) outside! Inside it works evil, outside it can do no harm. So with moisture in the hive. But, you will say, moisture is generated in the hive. Yes; that is so. But we never should think of letting it find its way out through the wood. That process would be slow, tedious, uncertain, and at best but partial. Our absorbent packing, while it conserves the internal heat, allows a mild, gentle "percolation" upward, and this is still further aided by the span-roof, all but universal in this country, affording an open space above the packing, and by the ventilating holes back and front allowing of the quick evaporation of the moisture.

Thanks, Mr. Macdonald, for my little share in the congratulations.

After giving some study to your 6 points, I incline to advise you—in case you should want my advice—to paint your hives. But some things appeal to you that do not appeal with the same force to me, as you will see by taking up your points seriatim.

1. I entirely agree with you as to the matter of looks, and as to the taste of the senior editor. If as many people looked upon my hives as look upon

that well adorned first cover, you may be sure they would be painted, if not polished. But my hives are rarely seen by any one except those at work at them (I've no doubt it's different with you), and while at work I see only the inside, and when through work I can have more æsthetic enjoyment in 5 minutes looking at the roses and natural scenery than in looking at painted hives all day.

2. I agree: it preserves the wood, but not the bees in winter. And painting costs, too.

3. Whether it doubles the existence or not, don't you think you are doubling the argument in No. 2?

4. Yes, and moisture.

5. Sometimes not. Evaporation is a cooling process, and more moisture evaporates through the unpainted than through the painted wall.

6. In this case you are the prohibitionist, for you want to prohibit entirely the moisture from penetrating from the outside. And it is all right for you, for your absorbents (if a thoroughfare may be called an absorbent) provide escape for moisture. But I have no absorbents. "Get them?" No, thank you, unpainted walls are cheaper and less trouble.

Now I admit the force of your arguments as applied to your own case (really No. 1 is argument enough of itself), so you have my cordial permission to wield the brush to your heart's content; and if you could find it in your heart to write out a permit for me to use my hives without paint, I would appreciate the favor. C. C. M.

Miscellaneous News-Items

The National at Albany, N. Y.

It has been definitely decided by the Executive Committee, that the 1910 meeting of the National Bee-Keepers' Association will be held at Albany, N. Y. The exact date has not yet been fixed, but probably about the middle of October would suit most of those who would go. We hope to be able to announce the date next month.

Nebraska Fair Premium List

We have received the premium list of the Nebraska State Fair for 1910, to be held at Lincoln, Sept. 5 to 9. The premiums offered on exhibits of bees, honey, etc., amount to over \$200 in cash and about \$100 in miscellaneous articles. They surely ought to bring out a large display. Mr. E. Whitcomb, of Friend, Nebr., is the Superintendent, who in past years has made the Apicultural Department of the Nebraska Fair such a great success. Nebraska bee-keepers should unite in making the exhibit at their next September Fair the largest and best ever shown. Write to Mr. Whitcomb for a copy of the premium list, if in Nebraska, and help in making a display in the bee and honey department worthy of Nebraska beedom.

Report on Maryland Bee-Keeping

We have received No. 3. Vol. VI, of the Maryland Agricultural College Bulletin, which contains the second Annual Report of the Maryland State Bee-Keepers' Association. It is an illustrated pamphlet containing 72 pages, and is very nicely gotten up. Every bee-keeper in Maryland should have a copy of this Report, which, no doubt, can be had by addressing Thos. B. Symons, College Park, Md., who is the Secretary of the Association.

"The Home of 'Beeware'"

Last month we mentioned our visit to the G. B. Lewis Company at Watertown, Wis., and promised to have something more to say about it in this issue of the American Bee Journal. Their massive new plant is located only a few blocks from the old one, which was destroyed by fire in June, 1909. We want to say that there is no better indication of American thrift and enterprise than is found in this new plant of the G. B. Lewis Company, which affords a floor space of over 40,000 feet, and covers nearly 6 acres of ground. Fig. 1 shows the main factory, which is operated entirely by electricity. In addition to this are the warehouses,

lumber-sheds, main office-building and lumber yard, with a piling space for 2,000,000 feet of lumber.

More wonderful is the fact that this splendid monument to untiring effort and progress has sprung up from a

large, a splendid hammer would be put in without extra charge.

The G. B. Lewis Company have been manufacturing Lewis Beeware for 35 years. Their employees have been trained in the making of the perfect

of whom produce honey by the ton. This product has a national reputation, and not only sells all over the United States, but in all parts of the Globe, and is known as the "Beeware Brand."

It is very rare in beedom that a factory which has been burned to the ground has been rebuilt so quickly, so completely and on so large a scale as has been the case with that of the G. B. Lewis Company. In view of this we feel it is well worthy of special mention and description. We are always glad to help along a deserving institution, especially if that institution is really run in the interest of bee-keeping in general, and conducted on right principles. We know this applies to "The Home of Beeware," for we have been acquainted with the G. B. Lewis Company for over 25 years, and have yet to hear of anything unfavorable concerning them or the goods they manufacture and send out to the bee-keeping world.

Indiana Bee-Inspection Work

We have received from Benjamin W. Douglass, of Indianapolis, Ind., who is the State Entomologist, his second Annual Report, covering 1908-1909. The volume consists of 248 pages, is cloth-bound, and most beautifully printed and illustrated. The bee-inspection work is written by George S. Demuth, Assistant in charge of the Division of Apiculture, and covers 40 pages. No doubt, a copy of this interesting book can be had by applying to Mr. Doug-



FIG. 1.—MAIN OPERATING PLANT OF G. B. LEWIS COMPANY, WATERTOWN, WIS.

mass of charred ruins in but a few months. Now while the bees are working industriously in the fields, the wheels of the new Lewis plant are turning day and night to supply the demand for bee-goods, which has been coming in from all sides. To meet this demand it has been necessary to operate the plant day and night, with a working force of over 100 hands on bee-hives and parts, as well as sections, at a weekly pay-roll of over \$1000. This gives a daily output of hundreds of hives and over 100,000 sections. The average consumption of lumber is over 20,000 feet per day, the planing of which alone produces several tons of shavings, which are mechanically baled and sold in the market by the carload.

This plant has one-half mile of private railroad track, so that the raw material can be hauled to its door and be taken away in the shape of the finished product without unnecessary delay and cartage.

One novel feature of this new plant is Superintendent L. W. Parks' office, shown in Fig. 2. It is suspended between the steel trusses of the operating plant, about 10 feet from the floor, and through the large windows an excellent view of all the interior parts of the factory is obtained. The superintendent is thus able to attend to his desk-work and at the same time keep in constant actual touch with all work in the factory.

I was not only told, but could really see, when visiting this plant, that Lewis Beeware has now reached such a state of perfection that it is in reality "K. D. Furniture." The parts are all accurately made of the very finest clear, white, lumber; all parts very carefully fitted, so that when they are received no operation to make them fit is necessary other than the putting together. In fact, everything required for the setting up of the hive but the hammer is sent right along with the goods. And we doubt not if the order were sufficiently

article, constantly keeping watch over all the machinery, which is strictly modern and up to date, and, in fact, the very best that American skill can produce for the making of bee-supplies. In this way the out-put is kept up to the standard. Since the Lewis plant was in its infancy the best materials

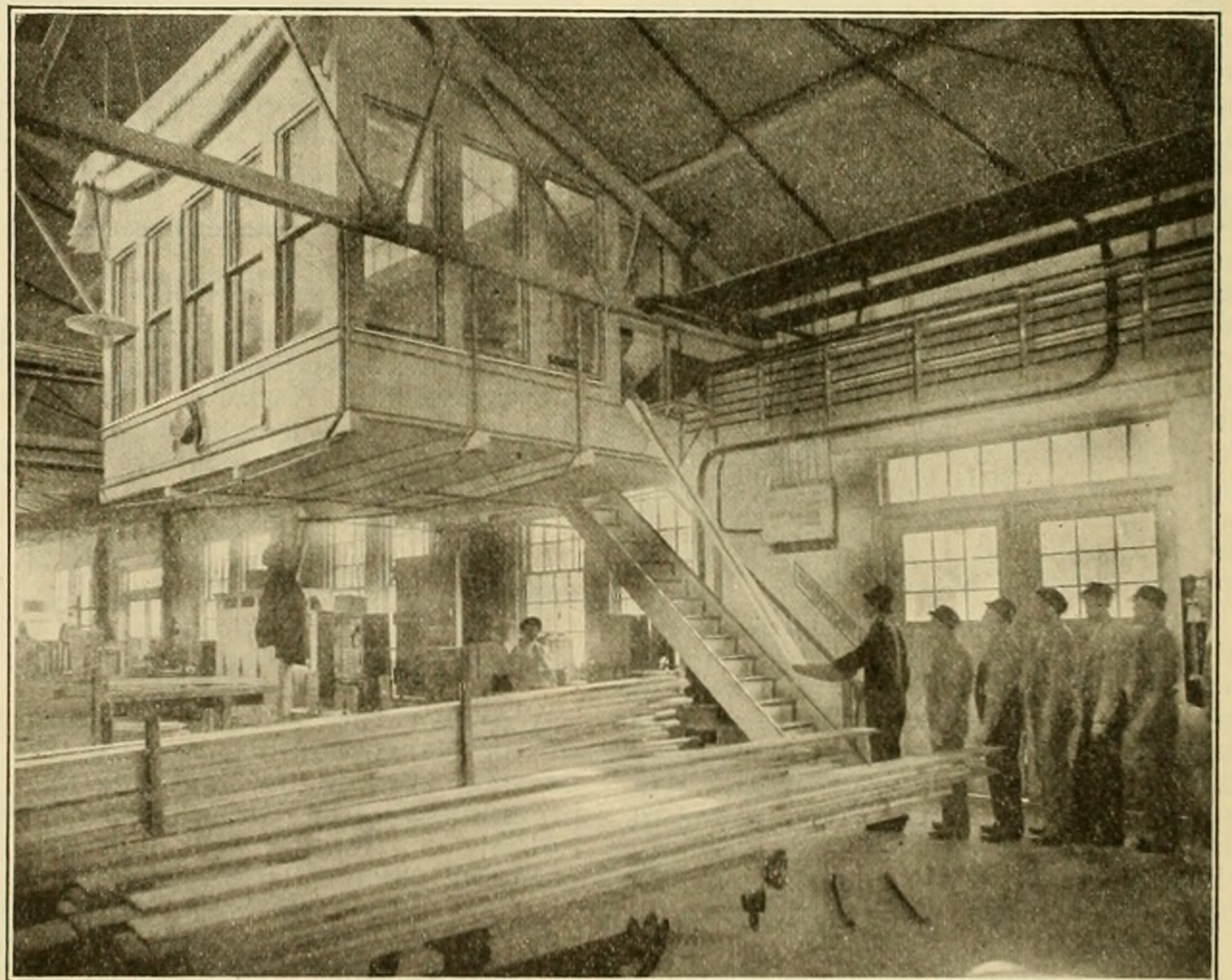


FIG. 2.—SUPERINTENDENT'S OFFICE IN INTERIOR MAIN OPERATING PLANT OF G. B. LEWIS COMPANY—PAY DAY.

have always gone into the manufacture of Lewis Beeware, and during all the years of its commercial life the quality has never been sacrificed. To this is undoubtedly due the fact that Lewis Beeware is now used by the most successful bee-men in the country, many

lass. Every bee-keeper in Indiana ought to have a copy of it.

When forwarding to us the copy of the Report referred to above, Mr. Douglass wrote as follows:

EDITOR AMERICAN BEE JOURNAL.

Dear Sir:—I am sending you, under sep-

arate cover, a copy of my last Annual Report, which gives an account of the Indiana bee-inspection law, and of our first summer's experience with it. We are very much pleased with the way in which this statute is working out. The law is planned so as to cost the State the minimum amount and still do efficient work. The bee-inspectors are men competent in both bee-work and orchard work, and are accordingly employed for the entire year. When not engaged in the actual work of bee-inspection they devote their time to our regular inspection work in the orchards of the State. This renders unnecessary a separate apiary department whose inspectors would be idle a great portion of the year. As a result, I think we are securing more competent bee-inspection for less money than any other State in the Union.

The work of last season as reviewed in the Report speaks for itself.

Respectfully,

BENJAMIN W. DOUGLASS,
State Entomologist.

Indianapolis, Ind., May 18.

Sections Made of Paper

We have received the following from one of our readers in Quincy, Ill.:

All know that the price of sections is getting higher every year, and basswood is fast disappearing in some localities. It is strange that some of our bee-supply manufacturers have not as yet tried making sections out of paper. We have berry-boxes made of paper, and they are cheaper than, and just as strong as, the wooden ones. I wonder why a section could not be made with wire strung through the paper to help support it. I think they could be made just as strong as the wooden ones. I should like to know if paper sections have ever been tried.

SUBSCRIBER.

We believe that a bee-keeper in Michigan experimented with heavy card-board made into sections, and he seemed to think that it was a success. Perhaps he will be kind enough to tell us something about this experiment with paper sections. It would seem, at first thought, that paper sections would be cheaper than wooden ones. Perhaps some manufacturer will be kind enough to experiment in making them, and report.

Our Front-Page Pictures

The first picture is referred to on page 198 by Mr. Adams, and the second one is described as follows:

APIARY OF JOHN ALBERT, JR.

I am sending a picture of a part of my apiary. It contains 40 colonies of Italian bees—my favorites. The strongest colonies are run for comb honey, while the weaker ones are for extracted honey.

Our main honey-flows are white clover and heartsease, although heartsease is the more important. Heartsease honey sells better than the clover honey in this locality.

The honey-flow last year was almost a complete failure. It was necessary to feed some of the colonies. Prospects for a good clover flow for this year are excellent.

Wahoo, Nebr.

JOHN ALBERT, JR.

A New Bee-Book

The Macmillan Co., of New York, N. Y., have just issued a book written by D. Everett Lyon, which bears the attractive title, "How to Keep Bees for Profit." It has 329 pages, measuring 7½x5 inches, with clear print from large type. The usual topics discussed in text-books on bee-keeping are found in this work, although necessarily with greater briefness, as it contains less than a fourth as much matter as the leading bee-books.

The work is written in easy style. Unfortunately it is sometimes more readable than reliable. In the chapter

"How to Make Increase," the reader is advised that about the last of April, if the weather permits, and honey is coming in rapidly, a good, strong 10-frame colony of bees may be increased to 5 colonies by dividing into 5 parts and furnishing each part with a queen, and then the author says:

"If you desire to increase one colony up to 10, the method of procedure is identically the same, and differs only in that you give each empty hive but one frame of bees and brood instead of two."

In the North, even supposing that each of the frames were filled with brood, a single frame of brood and bees in a hive in April would have a hard time of it to struggle through until warmer weather.

The author favors Italian bees for the beginner, especially of the red-clover strain; for comb honey, the Danzenbaker hive or other shallow hive; and says: "By all means winter outdoors."

Although this book can not take the place of any of the excellent text-books on bee-keeping already so extensively in use, it adds one more to the constantly increasing number of works on this fascinating subject. It is bound in cloth, and sells for \$1.50, with 16 cents extra for postage. We club it with the American Bee Journal one year—both for \$2.20. Send all orders to the office of the American Bee Journal, 146 W. Superior St., Chicago, Ill.

Tale of a Bee

A boy met a bee in the clover,
And bothered the spry little rover,
The bee grew mad and then madder—
And the youth is now wiser and sadder.
—Selected.

National's Membership Growing

The last report from General Manager France showed a membership of 3837 in the National Bee-Keepers' Association. So it should soon be an even 4000. We had hoped that it might reach 5000 by the time of the next National convention, and still feel encouraged that it may. But perhaps it would be well to make it 4000 first.

Our Bee-Keeping Sisters

Conducted by EMMA M. WILSON, Marengo, Ill.

Bees Wintered Splendidly at Marengo— The Unusual Spring

Last fall we took our bees into the cellar Nov. 18. The weather was very mild until Dec. 6, the thermometer going as high as 67 degrees, and it did seem almost too bad to have them in the cellar when they could be having such good flights, but we were very glad they were there when on the 8th of December we had a heavy snow-storm, and never saw bare ground again until March. They wintered splendidly, and we took them out of the cellar March 21, strong and vigorous, never in better condition. We had some misgivings as to what the weather might be, but never in all our bee-keeping experience have we had ideal

Do Bees Steal Eggs?

It is hard for one to believe that bees will deliberately enter another hive and carry away eggs from which to rear a queen. But M. T. Pritchard, the man who with the aid of a boy reared nearly 3000 queens in one season, reports, in *Gleanings*, a number of cases that seem to leave no room for doubt. He says:

In the early part of the season of 1906 we had trouble with our queenless colonies used for grafting. Nearly every day we found cells started with either eggs or young larvæ in them, resulting in the bees refusing to accept the grafted cell given to them. This we could not account for, as these colonies are not used to graft into until 5 or 6 days after they are made queenless. Occasionally one of these cells would be overlooked and a virgin hatch, each of which proved to be a *black* virgin.

All colonies in the yard were Italians with tested Italian queens except one. This was a fine imported Carniolan queen kept in a very weak colony to prevent her from rearing any drones; consequently we concluded that the queenless bees were stealing eggs from the Carniolan colony; and to test it we saved several of these cells and hatched them, and found that each one produced a typical Carniolan virgin. We then removed the Carniolan colony from the yard, and had very little trouble with natural cells from that time.

Our theory is that the Carniolan colony being light, or from some other reason, did not defend its entrance as well as the other colonies, and the queenless bees found it an easy place to steal eggs.

A Bear Correction

On page 155 there was an item in "Canadian Beedom" headed, "Not Byer's Bear." Mr. J. M. Wismer, who wrote the letter in which the error occurred, says that the original in his scrap-book reads as follows: "Somewhere in the 70's the writer had been privileged to take a night's lodging with a friend in J. L. Byer's neighborhood, who owned a large brown bear." It seems that the way we published it, the bear was owned by Mr. J. L. Byer, who conducts the "Canadian Beedom." He never was a bear conductor or owner. We are glad to make the correction, as we do not wish to bear down too hard on Mr. Beyer, for, if we remember correctly, he is already becoming a little bare on top!

weather for bees to build up as was the rest of March and the first half of April. They just boomed.

We overhauled most of our bees in March. We found them fully a month ahead of any previous year. Full, healthy frames of brood never looked so good before.

Then when pears, plums, cherries, and apples were in full bloom—each tree a bower of beauty—came our freeze. The thermometer at 21 degrees and the ground covered with snow. Oh, such desolation! It made one shiver to look at the poor fruit-trees. We had a long cold, wet spell—very trying weather for bees—and had it come earlier it would no doubt have been very bad for them; but the fine start they had, had made them strong

enough to stand the test. We did not lose a single colony, and the middle of May found all strong enough for supers. But continued cold days with but little chance for flight, caused some let-up in brood-rearing.

The first white clover blossom was seen May 18th—earlier than ever before. That means bees will begin storing from the abundant lay-out of clover May 28—if there is any nectar in the clover. Will dandelions continue until that time?

Apple and Honey Drink

Praktischer Wegweiser gives a recipe for a preparation that is said to be an excellent remedy for a cough or cold. One would judge that it has at least the recommendation that it is not hard to take. It is as follows:

Cut up 6 ripe apples without paring, and pour over them a quart of boiling water. Cover, and let stand for a day. Pour off the liquid, add the juice of 1 to 3 lemons, and sweeten to taste with honey.

Poor Season in 1909—Stealing Honey

Although the year 1909 did not prove a success financially, I made enough from the sale of the poor honey the bees worked so hard to find, to pay for 5 colonies of bees, and keep John in honey, which he dearly loves to spread thickly on his pancakes mornings. It was a bad season for people as well as bees. I hope that 1910 will be a success. We bid good-bye to the failure of 1909.

I enjoyed a laughable experience last season. One hot day in July, as we were eating dinner, I heard screams from the direction of the apiary. Running out, I saw a man who was cutting brush across the road, striking at a small boy with a brush, and the boy was yelling, "They have stung me again!" I put on my bee-dress, grabbed the ammonia bottle, and ran to the road. I said, "You were after my honey." He replied, "George said to lift up the lid and get some honey." George was getting badly stung, too. I told him to run out through the field of growing corn and the bees would leave him, which he did.

The little boy was badly stung, and will never try to steal any more honey. His father said he was afraid of a black fly now.

IMA.

Ohio.

Bees Killing Each Other—Sulphur Treatment for Bee-Paralysis

I have 2 old colonies of bees. In 1908 I bought one colony of pure Italians with a tested queen. Last year I took 72 pounds of fine comb honey and got one fine swarm, both of which are very strong, but they have been killing each other all winter, and still keep it up; one colony has lost 2 good swarms, the other one. The new ones are killing each other just the same. Others in the neighborhood are complaining of the same trouble. What causes it?

MRS. F. L. STEPHENS.

Mart, Tex., April 29.

It sounds a little like robbing, but robbing would hardly be so long continued, and so general. It may be bee-paralysis, the bees dragging out the diseased members. If it is paralysis the affected bees will shake their wings in a trembling manner, and have a black, shiny appearance.

Many cures have been reported only to fail when tried again. Perhaps the most hopeful treatment is that used by Mr. O. O. Poppleton, who has had much experience with the disease. It is given in the "A B C and X Y Z of Bee Culture." One plan that he uses is as follows:

He sprinkles sulphur over the affected bees and combs, but not until all the brood in the diseased colony has been removed and put into a strong, healthy one; for Mr. Poppleton says the sulphur kills all the unsealed brood and eggs; that no harm results in putting the brood among healthy bees, as he finds the source of the malady is not in the brood or combs, for he has put combs from paralytic colonies repeatedly into healthy ones, and never (but once) did the disease develop in any such colony, and that was a year afterward.

Another plan is this: He forms as many nuclei from strong, healthy colonies as there are sick colonies to be treated. As soon as the nuclei have young laying queens, he gives to each, as fast as they can take care of them, one or two frames of the oldest capped brood from each of the paralytic colonies, and thereafter till all the brood of such colonies is used up. The diseased bees and queen he next destroys with sulphur fumes, fumigating the hives at the same time.

A Little Bee-Sister—Honey Crop Almost a Failure in 1909

Honey here was almost a failure last year. My average per colony in comb for 1908 was 130 pounds; for 1909 40 pounds. I am sending you a picture



MISS LUCILE JOHNSON.

of my little girl, Lucile Johnson, 10 years old, handling the Caucasians. She has helped me in the work for two seasons, and has never had a veil on.

I can't do without the American Bee

Journal. I consider "Dr. Miller's Question-Box" alone is worth all it costs.

Keokuk Co., Iowa. M. D. JOHNSON.

Why Did Bees Die?—Using Hives Where Bees Died in Winter

I had 4 colonies of bees last fall; I have only 2 now. The ones which died seemed weak. I could not find any queen-cells in one (last year's swarm), and no queen in the other one (2 years old). The hives were very full of honey, and they seemed to be very clean. What was the trouble?

The 2 colonies are very busy, all young and healthy. What time ought I to uncover the bees for the summer work?

The fruit-trees have been full of bloom, but the heavy frost destroyed them. Will there be plenty of white clover this year?

Can we use the frames of the hive we have from the colony that died, or will it be better to start with a fresh, new box-hive?

Can we get a colony of bees to stay in a hive where other bees have been, if we wash it thoroughly with salt and water?

MRS. E. P. DAY.

Bloomington, Ill., April 27.

It is impossible to say why the 2 colonies died. Queenlessness may have been the trouble; they may have died because so weak; or there may have been some other trouble.

When bees are wintered outdoors, if there is no danger of their running short of stores, it is just as well to leave the covering on until nearly time to put on sections, or until white clover begins to bloom.

The prospect for a white clover crop this year is very good.

By all means use the old frames and hives. They are very valuable. Of course, if the bees died of foul brood or any infectious disease, then they should not be used again; but probably there is no such trouble with your bees.

If hive and combs are clean, a swarm will prefer them to anything new. There is no need to use salt water or anything else if they are clean. If dirty, wash with clear water. When a swarm is hived, either in new or old hives, if a frame of brood is given it will make the bees more sure to stay.

End-Spaced Frames—Top-Bar Thickness

Miss Mathilde Candler says in the Bee-Keepers' Review:

Some time ago I sent for some Langstroth brood-frames. They shipped me the short top-bar variety. I do not like these, as I do not want spacers in the frames, and without spacers they slip down in whenever I tip the hive. I tried lengthening the top-bar, by driving a staple in the end; but gradually the staple will work down into the wood.

Nor do I think it necessary that the top-bar should be so heavy. I have a few frames with top-bar only $\frac{7}{8} \times \frac{3}{8}$, and they seem to be every bit as good as those with a heavy top-bar. Yet I do think $\frac{3}{8}$ -inch a bit light, and would prefer to be on the safe side and have them a little thicker. [7-16 suits me.—EDITOR.]

It would be interesting to know just why so practical a sister as Miss Candler objects to spacers at the ends of frames. Of course a short top-bar without them is utterly out of the question, for that would allow the frames to be constantly dropping down. Even with the spacers some have complained of the frames dropping down, but that must be because there is some fault in the construction of the hives, for in this locality there is never any trouble, although such frames entirely have

been in use for years, and we would dislike very much to go back to the long top-bars. Miss Candler tried lengthening the short top-bars by driving staples into the end of them. Is it perhaps just possible that she tried the staples in no other way? We have them driven into the end-bars, close up against the top-bars. The grain of the wood runs there in such direction that the staple will not gradually be driven in as it will in the top-bar.

The difference between Editor Hutchinson's 7-16 top-bar and the $\frac{3}{8}$ bar is

only 1-16. Either one works all right for a time; most of them for always. But in the course of time some of them will sag, and sag badly; at least the $\frac{3}{8}$ ones will, for we had more than 2000 of them years ago. Even if they should never sag, we prefer the thicker top-bars ($\frac{7}{8}$) for the sake of the whiter sections where they are thus made farther from the brood-combs. For extracted honey the case is different. But we had to have excluders or honey-boards with the thin top-bars, and that's reason enough against them.

80 more to clip, so if I had 2 warm days I could get on top again. Then I have about 2 weeks' inspection work mapped out—about a dozen people wanting me to come to their places all at the same time. But there is no use in worrying over what cannot be helped, so I will just do the best I can, and let go undone what I cannot do.

[No, Mr. Byer didn't put that heading on the above item. But it seems to fit him all right.—EDITOR.]

Canadian Beedom

Conducted by J. L. BYER, Mount Joy, Ontario, Canada.

The Cold, Backward Spring

The weather pessimist now has his innings, and can say, "I told you so," to his heart's content. During all the balmy weather we had during March and the forepart of April, of course the usual prophets were around trying to spoil our enjoyment of the lovely days by telling us that we would "pay up for this in May," and for once at least their gloomy forebodings have come true.

Since April 20 we have had very cool weather all the time, with torrential rains for the first half of this period. The result is that instead of a very early season, as spoken of in my last bunch of notes, with apple-blossoms likely to open by May 1st, here it is May 18th and only the early varieties, such as the Duchess, showing open bloom.

Very strong colonies have kept us from the necessity of doing much feeding, as whenever the bees get an hour or two they can work, they carry in enough to keep them going. At this date (May 18) I venture to say that there is not 500 pounds of old honey in the 300 colonies, yet so far I have fed but 300 pounds of sugar. The colonies were all very heavy last fall, but the early warm weather, with heavy breeding as a consequence, explains matters. Naturally I am in hopes that the weather will clear off in time for the bees to get some honey from the apple-bloom, to carry them along till the clover opens.

During all this cool weather we have had but very few frosts, and as the fruit-bloom was not advanced far enough, very little if any damage has been done. Judging from reports from some of the middle West and Northern States, those sections have not been so fortunate in this respect.

Temper of Bees—Carni-Italians the Best

It is, I believe, generally conceded that the temper of the worker-bee is inherited from the male parent; in other words, a queen bred from a cross colony and then mated with a drone from a very quiet colony, will produce quiet bees. While I have been aware of this teaching for some time, yet I never, till this spring, have seen how

forcibly true this rule works out in practice.

Two years ago two dozen Carniolans were introduced in an apiary where the black blood previously was, if anything, in the majority. This spring a number of the Carniolans have been superseded, and in a few cases the young queens have met black drones, the worker-bees showing this by their color and *temper*, as they are decidedly ugly—much worse than the pure black colonies. On the other hand, a number of the black queens have been superseded, too, and on opening the hives of these colonies it was a happy surprise to find that the young queens had met Carniolans, and that the worker-bees were very quiet, most of them being marked so that I could destroy the old queens on account of the bees being so ugly, and now the bees in these same hives are among the gentlest in the yard.

Fortunately, but few of the Carniolans met black drones, and it will be noticed that the Carniolans will more than hold their own in this respect, as the drones seem to be very powerful on the wing, and, as a rule, a large percentage of queens reared in a yard where there are some Carniolans, will be found to have met drones of this race of bees.

Some of the best bees I have ever owned, all things considered, have been bred from Italian queens that have mated with Carniolan drones, and if I were asked what is the "best bee," I certainly would say the first cross of Italian queens with Carniolan drones. Unfortunately the next crosses are not nearly so uniform in good points as is this first cross.

That Busy Bee-Man Byer

The weather continues *very* backward, and apple-blossoms are just ready to open, having been held in the bud for 4 weeks.

Bees are very strong, but the weather is so bad that I cannot get queens clipped and supers on. When we do get a few warm hours (not days) we have to get such a hustle on that it is certainly nerve racking. Among my 300 colonies, at least 250 are ready for supers now—have 125 on now.

I have clipped 220 queens, and have

The Balling of Queens

Just what causes some bees, sometimes, to ball their queens on the slightest disturbance of the hives has always been a question to me, and this spring the matter has been brought to my mind again in a forcible manner. Owing to the cold, backward weather we have had all through May, it has been a difficult matter to get all the queens clipped and supers put on previous to my going away on some inspection work that was imperative. As a consequence, we have been opening brood-nests when the weather was hardly fit for the purpose, and at times when little nectar was coming in.

In 3 or 4 different colonies a few bees were noticed running after the queen, some of them clinging to her, and in one case, after taking all the frames out and looking them over, a glance at the bottom of the hive revealed a ball of bees about as large as a walnut. The queen was released, and after a while let go on a comb on the opposite side of the hive, but yesterday, being at the yard again, I looked at the entrance, and sure enough there was the dead queen. Now this colony was a very gentle one of Carniolans, not at all excitable, and when the hive was open the bees were quietly sitting on the combs, paying very little attention to anything.

Former experiences with queens being balled, has generally, if not always, been noticed in colonies very much excited, with the bees running in every direction, as is common in the blacks or hybrids if they get in a panic from having too much smoke given them, or from other causes.

In watching the actions of the few colonies that were so foolishly solicitous of the queen's welfare, I was reminded of that work entitled, "Are Bees Reflex Machines?" as all the bees in the hive would seem to be actuated by a common desire over which they have no control.

If the queen that was receiving such undue attention on the part of her subjects happened to be on the side of the hive, the same nervous demonstrations on the part of the bees would be seen if she was removed to the opposite side. In brief, the bees seemed to be a unit, so to speak, and in some mysterious manner the same fear of losing their queen seemed common to the whole crowd. How such a condition is made possible among many thousands of bees in a simultaneous manner seems a great mystery, and it would seem that they have some means of communication that we mortals do not understand.

All have noticed the peculiar "home

is found" hum when bees are contentedly entering into a hive after having swarmed, and even in a more pronounced manner is the hopeless, queenless hum noticeable in a colony that has just lost its queen—is it possible that they have also a call that sounds a warning to all the bees in the hive that the queen is in danger? It looks very much like it, and more's the pity that they do not take more sensible measures to protect her in her peril, fancied or otherwise, than simply to embrace and smother her to death.

In the event of the queen being released before death ensues, why is it that she is generally useless afterwards, as is nearly always the case, according to what I have learned from others, coupled with a few experiences of my own.

Three years ago at the Altona yard I had a queen in one of my best colonies balled, and although she was released

in less than half a minute after being attacked, and safely introduced that evening again, yet the queen laid only a few eggs afterwards, and was superseded in 2 or 3 weeks. She was not stung, in so far as I could see, but in some way she had been injured, and, if I am correct, what happened to that queen after being balled is the common lot of other queens thus treated.

I have always been very much adverse to opening hives during unfavorable weather, particularly in the spring, and the results of this spring's work during such weather only serves to intensify my feelings on that line.

Let me repeat once more what I have often said before, that early spring manipulation of the hives causes the death of many valuable queens each spring. This advice is of course only for beginners—others have learned the truth of the same through experience.

toward the furnace, and having the wax in easy reach to the right.

In front of the operator, to the left, within easy reach, is a frame-rack upon which the frames are placed for filling. Notice the 3 slanting guide-boards of it just in front of the small tree in the picture. These things will be described more fully further along. My desire now is that you locate the position of these things as I use them, so you will understand them satisfactorily.

As described, the operator has the pile of 4 supers shown with empty frames, to his right. These empty frames pass from here to the frame-rack, and, when filled, to the pile to the left of him, thus filling one super after another as they are emptied on his right.

Now I will fix the fire-pot as I use it instead of the furnace shown in the picture. Fig. 2 will explain this. It is nothing less than a 5-gallon honey-can with a large opening for the pan of wax. On each side are large ventilator holes made by "jamming" a heavy-pointed instrument through the tin. Inside the can rests a square piece of tin, with like holes through it, on two rods of iron extending through two sides of the can as shown. This acts as a grate upon which I make the fire. Charcoal, corn-cobs, or chips of wood

Southern Beedom

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

Bulk-Comb Honey Production—The Comb Foundation

This is a most important subject in connection with profitable bulk-comb honey production—one upon which depends whether we are successful in obtaining the maximum quantity of a gilt-edge article; one upon which not enough importance is placed by a great many, even experienced bee-keepers.

There was a time when I thought starters were sufficient during a honey-flow, since much wax would be secreted and would otherwise go to waste if the bees were not given a chance to use it. But one single experiment, and that an accidental one, proved to me the importance, yea, more, *that the use of full sheets of comb foundation was most essential and profitable at all times and under all conditions*; for the extensive bee-keeper at least.

It might be admitted that there are certain times and conditions during which a lesser use of foundation may

be profitable, but that belongs entirely to another class of bee-keepers from ours. They are those whose numbers of colonies are small, and who have abundant time to be watchful of such occasions. This can not be done by those with numbers of apiaries, and these in as many different localities, with perhaps as many different honey-sources. This is my condition exactly, and being so situated has given me occasion to observe. It has taught me to use *full sheets of foundation at all times, both in supers and brood-chambers. It pays, and pays big.*

The picture (Fig. 1) gives an idea of my operations when putting in the full sheets of foundation. The large pile of supers are already filled. Note in the foreground a charcoal furnace on 3 legs. On this is a pan of melted wax. Immediately between this and the pile of 4 supers notice a seat with a cushion on it; this can barely be seen. I want you to get an idea as to just where the operator sits—almost facing

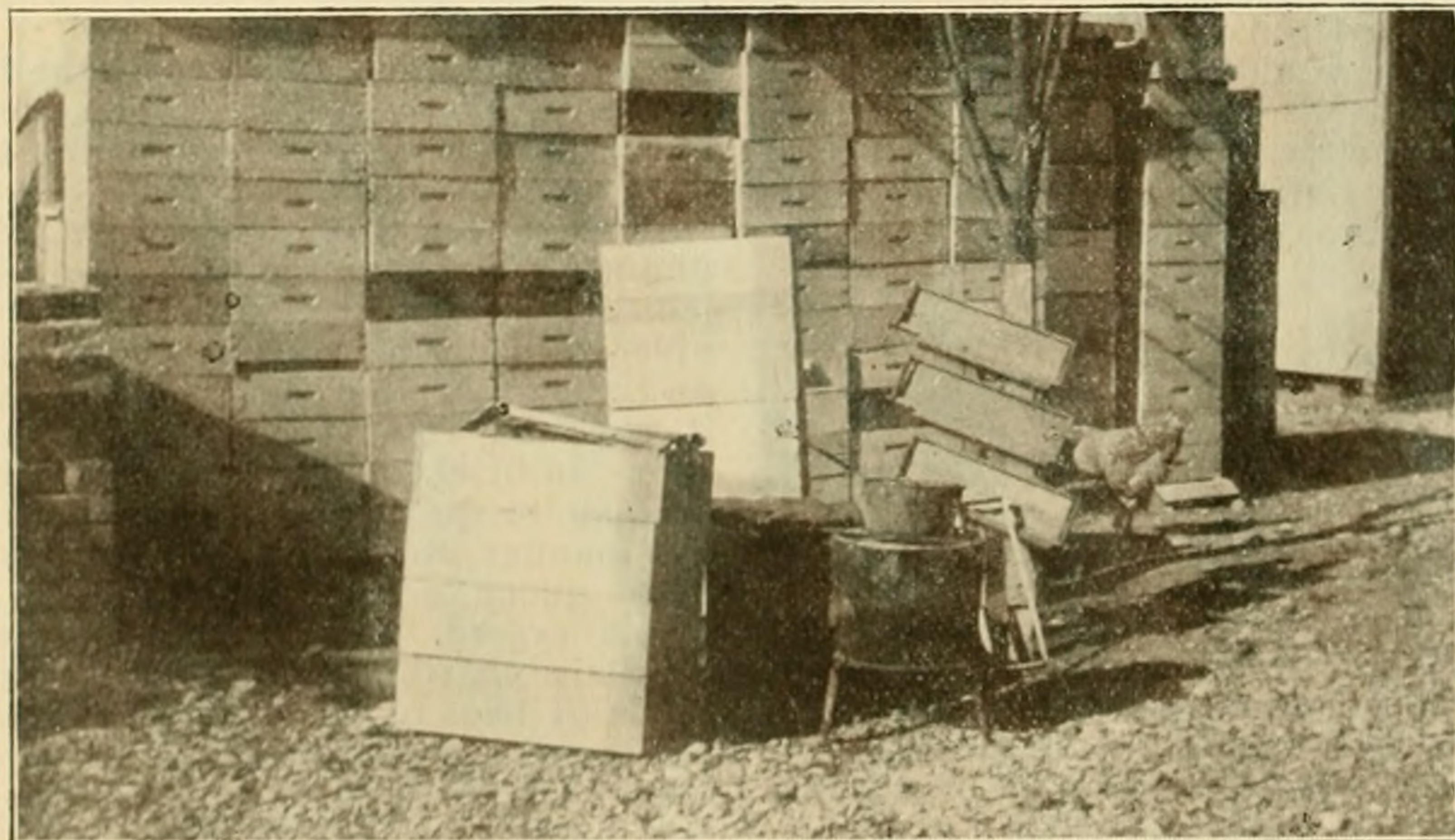


FIG. 1.—SCHOLL'S WHOLESALE METHOD OF PUTTING FOUNDATION IN FRAMES.

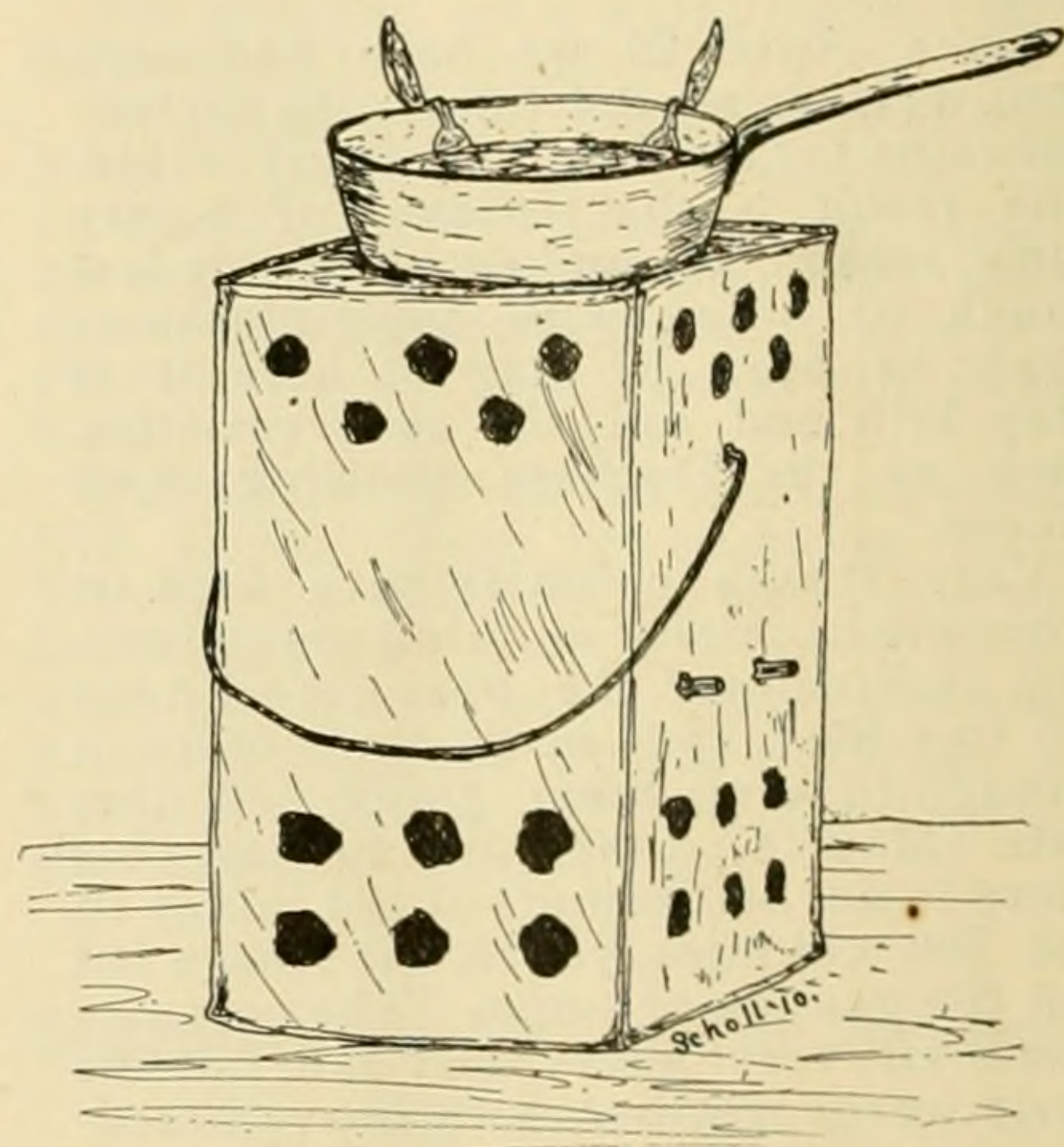


FIG. 2.—SCHOLL'S FIRE-POT.

are used for fuel. A wire handle fastened as shown finishes the stove.

Of course there are many others, and perhaps better ways of heating the wax, but it must be remembered that in an extensive business, as mine is, with 26 apiaries, and these widely scattered, it is impracticable to have things just the best. Small oil-stoves or gasoline heaters are fine, but as we can not always carry them along, or have them where wanted, we must have something at each place. Hence, *something cheap* must be adopted, and old, rusty, worn-out honey-cans fill the bill for me.

A very cheap, 10-cent stew-pan is used for melting the wax; using a quantity of water in it to prevent scorching. For this work I use all kinds of scrap and inferior wax not fit for the market, hence I gain an advantage here. An important matter is to have a good quantity of melted wax at

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all times for fast work. Do not "piddle" with a tomato-can or an oil-lamp, etc.

Fig. 3 shows one of my spoons, with a narrow lip, and bent handle. The latter enables me to hang it over the

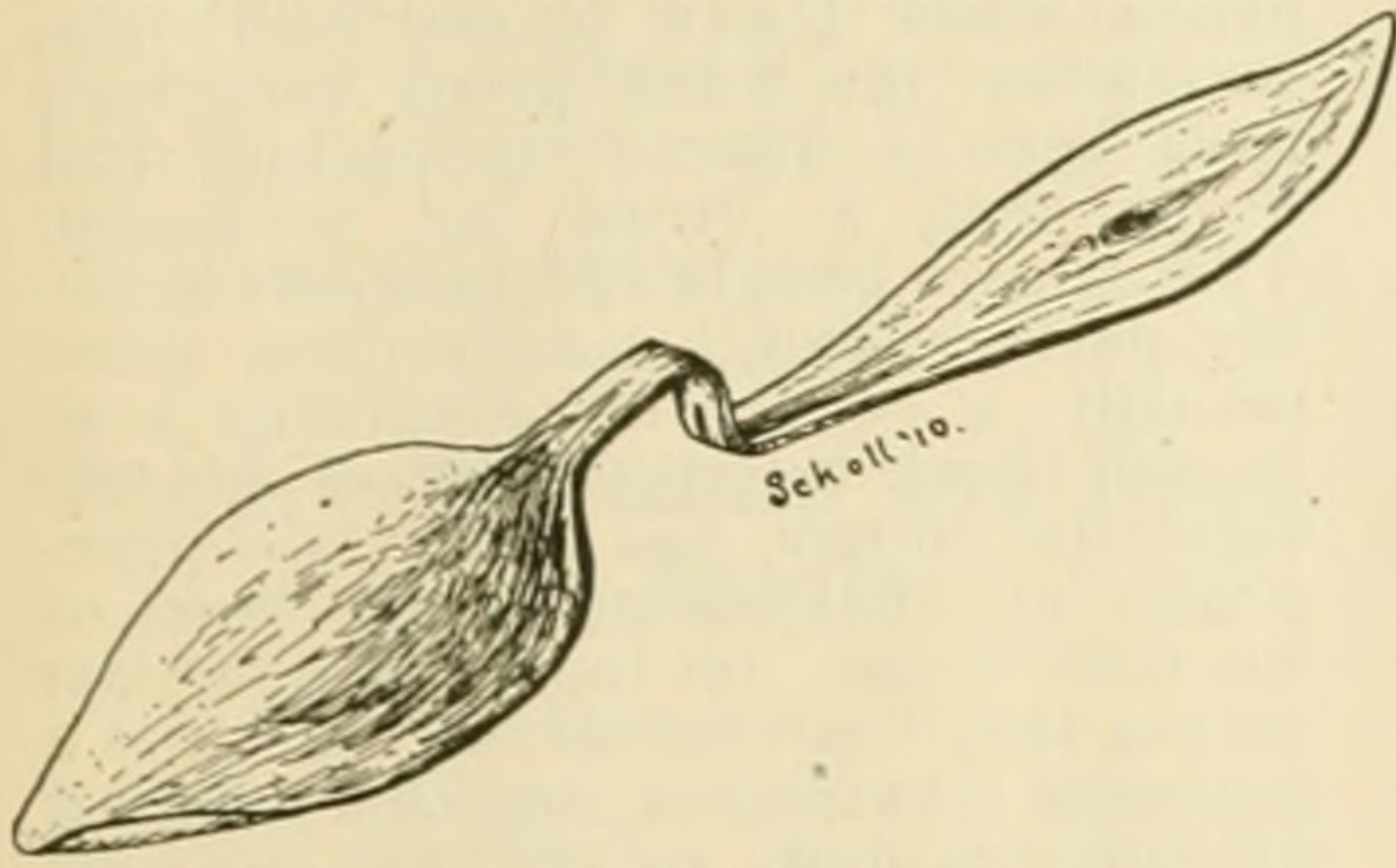


FIG. 3.—SCHOLL'S WAX-SPOON.

edge of the pan, always in reach, and never in the wax, as shown in Fig. 2. The narrowed lip is made by beating with a hammer, and guides the wax into a narrow stream. The size is large enough to hold enough wax to fasten one sheet with each spoonful. It is a very common tin soup-spoon, and costs 10 cents a dozen.

Now the rack (Fig. 4) receives an inverted frame as indicated by the dotted lines. A full sheet of foundation is laid inside of it, the slanting guide-board placing it centrally in the top-bar. A spoon of melted wax runs

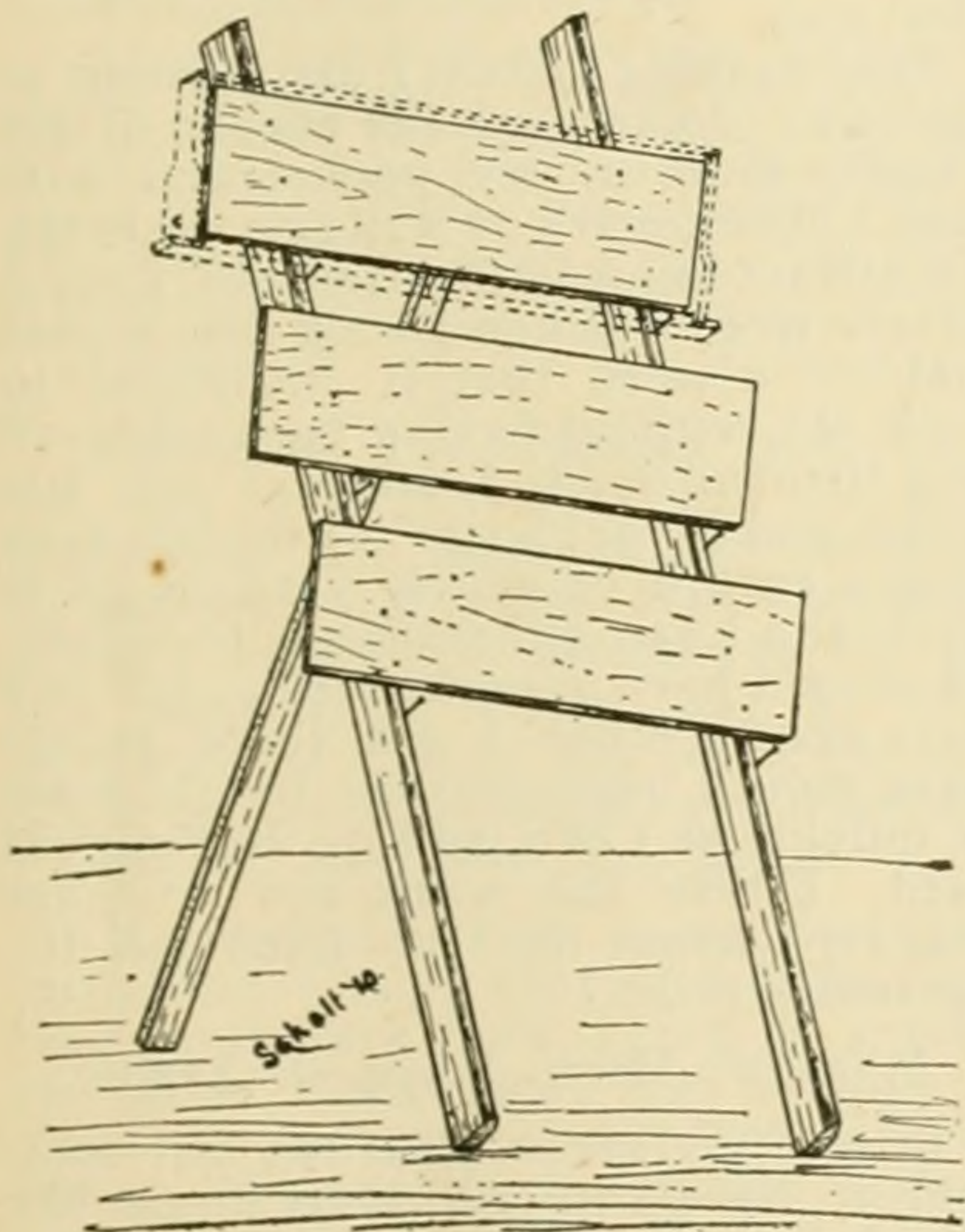
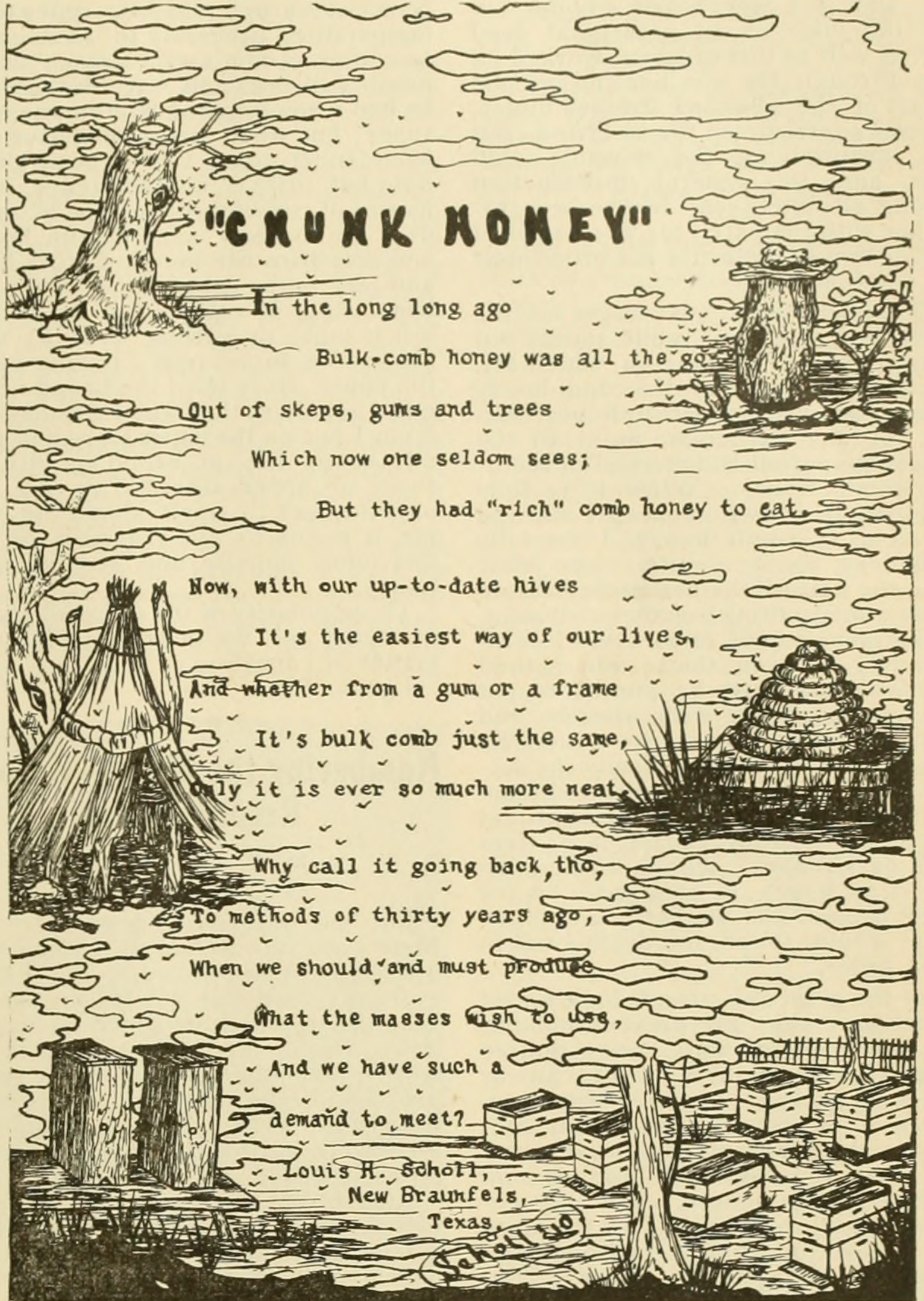


FIG. 4.—SCHOLL'S FRAME-RACK.

down the incline and fastens it. While this is cooling another is fixed on the second board, then another on the third. Now the first is removed to the empty super to the left of the operator, and another frame is put in its place on the rack, and so on all day long, or filling thousands of frames with full sheets of foundation.

As the supers become empty on the right of the operator, they are placed to the left and refilled again, making it necessary to begin with only one empty super at the start.



Contributed Articles

Chunk, Section and Extracted Honey

BY DR. G. BOHRER.

On page 51 of the American Bee Journal, Mr. T. A. Crabill takes exceptions to the production of chunk honey, on the ground that it is going back to where our fathers stood 75 or more years ago. And as far as putting honey into bulk with combs broken, he is entirely correct; but the honey is now taken from the hives as surplus and put up in receptacles prepared for the purpose of putting honey upon the market. He fails to report in detail the difference between bulk honey as now put upon the market and 75 years ago. Then, dark combs lined with cocoons, wormy cells containing pollen, and not infrequently larvæ and

mature dead bees, were found. All of this occurred on account of the honey being taken from the brood-nest, where dark and white comb containing honey, pollen and larvæ, were almost inseparable.

It was then the general custom to suffocate the bees over a brimstone pit, or to get honey from trees in which absconding bees had taken up quarters, and, as a rule, an undesirable mass was, and is yet, obtained in all such cases. Such a thing as extracted honey was not known. Such pieces of comb as presented such an uninviting appearance as would render it certain that no one would think of masticating and appropriating it as food, were sometimes put into a sack, put through the squeezing process, and what was called "strained honey" was obtained. It often contained pollen, I know to be a

fact, and if I ever heard any one say that the juice of an occasional dead bee, as well as that of larvæ, worked its way through the strainer and became a part of the so-called strained honey, I never contradicted the assertion. But the invention of the movable-comb hive, and its general introduction among all intelligent bee-keepers, together with the extractor, has banished the custom of entering the brood-nest for comb honey.

The many other advantages of the movable comb Mr. Crabill should not overlook. The manner in which Mr. Scholl and others of the comb-honey class of bee-keepers secure honey, does not, in any particular, point to the brimstone period and method of securing comb honey. When it is fully understood it is the cheaper method of securing comb honey, I am fully convinced, as it requires less labor upon the part of the bee-keeper; there is no annual putting together of frames, as the same set of frames will last indefinitely, while in the section method new sections must be purchased, put together, provided with starters and section-holders, must be carefully scraped and adjusted to receive the sections. The comb honey received from shallow frames is quite as white as that stored in sections, and it is as free from dark comb, cocoons and pollen as section honey is certain to be, for to put it upon the market in any other shape would sound its death-knell in short order.

But the great objection to bulk honey is that the combs are pressed together and are covered with honey poured over and around them in the cans or jars it is packed in, which simply deprives it of its solid, unbroken cappings, which are simply ornamental. But when the consumer buys a pound of it he gets 16 ounces, while the sections, I think, are retailed by the piece and fall short from a fractional part of an ounce to several ounces. But isn't extracted honey produced a little cheaper than either section or bulk-comb honey? To me it seems that the time and labor required to extract honey will cost less than the comb taken from the bees with bulk-comb honey, as much time, labor and honey are consumed in replacing the comb taken from the bees with the honey; and, aside from all this, beeswax or honey-comb is in no sense a component part of any food, it being wholly indigestible.

Then, to view section-comb honey, bulk-comb honey, and extracted honey from whatever standpoint I may, section honey is the most ornamental, but the most expensive. Bulk-comb honey ranks second in the matter of cost of production, and extracted the cheapest; and if any real difference in the quality the latter is the most wholesome; but all three methods are far in advance of the antiquated customs practiced 75 years ago, and I feel quite convinced that Mr. Crabill will see matters in the same light when he comes to note all the facts that have followed the invention and introduction of the movable-comb bee-hive.

As to the matter of super frames, both Mr. Scholl and Mr. Dadant favor the shallow pattern. It is true the

bees can warm a shallow super to the temperature necessary to enable them to construct comb, with a much smaller number of bees and warmth than must be had when building comb in a deeper super; but when the combs have once been constructed, I have been able to note but little if any difference in the matter of storing the combs of either deep or shallow supers with honey; and therefore use mostly 2-story hives, and feel quite certain that when the upper story is really required I have less trouble in getting bees to work above the brood-nest. I never put on the upper story until the brood-nest is quite populous, then when a honey-flow is on I put on the upper story and raise a frame or two of brood up into the super or upper story. This not only puts the bees to work above, but, with me, it seems to put a quietus on the swarming impulse, and secures more honey.

The popularity of the different shapes of honey for the market is largely a matter of education.

Lyons, Kan.

Numbering the Hives—Keeping Record-Books

BY O. B. METCALFE.

("The New Mexico Chap.")

For the past year or so there has been some discussion of numbers for hives, and of the record-book. I think every professional bee-keeper should keep a note-book in which he may jot down, from his experience, things worth remembering, and if he rears his own queens, he should number and keep some record of such colonies as he may desire to use for breeding purposes.

Numbering *all* hives and keeping their record as to queen-cells and such details, I do not think practical for a man with as many as a thousand colonies, or perhaps less.

The numbering-every-hive-and-keeping-its-record system, as it has been discussed, is supposed to enable the bee-keeper, when his breakfast is swallowed, to look at his record-book and see where he should go to work that morning. Such a system would, last spring and summer, have called me every morning to about half a dozen different yards at once, varying in distance from one to 8 miles apart. Not being able to "scatter out" that way, being systematically informed as to just how things were, might have put me in the insane asylum.

I think I hear Mr. Doolittle say, "I told you so!" for two years ago, when I asked him how I was to control swarming in some 1500 colonies by myself, explaining that experienced help was not to be had in my locality, he advised me to sell all but 500 colonies, and no doubt the readers of bee-papers generally would have thought his advice wise. I did not, however, sell any of them, and nearly 75 tons of honey that fall—20,000 pounds of comb and the balance extracted—showed either wisdom or luck.

I have always been a true Westerner. I will "make it or lose it." When my partner and I decided to go into the

bee-business, we carefully read "A B C of Bee-Culture" (something no beginner can afford to omit); but after noting that it advised beginners not to try more than 20 colonies, we went and bought 300 3-frame nuclei. I knew a drone when I saw it, and had once seen a bee that I felt pretty sure must have been a queen; my partner had never seen a drone or a queen. That fall we bought 1200 colonies more. My partner and his extracting crew (usually a couple of Mexicans who cannot speak English) take off and extract the honey, and to me falls practically all the manipulation. Most of the time I am "on top," but once last spring they "got me down." That is a common expression out here, but it seldom fits quite so well, for the bees were in great bunches on the tops of the trees, and I on the ground frantically trying to get them back down. This time I pressed my partner, my brother (who was with us a month or so about that time), and a Mexican boy, into the "manipulation," as I term all work with the bees, except the taking off of honey and preparing it for market.

Well, getting back to my subject, and cutting short a long story that is probably more interesting to me than to others, I will say, at a rough guess, that it would take about one-fourth of each day to make and refer to such a record of our hives as, for example, Dr. Miller keeps of his. I could not possibly spare that time, and yet I believe I am a practical bee-keeper, and that I keep a large number of colonies of bees in a practical way.

The marking system I use is about as follows: I carry a large crayon of the paraffin kind in my pocket, and with that I check-mark or write on the hives. To attract immediate attention, I use a green weed. When I walk into a yard and see a weed that is beginning to look old, without having been taken off and thrown down, I know I am late there, and I "get busy." I do not even keep a record of which yard to go to next, and I can generally say to myself, "I should have gone to yard—, 2 or 3 days ago." When I get there things have gone a little wrong; I right them as quickly as I can, and go to the next yard. I love the work, and consider that my partner has the hard and disagreeable task.

MARKING HIVES WITH AN ARROW.

It was my great pleasure, last summer, to have with me in my home Mr. W. H. Laws, of Texas, and among the many valuable hints he gave me, I recall a marking system which I shall try this season in one yard at least. The plan was to nail, on one side or end of the hive, a wooden arrow about 6 inches long, by driving one nail through the center of it. The arrow can be revolved to indicate different things; for example, if the arrow points up, it indicates that all was well at the last visit, both in regard to queen and super-room; if turned $\frac{1}{8}$ of a revolution to the left, the colony was preparing to swarm; $\frac{1}{4}$ to the left, it had swarmed and needed watching to see that the new queen was all right; $\frac{1}{2}$ turn, or pointing down, denotes queenlessness. Turning to the right refers to super-room which is needed in the degree in-

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licated by the number of degrees turned; if nearly to the bottom on the right side, a super was needed without delay, etc.

By walking out in front of a row of hives thus marked, I could see 15 or 20 steps away where I was most needed, and what for. It seems to me just the marking system for my system of keeping bees.

Mesilla Park, New Mex.

No. 1.—Heartsease and Spanish-Needle

BY C. P. DADANT.

I saw in the February number of the American Bee Journal that Spanish-needle is a great honey-plant; and that heartsease is also. I am desirous of learning more about them. There is no Spanish-needle around here, at least I never saw any of it. Nor is there any heartsease, unless it is the common weed we call smartweed; I rather think that is it, but I am not sure of it. I have seen bees work on the smartweed, but they seem to gather but very little honey from it. Heartsease may resemble it in some respects, and not be it; I am not sure about it. Does the Spanish-needle grow seed? and does it grow from seed? If it does, can you tell me where I can get the seed?

I am going to move my bee-yard to a place 20 miles from here, where I will have an unlimited range for them. I will be 5 miles from any other bee-keeper. I can there keep 100 colonies, and more, if I can care for them. There is a fine flow from fruit-bloom and clover, raspberries, blackberries, poplar and basswood, buckwheat, goldenrod and aster. I can also get a good stand of Spanish-needle and heartsease, as there is considerable land that is not cultivated. If these plants can be grown from seed, and if they will grow here, I will endeavor to have them sown and see how they will do.

I saw an account of white sage as a honey-plant. Where can I obtain that seed? I want to make the place a first-class bee-country, as I think I will spend the remainder of my days there. I have always liked bees, and enjoy handling them. Any information in regard to honey-producing plants will be very thankfully received by me.

New Jersey,

WM. E. HOUSEL.

Heartsease and Spanish-needle are the best wild blossoms for the production of fall honey along the Mississippi River. Perhaps this statement could be truthfully extended to the entire Mississippi Valley, but as both plants thrive best in wet lands, the low lands of the Mississippi and Missouri Rivers are also their best home.

"Heartsease" is to some extent a misnomer. Gray's Botany and the Century Dictionary both agree in giving the name "heartsease" to a violet—*Viola tricolor*—the pansy. The Century adds: "In some parts of the United States the common persicaria, peach-wort, lady's thumb or smartweed, *Polygonum Persicaria*." It is to this genus of plants that we refer when we speak of the "heartsease, smartweed, knot-weed, persicaria, etc." According to the Century, there are about 50 species of the persicaria, which I do not doubt judging from the numerous different varieties which occur on low lands. The Century devotes to this genus of plants a half column which is instructive to peruse.

The name "*Polygonum Persicaria*" is a very good description of the plants, when we refer to the etymology. "*Polygonum*" is derived from two Greek words "polus," signifying "many," and "gonu," "knee, knot," a plant with many knots, each joint of the stem looking

indeed like a knot. The other name, "persicaria," is from the Latin "persicarius," a peach-tree. This name was given to the plant from the resemblance of its leaves to the leaves of a peach-tree in their shape.

The ordinary persicaria of the fields is a sweet plant which cattle eat readily. It does not grow very plentifully on grazing lands owing to this fact, for it is readily destroyed. It thrives mainly in wet stubble-fields after the wheat, rye or oats have been removed. The low lands of the Mississippi River, which overflow more or less periodically, produce it in abundance. I have often seen it take the place of crops when the latter are destroyed by the June rise of the Mississippi, and then it grows so luxuriantly that I have seen it attain a height of 5 feet or more. During the summer of 1880, the Mississippi River covered the lowlands to such an extent that it broke through several of the levees built to protect the crops. Thousands of acres in Hancock and Adams County, in Illinois, were over-



HEARTSEASE.

flowed, and the crops entirely destroyed, for the water remained on the land until well into July. At the same time our uplands were burning up with an unusual drouth, and the bees that were located on the hills were threatened with starvation. The combs were absolutely dry in August. I took occasion of this to try migratory bee-keeping.

About Aug. 15 we transported to the low lands below Warsaw, 105 colonies, traveling with our teams during the night time in order to avoid endangering the life of our bees by day confinement. The bees which were thus brought in the midst of thousands of acres of heartsease gathered a splendid crop of light-colored honey. Within 15 minutes after their release from the hive we could see them on the flowers in every direction. These weeds were so thrifty that they stood as high as the backs of our horses—a perfect sea of

blossoms. I never saw bees in such rush. They appeared as if intoxicated by their good luck.

The heartsease is, however, not generally regarded as a first-class honey-plant. Dr. Miller, in his "Forty Years Among the Bees," gives a very good cut of it, page 171, but says on page 122:

"The summer of 1902 was very wet, and for the first time in my observation heartsease was busily worked upon by the bees."

This is certainly not a very good recommendation, coming from so experienced a man as Dr. Miller. But the Doctor is not located where this plant is most abundant or successful. On the other hand, the "A B C of Bee Culture" says of the heartsease that it yields "in Nebraska and other States in that section, immense quantities of honey." This work cites a Nebraska bee-keeper who harvested an average of 250 pounds per colony one year from this source. Our own experience with it has been very favorable, although the plant is not a regular producer of large crops. I believe, with Dr. Miller, that it takes moist seasons to get the maximum from its blossoms.

As there are a number of different species, varying with the soil, the climate and the season, there is also a variation in the grade of honey that it produces. For this reason contradictory reports have been made regarding the color of the honey. Some people have held it to be as white as white clover honey, while others reported it as amber. In our own case we found it slightly darker than white clover, but of a light pinkish tint. I believe its color would be reported upon more favorably by the average apiarist, were it not that its bloom often runs into the blooming time of Spanish-needles, and the two kinds are often mixed.

There is but little doubt that the Persicaria, in one species or another, is to be found in many parts of the United States. The botanical works mention some species as native of the New England States, others as growing from Michigan to Kentucky. A number of species are native of Europe, and a cultivated species, *Polygonum Orientale*, produces very large leaves and beautiful clusters of flowers. The bees work on it regularly.

One of the peculiarities of our heartsease, as of the smartweed, is that the petals do not fall after the seed has formed, but retain their color, white or pink, until long after the seed has formed and ripened, so that you may find a blackened ripe seed within a corolla that to all appearances is fit to yield honey.

The smartweed is not to be considered a good honey-producer; although the bees work on it at times, they do not appear to stop on its blossoms long. Its name is derived from its juice, and for that same reason it has also received the incongruous denominations of "culrage" and "arse-smart" (Century Dictionary). Its botanical name is *Polygonum acre*. Another variety is *Polygonum hydropiper*—water-pepper.

Outside of the Persicaria there are other honey-producers in the family of Polygonaceas, the leading of which is our buckwheat. The observing bee-

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keeper has probably noticed its resemblance to the heartsease in the "knots" of the stem, the shapes of the blossom and of the seed.

The Persicarias are fully as common in Europe as in America, but I have never heard of them as great honey-producers on the European Continent. They have a certain credit as medicinal plants, and in Russia, India, China and Japan, the leaves and the roots are employed for making dyes. (United States Dispensatory.)

The Grand Dictionnaire Larousse mentions the plants of this family as good soil-enrichers. I believe this is correct, for I have often seen buckwheat grown purposely to plow under as they do with red clover.

This article being longer than I anticipated, I will mention the Spanish-needle in another number.

Hamilton, Ill.

Increase vs. Honey-Production

BY LEO E. GATELEY.

Shall the professional honey-producer set aside certain colonies for making necessary increase, or shall the entire apiary contribute toward such an end? This is a question that I have never settled to my complete satisfaction, and is one, I believe, which must, to a great extent, depend upon conditions.

By setting apart a share of the apiary to be used for increase, those remaining can be kept in an ideal condition for storing surplus; but in order to prevent swarming among such colonies, when run for section honey, it becomes necessary either to practice shook-swarming, or at one time or another, deprive the bees of all or most of their brood. Where only a small increase is desired, it can be supplied by this removed brood with no appreciable effect upon the amount of surplus secured.

As soon as the hives are well populated, whether the honey-flow is on or not, I place over each colony a second story of empty combs or foundation. This will delay swarming until the queen has moved up into the top hive. By the time this occurs there should be quite a flow on, and the upper story with the queen can be removed to a new stand. The lower story is then given a ripe cell or virgin from choice stock, and a super added. As the hive on the old stand now contains sealed brood only, it cannot swarm as there are neither eggs nor larvæ from which to start cells. The return of the field-bees from the top-story so diminishes their force that all danger of their swarming is removed. The emerging brood left upon the original stand, reinforcing the field-force, work in the sections will go forward with a rush.

The old queen and bees in the new hive should by winter build up into a fair colony; but if so great an increase should prove undesirable, the top stories can, as they are removed, be tiered up to any depth without quarreling, and all of the old queens will be killed but one.

This method of management I find secures a crop of honey equal to any, supplies young queens to a good share of the apiary, furnishes sufficient in-

crease, totally prevents swarming, and keeps all of the original number of colonies at work in the sections.

As most of my colonies are in sectional hives, another plan is used to prevent swarming with such. Like the first, it involves the removal of brood, but this is taken away gradually, one division at a time, and the old queen is left upon the original stand.

My preference for such methods of increase arises chiefly from the fact that there is so little labor connected with them. There is no handling of frames whatever, and if no more than 100 percent increase is needed, it can be formed without lessening the honey crop in the slightest, and while performing only necessary operations in the production of the crop.

If a greater increase is needed, a division of the brood removed can, under favorable circumstances, be made, but it would in all probability be found advisable then to adopt other measures, even though they involve some trouble and expense. In fact, the foregoing plan is not so much in line with the requirements of those wishing to build up an apiary quickly, as it is suitable to the practical honey-producer who does not care to have his increase interfere with his business of securing the largest possible yields of surplus.

Sebastian Co., Ark.

Hatching of a Queen-Bee's Egg

BY G. M. DOOLITTLE.

"I see that you sometimes answer questions in the American Bee Journal, giving some length to the answer. There is something which I wish to know more about, and I thought that Doolittle might be able to shed some light on the matter. It is this: How do the bees hatch the eggs which the queen lays? Or is this question worded wrong? Let me put it another way: Do the eggs laid by the queen honey-bee hatch of themselves the same as do the eggs of our birds and barnyard fowls, just from the warmth they are exposed to during incubation? or do the bees, by some secret of their own, cause them to hatch? Again, How long can the eggs the queen lays be kept and then hatch?"—A CORRESPONDENT.

These questions are very interesting, and those on which I have often thought I would experiment, but when the rush of the season comes on I find that many of the scientific things I desire to look after have to step to one side from the pressure which is brought to bear from the dollar-and-cent point of the apiary; for, say what we will, the harvest of queens, bees and honey is the main "lever" resting under all of our work with the bees. With the hope that some one not having so much to do as I have, will take this matter up and carry it further than it has been my lot to do, I will try to tell all I know in this matter.

Several years ago there came a dearth of honey just when it was necessary that the eggs laid by the queens should be matured into bees, if I was to have the maximum number of bees on the stage of action when the flowers giving my harvest of white honey were in bloom. Being anxious for the best results I watched carefully to see that the eggs laid by the queen were hatching into larvæ, and these larvæ fed till sealed up; for years of observation had told me that with the sealing up of a cell containing a larva, such was the

same as insured for a perfect bee about 12 days later, if no unforeseen accident happened to that colony. That when the bees considered it necessary to retrench in brood-rearing from any cause, that retrenchment was always begun through a limitation of the eggs allowed to hatch, and lastly by withholding the proper food from the queen so as to restrict her egg-laying.

After the dearth above spoken of had been on for a few days, I found that the larvæ were being scrimped of food, and a day or two later all of the brood contained in any of the hives was in the egg or sealed-brood form. Desiring to do the best possible with the bees, I commenced to feed about half of the colonies, hoping to see the eggs hatch; but from some reason those colonies fed refused to do anything different from those not fed. All of the days were cloudy and cool, so that the bees were kept confined to the hives, except as those fed would fly for a time after the warm feed was poured into the feeders. I have always thought that had I commenced the feeding before the bees began to scrimp the food of the larvæ they would have gone right on, the same as if there was no dearth of nectar caused by this cool, cloudy spell which was of two weeks duration. However this might be, I noticed at every examination of the hives that there was an unusual number of eggs being retained in the combs, aggregating many more than there were before the dearth commenced, as the queen filled with eggs very many of the cells from which the larvæ were removed, while those on the outside of the brood-circle were still retained.

It now came off bright and warm, and in less than 3 days—that necessary for the incubation of the eggs of the queen—the combs were teeming with larvæ to an extent never before observed, the largest larvæ being on the outside of the brood-circle, instead of on the inside, or next to the sealed brood, as is usually the case. I carefully inspected these combs, holding one for some time, and watching the bees put their heads into the cells. I next fixed my gaze on a certain place where the eggs and hatched larvæ ran along side by side in two rows of cells matching each other for some 2 inches, when a bee put its head into one of the cells containing an egg. Immediately on the withdrawal of the head, I peered in and saw that the "shell" of the egg was wet, apparently with the milky food the larva was fed on. I marked this cell, and on looking a few minutes later found the shell partly melted away, as nearly as I can describe it, and the smallest larva I had ever witnessed lying on the part of the shell under it, still, in a measure, intact.

From this and other observations similar to it, I have always believed that the bees hatched the eggs laid by the queen by their manipulation of the larval food on part or all of their surface, something in the way the capsules containing medicine are melted with the saliva coming in contact with them when swallowed by a patient. The experiment I had planned to use to prove this matter was to put a clean comb into a colony of bees, leaving it till the

queen had filled it with eggs, and a few of these eggs had hatched into larvæ, when this comb was to be placed in a wire-cloth nursery-cage, put in a strong colony and left a few hours or over night.

The next morning, by placing some of the larval food on the eggs immediately surrounding the larvæ, by means of a dropper or the little stick used in putting the royal jelly into queen-cups, then setting the frame back in the nursery for an hour or so, this should tell whether what I believe to be true was a real fact. Of one thing I am certain, which is, that eggs taken from the bees will never hatch from simple warmth, for I have watched time and time again, both in the lamp-nursery and in a wire-cloth nursery left with a strong colony of bees, and never knew of one hatching.

From the observation as given, of the egg which I see apparently hatching, it would seem that larvæ never really hatch; or, to put it in another form, the eggs of the queen-bee do not hatch, but are liberated by the action of the food which is placed upon the egg by the nurse-bee. This seems reasonable; the larvæ having no means of biting or breaking their way out of the prison walls that surround them.

Again, all of my observations have failed to reveal the "shells" of eggs in any cells in any bee's mouth (as would be the case if the bees removed them), or in any part of the hive. So I conclude that the action of the food upon the "shells" cause them to melt away, as it were, and mix with this food, all of which is consumed by the growing larvæ.

Who can give us more light on this interesting subject? As to how long the queen's eggs can be kept and still hatch, I am unable to say. I have stored combs of drone-brood in the cellar with a view of killing the brood there, and had both the eggs and capped brood mature after being a week away from the bees; but the larvæ were killed.

Borodino, N. Y.

5.---Bee-Talks for Beginners

BY JIMSON RAGWEED, OF INDIANA.

TEXAS HONEY—PRICE OF HONEY.

MR. JIMSON RAGWEED:—If Texas produces so much honey, why do we not see more of it on the market? What do you think is the reason that the price of honey does not advance in proportion with eggs, butter, pork, etc.?

How is Sam getting along since his term at college?

Yours,
AMOS CUMBSOME.

DEAR AMOS:—Your postal card to hand. Texas really does produce an immense amount of honey, and the quality is fine, but they consume it themselves, especially since the producers have got to putting up chunk honey. When they have a good thing in Texas they keep it themselves.

In my opinion, the price of honey has held its own. Improved facilities with increased numbers of colonies have increased the production wonderfully, and under ordinary circumstances this would mean a decline in prices.

Sammy is getting along fine. He can play foot-ball, and they say he is fine

on roller skates. One of the students asked him what business I follow, and Sammy told him I have an apiary. And then they asked Sammy what an apiary is, and Sammy told them it was a place where apes are kept! When asked what an aviary is, he told them it is the place where Wright Brothers keep their air-ships. Today Sammy is sprouting the potatoes in the cellar, but he did not like it much because Thursea brought up the pan of doughnuts while he was working there.

Truly yours, JIMSON RAGWEED.

LABEL FOR HONEY-JARS.

MR. JIMSON RAGWEED:—I wish to get a new label for my honey-jars. What kind of a label would you recommend? I would like one so fine that the grocer would place my goods to the front.

Manda sends her love to Thursea.

Yours, JOHN JOHNSON.

DEAR JOHN:—I do not know that I can tell you very much about labels, but I would get an oval label rather than a square one, because it can be placed more rapidly without the corners curling up. I would suggest that you have your photo engraved and use it in the center of your label. An advertising man told me once that your own picture makes the very best possible advertisement. A bee is all right, but all bees look alike, but there is but one John Johnson, and the uglier one is, the better the advertisement. On this account you might ask Manda if the suggestion appeals to her.

Yours truly, JIMSON RAGWEED.

ATTENDING BEE-CONVENTIONS.

MR. JIMSON RAGWEED:—What do you think about attending bee-conventions? I thought the one up at Indianapolis was fine, but I did not fancy that banquet business at the Hotel English. I noticed four men speaking German before I had been there 5 minutes, and I thought that seemed funny for an English hotel. Even the waiter looked at me inquiringly and said "table dote?" The bill of fare, which they called a "menu card," had a peculiar list on it, the first item being cranberry sauce and roast turkey; but the very next item was sucking pig and apple sauce. The idea of us sitting down to a table and sucking a pig was too much for me, and when Ras Smith took a drink of water from the finger-bowl I nudged him, and we went over by the hay-market where we each had a piece of pie and a glass of milk. No more banquets for Ras or me.

Yours truly, AMZI CRAGG.

DEAR AMZI:—I believe it pays to attend the bee-conventions, and your support will help others. I confess that I realize the most benefit at a convention from the social part, or the little talks and hand-shakings during the intermissions, and I find many men of excellent ideas who do not get up and talk. Whenever I go to a bee-convention I always connect many pleasant memories with the meeting for years to come. The first bee-convention that I ever attended was across the river in Kentucky, and the late Father Langstroth was in attendance. One man got up and told how the king-birds were eating his bees, and how he was shooting the birds, and I guess we all thought the thing to do was to get the gun and kill all the birds that came around. Mr. Langstroth then took the floor, and in his kind and impressive way urged them not to kill the birds. Older readers who have heard him will never forget his wonderful power as an impressive speaker, and to hear him was well worth a long journey.

JIMSON RAGWEED.

MIXING OR DRIFTING OF BEES.

MR. JIMSON RAGWEED:—My hives are arranged in long rows, and very close together, and at times the bees mix. I would like to overcome this, and I wish you would give me your ideas about it.

Neighbor Newt Plumb sends his regards to you, and says to tell you that he is rearing lots of queens this year. Newt has issued a circular about his bees and honey, but the printer made two bad mistakes. Last year Newt sold 10 untested queens to one man, and all proved to be purely mated, and Newt used his letter in his circular, but the printer used the word *poorly* instead of *purely*. In the part about his honey he wanted to say no *foul brood* in his locality, but the printer has it no *pure food* in his locality. Newt is sending them out anyhow.

Truly yours, EPHRAM JONES.

DEAR EPHRAM:—The nicest way that I have ever discovered to arrange hives so bees will not mix is to place the hives in groups of three. The bees seem to remember the end hives and the center hive without any confusion. I use scantling 2x4 and 6 feet long, placing them on bricks so the hives will be 5 or 6 inches above the ground. Use a spirit-level, and have the front of the hive an inch lower than the rear.

Very truly, JIMSON RAGWEED.

ORDERING BEE-SUPPLIES.

MR. JIMSON RAGWEED:—You know I told you about the long delay in getting my supplies last year. We got entirely out of hives right at swarming time, and Angeline hived one swarm in one of her bureau drawers, and another in an old churn. This year I ordered early.

How do you arrange your alighting-boards? Mine are always falling down, and weeds and spiders occupy the underside.

Truly yours, TILFORD MOOTS.

DEAR TILFORD:—I use tin alighting-boards to all of my hives, and Thursea and I made them ourselves by unsoldering some quart fruit-cans, bending the edge to an angle and soldering a wire-nail at each end. We drove an end-space staple over each nail, which makes a hinge, and we can turn them up against the hive while we run the lawn-mower close to the hive. We painted them one coat and then sprinkled them with sand; and then another coat of paint, and this gives the bees a good foot-hold. I sometimes sprinkle a little salt around the entrance which keeps down weeds and grass. During the winter snows I turn these alighting-boards up against the hives, which still permits an abundance of ventilation, and prevents having the entrance closed with snow.

Very truly, JIMSON RAGWEED.

Control of Queen-Fertilization

A Chicago bee-keeper is working on a plan to control the flight of queens and drones, which looks feasible enough to insure the pure mating of over 75 percent of the queens. He has explained this procedure to the editor of the American Bee Journal, and as soon as he has experimented sufficiently he will describe his methods in these columns. He has also discussed it with a number of bee-keepers during the past year, and all feel that it must prove successful.

The copies of "Honey as a Heath Food" that I have used have about doubled my sale of honey.
GEO. H. COULSON.
Cherokee, Okla., Oct. 26, 1909.

California Reflections

Conducted by W. A. PRYAL, Station E, Oakland, California.

The Season and Prospects

We never had such a fine year for vegetation; never did grass grow, flowers bloom and bees hum as they have been doing this season. What the product of the bee-hives will be I know not. There are signs that there are going to be many cool nights, and if so the secretion of nectar will be greatly lessened. But the growth the plants are making this year will stand them in good stead next year, even if the rainfall then should be less than the average. Toward the end of April we had some very hot days; the bees started to swarm in a terrific manner. It was good the hot spell did not last more than 4 days, otherwise I should have been swamped with swarms. After this warm spell the bees got down to normal conditions.

Strange, just at the time we were having our hottest weather, the Middle West was having a cold snap—killing frosts in some places. While this may be good for our fruit-growers, still, I am sorry that such a calamity overtook those Eastern growers. Too many of them will lose heavily. The cultivator of the soil can never afford to lose a crop; he has too many calls for the use of his hard-earned money to suffer such loss. It is so here; I am sure it is the same the world over.

Hornets, Bees, and Ignorance

The correspondent of the American Bee Journal who dubbed the writer of the hornet article "ignorant," in the April issue, struck a far more reaching blow at the "ignorant" class of bee-lights than he probably intended. I have been looking up all the authorities on bee-keeping in my possession, and I find that every one of them, American and English, who have anything at all to relate about wasps and hornets, say that they (the hornets) should be destroyed. And none of them gave as strong evidence against these insects as did the writer hereof, and for which "assault" on the "person and character" of the hornet Mr. Latham rather ungentlemanly started to abuse me, in the doing of which he also whacked the good men who wrote our principal bee-books. I don't know but I should thank the very learned gentleman for putting me in such distinguished company. He evidently stirred up a bigger hornets'-nest than he bargained for.

I still hold to my contention, that hornets are injurious to fruit; they pester the honey-house, and everlastingly get into the honey in their thievish propensity to pilfer that sweet. At times of the year they are bothersome to the bees, sometimes even attacking and killing them. Of course, the trouble from his source is never serious; it is, however, so to the honey-room and the fruit-crop. One thing about a hornet is that he is the most determined

of robbers; he will poke and nose about a honey-house until he finds some small crack through which he can crowd his miserable little carcass into the place where the honey is stored. It seems to me that one will work about the outside of a honey-house all day until he manages to secure an entrance. This a bee will never do, for a bee generally wants to get to the sweets right off; if she finds her ingress blocked she will take her busy little self to other pastures—pastures probably far more pleasant and better for her health.

At another time I may present some strong evidence to show that we of this State are not disposed to raise hornets to fatten on "wormy"-steaks; we shall leave that profitable business to the learned correspondent and defender of the thievish and abominable hornet. In doing this I won't dispute that the hornet may have some good traits—so have nearly all the members of the robber profession, both in and out of jail; those traits are at their best, however, when the owners are asleep, or when they are dead.

Wild Radish as a Bee-Plant

One of our most common weeds is the wild radish. I believe it is found all over the length and breadth of the State; I have seen immense patches of it in bloom at Santa Barbara in April. About the San Francisco bay counties it is sometimes a pest, though with careful cultivation it can be subjugated



BLOSSOMS OF WILD RADISH.

in a few years. It blooms here during April and May, and furnishes a large quantity of nectar. The flavor is not altogether bad; in fact, it is considered very good. This plant is not a native, but was introduced here at probably the time of the Spanish occupation of the country. There seems to be several varieties, one or two of which is

very strong-growing, and the roots attain large size. It may be possible that these are of oriental origin. While an annual the plant will live for several years, I believe, by cutting off the tops before the seed matures.

It would be well to destroy this wild radish wherever found, by cutting it bodily, as it is a useless weed except that it has value to bee-keepers, but to no one else that I know of.

Vale Ye Portrait Headings

I hail with much pleasure the disappearance of the headings used in the departments of this Journal up to and including the March number. On the adoption of the old headings, or shortly thereafter, I filed with the publishers my objections to this style of headings, especially the photographic use of my "phiz" in connection with the heading over the department I have been allowed to inflict upon the good readers of the "Old Reliable" these several years. I did this not that the publication of said "phiz" would lead to my detection and incarceration for "high crimes and misdemeanors," or that I was loath to be seen in company with the class of individuals that appeared elsewhere in the Journal, or, even, that I felt myself so much better than the other individuals that I did not want to rub up against them through the medium of printers' ink and white paper—no, not for any of these reasons, but for the simple one that I considered that it appeared a conceited idea to have one's picture forever paraded before the public. But my objections were voted down by ye Editor. I was asked to let the heading run until a complete change was made throughout the Journal, and I reluctantly consented.

I make the foregoing comments this time, for some reader of this magazine has been so good as to call the attention of both Mr. T. B. Terry and the editor of the Practical Farmer to the fact that my "phiz" was monthly decorating the pages of the "Old Reliable." And I was therefore called "inconsistent." All because I objected in a mild and gentlemanly way to certain features in the make-up of the said Practical Farmer, one of which was the use of headings much after the style of the late ones of the American Bee Journal. With the publication of my letter setting forth my reasons for such unnecessary use of portraits in the way mentioned, the paper thereupon and ever since has abandoned their use. But with their going the editor has been dying hard; he has taken occasion several times to let himself down easy; also to make digs at me for my intimation that Mr. Terry is too prone to be boosting things elsewhere advertised in the issues of the Practical Farmer. Any one who knows anything about the inside management of a publication office, knows that a "puff" or "boost" is never given an article advertised except for good and sufficient reasons best known to the business department. We all know that publishers are not engaged in printing a paper just for the fun of it, or even for their health, if you will. Of course, I must admit that there are times when reading notices

American Bee Journal

or puffs are admitted without any compensation; usually, however, as intimated, there is some ulterior reason for such notice, especially when an advertisement of the article noticed is displayed elsewhere in the paper.

In making these comments I must say that I have a very high regard for Mr. Terry and his work; also for the usefulness of the Practical Farmer, but I cannot sever Mr. T.'s connection with the editorial department of the paper from the business office, no matter how much the editor and Mr. T.'s friends

may think the latter is above writing puffs on demand of the business department of the paper.

Several readers of the said Farmer have written me in praise of the stand I have taken. Anyway, I have it to my credit, though perhaps not altogether deserved, of having had a hand in ousting department portraits from two great papers, to-wit the American Bee Journal and the Practical Farmer. Oh, no; never mind the thanks! I was doing simply what I considered my duty.

there is danger of robbers troubling, put an empty hive or super on the ground close by, put the super or supers on that in the same position in which they were on the hive, and then cover over.

3. A little better to start with the whole business Italian, but in 6 weeks all will be Italian anyhow provided the queen is Italian.

Swarm Prevention and Increase

1. What do you think of this plan for swarming prevention and increase at the same time? Go to a big colony, which is taking care of queen-cells preparatory to swarming, and lift out say 3 frames of brood with the queen, and place them in another hive for increase, and give the parent colony a queen-cell of some desired strain from which to rear their queen, taking care that all the older cells were first destroyed?

2. Do you favor placing the new swarm on the old stand when a natural swarm has issued, setting the old one a few feet away?
ILLINOIS.

ANSWERS.—1. The plan will work. You don't say what you will leave on the old stand. Better leave on the old stand the queen with the 2 or 3 frames of brood, and put the rest on a new stand.

2. Yes, but still better it is to set the old hive close to the swarm which has been put on the old stand, and move the old hive to a new stand a week or so later.

Growing Yellow Sweet Clover

There is some sweet clover in this vicinity, of the white variety, which yields a good quality of honey for a month or more. White clover is our main dependence for honey. There is very little basswood here, but considerable fruit-bloom, which yields some nectar in favorable seasons, to be divided among 7 bee-keepers within a radius of 5 miles, some of whom shamefully neglect their bees, and lose the greater part of their new swarms which go to the woods. Several have lost all their bees by not giving them the proper protection during the winter. Kindly give me the address of some one who grows yellow sweet clover for seed, as I wish to purchase 20 or 30 pounds for experimental purposes on my new farm of 80 acres. I bought it this spring. It is located about 4½ miles from here, and I intend to move my bees next December, when I take possession.
MICHIGAN.

ANSWER.—I do not know of any one now who has yellow sweet clover seed, but likely some one will advertise it for sale in this journal, as has been the case in the past. Coming 2 or 3 weeks earlier than the white sweet clover, the yellow is of great value where there is a scarcity of common white clover, or in years when white clover blooms, and yields no honey.

T-Supers—Shallow Frames for Chunk Honey

1. In answer to a correspondent, you said it would be better to make the T-super 17¼ inches instead of 17⅞ inches as you gave me. Have you tried that length? It seems to me that there is a surplus room to wedge. Will you tell me how you wedge, if one end or both? What kind of wedge do you use? I wedged some with the broken sections or any little pieces; wedged both ends, each row of sections wedged independent of the others. The bees put propolis beside some of the wedged end of the sections.

2. I have read of people producing bulk or chunk honey in shallow frames. What is the depth of the frame, inside measure? I use ½-inch strips to make my frames. Do you think 8-inch lumber will be too deep? The top and bottom pieces, and the ¼-inch space I have would leave the honey 6¾ inches deep.
KENTUCKY.

ANSWERS.—1. I use, as you remember, little sticks 12x¼x½ (or thinner than ½) to wedge in at the top between the sections. Well, when the sections fit in at the bottom too loose, they will sometimes drop down at one end, and putting in a wedge at one end, as you speak of, will do nothing to prevent that unless merely by the tightness of the wedging. Instead of wedging at the end, I take one of those little sticks I first mentioned, and put in the angle of one of the T-tins. That virtually makes the bottoms of the sections ½-inch longer, and prevents any dropping down at the end.

I have not tried supers 17¼ long, but the fact that I can, and do, shorten some of the 17⅞ ones ½ of an inch by putting in the strip

Dr. Miller's Question-Box

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Reinforced Comb Foundation

1. Is the reinforced comb foundation safe with two wires in a Langstroth frame in the brood-nest?

2. Is the extra-thin surplus reinforced comb foundation drawn out quicker in cool nights, like in Nevada, than the thin surplus comb foundation?

3. Is the midrib less in it than in comb foundation not reinforced? and do bee-supply dealers and manufacturers of comb foundation offer to sell it?
UTAH.

ANSWERS.—1. It ought to be safe with almost any kind of reinforcing, although I do not know to what kind of reinforcing you refer.

2. I don't think I ever before heard of extra-thin surplus reinforced foundation, but I don't think it would be drawn out quicker than other foundation.

3. I don't understand this, and I don't think I ever saw such foundation for sale.

What Ailed the Bees?

I have found that about ⅔ of the bees of this locality died with the brood-chambers full of honey, with no brood. What was the cause?

I had 2 swarms of bees this spring by May 4.
INDIANA.

ANSWER.—You do not say when the bees died. One would naturally suppose in the winter; only you say there was no brood in the hive, and that looks a little as if they died in the spring after brood ought to be present. It is of course impossible to say without knowing more about the case, but if they died in winter it might be that they starved to death with much honey in the hive, because the steady cold so long continued did not allow them to leave the cluster to reach out where the honey was. Again, the trouble may have been diarrhea. Of course, one would not expect brood in the hives in winter; but if they died after time for brood in the spring, I don't know what the trouble was. It might be queenlessness, only that would hardly be on so large a scale.

A regular swarm as far north as you are so early as May 4 is something remarkable; but this was a very remarkable season.

Dequeening—Queen-Cells for Requeening

1. Is it a good practice, if working for extracted honey, to requeen by dequeening shortly before the close of the main honey-flow, if followed by two months with little nectar and then enough fall honey for wintering?

2. Will a sealed, or nearly sealed, queen-cell, at the close of the honey-flow, be accepted shortly after dequeening to the exclusion of cell-building?

3. Would it be an advantage to give more than one queen-cell?
VIRGINIA.

ANSWERS.—1. Yes, with a string to the answer. Some, perhaps, would have no string. But I wouldn't like to dequeen a colony that had a good queen, unless I felt sure she would get a better one. Even if you give a young queen reared from choice stock, you are not always certain of any improvement since you don't know what drone she may mate with. It is safer to requeen only the

third or half of the apiary that has done poorest work.

2. If the queen-cell be unsealed, or sealed only a short time, you may count on other cells being started, with possibly swarming as soon as the virgin from the cell given is ready to go with the swarm. If the virgin is nearly ready to emerge, although cells may be started there is more likelihood that the bees will tear them down. Something depends upon how dearth the dearth of honey is. The safest thing is to give a virgin that is not more than 12 hours out of the cell.

3. Yes, and no. If either cell were bad, as sometimes happens, the other cell would make all right. But with 2 cells, there might be the chance of swarming.

Queen-Cells and Swarming

1. At what stage in the development of queen-cells are bees apt to swarm? How long before or how long after being capped over?

2. Am I correct in my understanding that they are capped over 7 days after the eggs have been placed in them?

3. Is there any way of determining accurately the age of the larva, or, in other words, how long it has been in process of development, without waiting for it to be sealed over?
NEW JERSEY.

ANSWERS.—1. About the time the first queen-cell is sealed. Of course it may be delayed after that time if weather is unfavorable.

2. It is possible that in some cases matters may be hurried as much as that, but the rule is: 3 days in the egg, and then 5 days of feeding. That would make 8 days after the laying of the egg.

3. Nothing very definite. In general terms it may be said that the larva makes most of its growth in the last 2 days of its 5 days of larval existence; and I think it doesn't cover the bottom of the cell till after it is 3 days old.

Starting With Bees

1. Would you recommend a full colony or a 3-frame nucleus with a tested queen for a beginner?

2. Will you kindly explain how to handle the super when examining the brood-frames?

3. Would you start with common black bees and a good Italian queen, or with all Italian bees?
PEORIA.

ANSWERS.—1. Get the full colony if you can get one near at hand. If you have to send off a distance, get the nucleus, as expressage on a full colony would make it very expensive. If you care nothing for expense, get the full colony in either case.

2. I suppose you want to know what is done with the super while you are examining the frames. Set it with one end on the ground, the other leaning against the body of a tree that is within reach, or against another hive, or even against the hive at which you are working. Of course the bottom of the super will face toward the tree or other object of support. Another way is to place the cover of the hive flat on the ground and stand the super on one end on the cover. This applies only when the cover is flat. Or set the super on end on another hive. If

$\frac{1}{2}$ thick seems to show that $17\frac{1}{4}$ would be enough. Unfortunately some of my supers are a little more than $17\frac{3}{8}$, not being made as accurately as they should have been, although made at a regular hive-factory. No great harm comes from a loose fit if it were not that it allows the sections to drop down at one end.

2. I don't think all producers of bulk honey use frames of the same depth, and it is probably not very important as to the depth. Those who, like Mr. Scholl, use brood-frames prefer, I think, to have the surplus-frames of the same depth as brood-frames. I don't know, but I should suppose, that any one who makes frames any shallower than the regular Langstroth ($9\frac{1}{8}$) would prefer them still shallower than yours, which are $7\frac{3}{4}$ inches deep, outside measure, which is only $\frac{3}{8}$ of an inch shallower than the Langstroth frame. Wouldn't 6 inches be deep enough for you? That would leave the honey-comb 5 inches deep with top and bottom-bars $\frac{1}{2}$ inch thick. But don't you think a bottom-bar $\frac{1}{2}$ inch thick is unnecessarily strong? Most people would be satisfied with $\frac{3}{4}$ inch.

Queen-Rearing and Swarm-Prevention

1. What method of larvæ transference do you use in queen-rearing? Do you think that of transferring cocoons superior to dry cell and jelly?

2. Do you ever raise the back of the inner cover on hives for summer ventilation?

3. Would a good method of requeening and swarm prevention be to take the queen from the colony making preparations, and after they start cells to graft larvæ from the breeder in their cells after destroying the inmate of the cell?

4. What is the best method of transferring bees from a box?

ILLINOIS.

ANSWERS.—I. I don't use either way. Formerly I used both ways, and preferred transferring cocoons.

2. I have no inner cover, and I don't raise the cover for ventilation. But I do what is equivalent to it: I let the super come far enough forward to allow a space of $\frac{1}{4}$ inch for ventilation. This very often through the hot weather. It has its objections when working for comb honey, but the advantages are greater. It has not the same objection for extracting work.

3. In experienced hands the plan ought to work well.

4. Let the colony in the box-hive swarm, and 3 weeks later, when all worker-brood has emerged, break up the hive and melt the combs, adding the bees to the swarm.

May Not Be Foul Brood—Treatment

How far am I off? They say what people don't know don't hurt them, but what I don't know at the present time about European foul brood hurts me beyond compare. First I will try to describe the looks of the brood I suspect of being diseased. Brood in the larval state, probably one in 25, seems to be shriveled, and does not have that clear, white, transparent or watery appearance. Also, the brood in the pupal state should always be capped (as I suppose), but it is not capped, but I can see those purple eyes through a small hole left not sealed, which looks as though they had started their work but had not finished it. But still they seem to be alive; at least, they move their antennæ or feelers, and the mandible, or jaw, although some would not move; they were all intact, firm, and of one color. Still I am satisfied that some of this brood in the larval state is dead. This has come suddenly to me, and I suppose with close attention I can decide whether this is European foul brood or not. But I would like your opinion. The above conditions exist in about 7 colonies out of 90.

The main object with me is to get your judgment on the following treatment that I have been studying over for the last few days:

First, fill a super with chunk-honey frames, drawn combs, or foundation. Go to the diseased colony, remove it from its stand, put said super on the stand in the place of the old hive, shake the same as a shook swarm; put another super on top of this one the following day, with an excluder between (chunk-honey super preferred). Now returning to the old body I will say, set it by the side of said super, and handle on Atchley plan. Of course, I don't expect to follow that plan to a finish, but I will leave enough bees in the body to protect it until the 21 days have expired, then I will shake them and remove the body for 4 days, return it to

its own original stand (after removing super), return the bees to it and hatched brood in the super the same as done in the body. My idea is to get some honey and at the same time cure the disease. Yes, I can almost see you smile when you think of those big bunches of pollen I will have in that upper super, but the chunk-honey man gets very handy with the knife, you know. Yes, again, I will not have a glutted brood-chamber with all young queens, with a chance for a record breaker the following year, that is true. I will also add that I don't expect to make honey or money without a big lot of work. But do you think it will cure? and is "the game worth the candle?" OREGON.

ANSWER.—From your description I have some doubt whether your bees have European foul brood. Send a sample of the diseased brood to Dr. E. F. Phillips, Department of Agriculture, Washington, D. C., and you will get positive information. If you write him in advance he will send you a package and frank, so postage will cost you nothing.

I don't know whether your plan will cure, but it doesn't seem to be giving the best chance for a cure. If I understand correctly, you are expecting the bees to clean out the combs, and are leaving only a few bees with the combs to do the cleaning. A weak, discouraged lot of bees can not be expected to be very energetic about cleaning up. If you want to save the combs and also get a crop of honey, why don't you try the Alexander plan, or a modification of it? First, see that the colony is *strong*, or make it so. Remove the queen. Ten days later destroy all queen-cells and give the colony a virgin queen of pure Italian stock, or at least of vigorous stock. But perhaps there is no foul brood among your bees, and by the time this is in print all the bad symptoms will have disappeared, in which case they will not need any treatment.

Relative Merits of Bees

1. What are the relative merits of Golden Italians, 3-banded Italians, Caucasians, and Carniolans, for this region?

2. Having 3-banded Italians, could Caucasian queens be introduced? and would they mix with my present strain?

ILLINOIS.

ANSWERS.—I. Answering in a general way, I should say that the 3-banded Italians were likely to take the lead for good results. Either of the others has its admirers who find it superior to the 3-banded Italians, but others give different testimony. Perhaps this may be because of difference in individual colonies. At any rate, the great majority, I think, consider the 3-banded Italians the ones to tie to.

2. A Caucasian queen could be introduced into a colony of Italians, and there could hardly be said to be mixing in that colony, for in less than 2 months there would be nothing but Caucasians in the hive. But there would be mixing afterward, for the next young queen reared in the Caucasian colony would be likely to meet an Italian drone. Also, Italian virgins in other colonies might meet Caucasian drones.

Questions by a Beginner

1. I purchased a 3-frame nucleus this spring, receiving it May 5. I have been feeding them ever since I got them. Do you think they will be strong enough in about 4 weeks to store any surplus honey, the flow beginning about June 5?

2. Would you think that a 3-frame nucleus would be strong enough colony since May 5 so I could take another 3 frames of brood and bees out of the colony about July 15 and start another colony? Of course, I would have to buy a queen, and get them strong enough for the winter.

3. What is a division-board in a hive for? How is it used, and where would you place it to get the best results?

4. How can you tell a queen from the rest of the bees? Mine are all Italians.

5. I have seen more or less in the American Bee Journal about using 2-story hives. How would this work? Place a hive minus the bottom on top of another hive, and let the queen and bees enter the same as the lower; let them breed in the upper story, and use the lower for stores; that is, do it in the fall of the year? Would you have to leave this upper story on all the time, or could I take it off in the spring? Would such a colony store more honey than in a single story? Which is best? I am a beginner in the bee-line. I had 4 colonies last year and they all

died last winter. So I started fresh again this spring with a 3-frame nucleus. I will let you know what luck I have had, some time this fall.

I have been getting the American Bee Journal for 6 months, and I am well pleased with it. If I live long enough I may be a bee-keeper some day.

ILLINOIS.

ANSWERS.—I. Quite likely they may. Yet there is nothing certain about it. Something depends upon the strength of the nucleus, for all 3-frame nuclei are not equal in strength. If strong, in as good a season as this promises to be, they ought to yield a good surplus.

2. Yes, if of good strength, and the season good.

3. A division-board may be used to separate a hive in 2 parts, either to contain 2 colonies or 2 nuclei, or to make the room smaller for the one colony in the hive. Division-boards are not used a great deal. In many apiaries none is used. Dummies are much used, and these are often incorrectly called division-boards. A dummy is a board, generally thin, of the same size as a brood-frame, and having a top-bar. Almost invariably an 8-frame hive contains a dummy. The 8 frames do not quite fill the hive, and the dummy is put in at one side to fill out the vacant space. It is easier to lift out the dummy and then lift out a frame than it would be to lift out a frame if the frames filled the whole space. Ten-frame hives are generally made so they need no dummy. I don't know why.

4. Look for a bee longer than the rest, and with wings that look too short for the length of its abdomen. You'll not be likely to miss it the first time you see it.

5. It wouldn't work the way you seem to expect. Bees like to have their stores above their brood, and if you gave them an upper story they would use that and not the lower one for stores. Whether it would be a good thing to have 2 stories depends upon a good many things—too long a story to go into here.

From some things you say I suspect you have no bee-book. It will be money in your pocket to have one. It might save the cost of the book several times over just in the matter of wintering alone.

Keeping Ants Out of Hives—Clipping Queens

1. What is good to keep ants out of beehives? We are bothered with them so much. We shake them off every day, but they don't seem to stay out. Will it hurt the bees?

2. We had a colony that did not have a queen in the spring, and the rest had. When I looked for the queen the next day in the hive which stood near that one, I found the queen had walked over in the queenless hive. Did you ever hear of anything like that?

3. Is it best to clip the queen's wings?

WISCONSIN.

ANSWERS.—I. Generally, the kind of ants that trouble bees in your part of the country do no serious harm. More than anything else, they like to make their nests over the hive because it is warm there. The bees will drive them out themselves, if the bees can get at them. The prevention is to have no place where the bees can not get if ants can get there. If there is a quilt over the frames that closes down so no bee can get above the quilt, and then a cover over that with a crack big enough for the ants to crawl through, that makes the nicest kind of a warm shelter for the ants. Some keep ants out by having legs to the stands, the foot of each leg standing in a little dish containing water or some offensive substance the ants will not crawl through.

2. I'm not sure I ever knew anything exactly like it.

3. I wouldn't like to keep bees without having the queens' wings clipped, and I think most bee-keepers are of the same mind.

A Beginner Asks Some Questions

1. I use foundation starters in all of my new hives. Would you advise the use of a bee-feeder inside of a hive filled with syrup where a new swarm of bees is to be put? and do you think this will bait the bees so that they will not leave the hive, which they sometimes do?

2. They say if a swarm of bees goes southwest and stops, and you have them, they will stay; but if they go southeast and stop, and you have them, they will not stay. What is your opinion? or give the reason why?

3. Will bees go in old hives as well as new ones when they have become damp inside

several times, but have never been used before?

4. A neighbor places common boxes up in trees and catches stray swarms. Is there anything a person can put in a hive that will bait a swarm to the box placed in a tree?

5. Will it be all right to cut a small hole on top in the hive-box, and place a screen over it for ventilation when I transfer bees from boxes into new hives?

6. I have a super on a hive with pound-boxes and starters, and have no queen-excluder between. It is filled with bees, and I'm afraid they have drawn out the combs and the queen has deposited eggs in them. What should I do with the super? Put it on the new hive when the bees swarm, or leave it on the old hive?

7. Have bees a location in view before swarming? If so, have they this location prepared ready to enter?

8. Is there a young queen in a hive before the old one leaves with the first swarm? How soon does she take her mating flight? How often does a queen mate in a lifetime?

9. I have some bees that have 2 and 3 yellow stripes or bands across their backs, back of the wings, and are some larger than the blacks; also, more savage. Is there any Italian blood in them?

10. What date of the month is the American Bee Journal published? I get it on the 16th of the month, and can hardly wait until it comes.

ILLINOIS.

ANSWERS.—1. If the weather is unfavorable, or if for any reason the bees of a swarm can not gather when they are first hived, it is an excellent plan to feed them. But can you afford to use only starters in your brood-frames? The bees will be pretty sure to build a good deal of drone-comb unless the frames are filled with foundation; and having much drone-comb is expensive business.

2. And what will they do if they go just half way between the two directions? I don't think there's anything in it at all.

3. Yes, if the hives are sweet and clean.

4. Yes, if you can put brood-combs in it. If the combs have been used but are still sweet and clean the bees will like them better than any empty hive.

5. Yes, but it is not necessary.

6. If there is brood in the super, and you want it to continue there, put the super over the swarm as soon as it is hived. If there is no brood in the super, give it to the swarm 2 days later. If you give the super to the swarm before the queen has begun to lay in the brood-chamber, there is danger that she may go up in the super.

7. I don't know. I suspect they generally have a location in view. I've seen them cleaning out a place 2 or 3 days before swarming.

8. Before I forget it, I want to tell you that it will be money in your pocket to buy a good bee-book. It will answer a whole lot of questions about things that you ought to know and may not think to ask about, and the knowledge you would gain on a single point may be worth twice the cost of the book. But I'll answer these questions now, and not make you wait till you get the book, for there will be plenty of other questions to ask after you get the book.

When the first swarm issues there is no young queen in the hive except those in queen-cells. The swarm emerges about the time the oldest queen-cell is sealed. The young queen takes her wedding-flight when she is 5 days old or older. She mates only once in a lifetime; but some say there are exceptions to this rule.

9. Bees with 2 and 3 yellow stripes probably have more Italian than black blood in them.

10. The American Bee Journal is published from the 12th to the 15th of each month. I'm always anxious to see it, too, and sometimes I wish it would come sooner in the month. But if it did, we'd have to wait just as long between meals for the next, so where's the odds?

Getting Bees into Other Hives

Last spring I bought 5 exceptionally strong colonies of bees in large hives. This spring I have been considering different plans for getting them out of the hives. There is the old plan of letting the bees swarm, destroying the queen-cells in the hive, and shaking the bees of the old hive into the new one, when in 21 days none will be left. I have been considering two variations of a different plan, but would like your opinion before putting either into practice.

1. My bees are all very strong, some of them starting work in the second stories.

Suppose that about June 1, or when the queen begins laying in the upper hive-body, I put a queen-excluder between the stories. After all the brood has hatched I could remove the lower story filled with honey. Could I put this honey over a colony after the honey-flow and get them to put it into sections by uncapping it? I know they would fill the brood-chamber, but would they go further if several supers were between them and the honey?

2. The other plan I had in view was to put a bee-escape board between the two stories, and put a piece of wire-screen over the old entrance, forcing the bees above as soon as hatched. By this plan, the bees could not fill the lower combs with honey, but would so many bees go above that the brood would not be sufficiently covered? In either case would I need to destroy queen-cells below? Perhaps there is some difficulty that I have not thought of. I shall await your reply with the greatest of interest.

ILLINOIS.

ANSWERS.—1. Looks as if it might work; but I've tried it and it was a failure.

2. I don't think there would be so much danger of brood being chilled as there would be of thirst. But you could furnish water. I don't believe it would be necessary to destroy the queen-cells below.

Transferring Bees—Text-Books—Crosswise Combs—Chunk vs. Comb or Extracted, Etc.

1. I have bought 12 colonies of bees in box-hives from a neighbor. I got them at 75 cents per hive. Don't you think I got them cheap?

2. The hives are full of bees, and I want to transfer them. Would you advise me to transfer now, or wait till the old hives are filled with honey?

3. Would you use the old combs, or full sheets of foundation?

4. I am a beginner. What text-books would you get?

5. How do you make queen-candy?

6. I have one colony with combs built crosswise. How would you manage to get them straight?

7. Do you think I could do better running for chunk honey than for comb or extracted?

8. Does it pay to use full sheets of foundation in the brood-nest?

GEORGIA.

ANSWERS.—1. If you succeed in everything else in bee-keeping as well as in buying your bees, you ought to beat us all.

2. The honey is in the way in transferring; so you better not wait. Nowadays it is considered better to let the bees swarm, hiving the swarm in a movable frame hive, setting the swarm on the old stand with the old hive close beside it, a week later moving the old hive to the opposite side, and then 21 days after the swarm issued breaking up the old hive. At that time all the brood will be hatched out except a few drones.

3. By the way I have mentioned you would use foundation.

4. Root's "A B C and X Y Z," "Dadant's Langstroth," and "Cook's Manual" are all good.

5. Warm a little extracted honey, knead into it powdered sugar until you have a stiff dough. Let it stand a day or so, and if it seems a little soft, as it likely will, work in some more sugar until it is stiff.

6. That depends altogether on the condition of affairs. It may be part of the frames are straight and the others only a little crooked. In that case you may be able to cut away the attachments and straighten the comb into its own frame. If all the combs are very crooked, you may consider it as a box-hive.

7. I don't know; but likely you would.

8. Yes, indeed.

Making Increase—Queen-Rearing

I am a beginner in the bee-business. I have some black bees, also some Italians. I would like to know if I could take some queen-cells from the Italians in May or June, and divide the black bees and get an increase of Italians. Those who rear queens seem to quote prices very high. Please give me the best way to introduce the cells, or can I clip the cells and rear some queens?

NORTH CAROLINA.

ANSWER.—You can buy queens for a dollar apiece or less, which doesn't seem very high. If you go into the business of rearing queens you will not make a fortune at such prices. For all that, it is a good thing to know how to rear your own queens. You can utilize the queen-cells from your Italian

colonies nicely in the way you propose. Suppose the Italian colony has swarmed. If the weather was favorable for 2 or 3 days before the swarm issued, you may cut out the cells about a week after the issuing of the swarm. But if the weather was rainy or cold for 1, 2, or 3 days before the issuing of the swarm, then you must cut out cells that much earlier, because the swarm may have been delayed by the weather, making the cells just so much more advanced, and if you wait too long you may find the cells destroyed.

About 2 days before you cut out the cells, destroy the queen in any desired colony. Then when you cut out the cells, give one of them to this colony. Use a hive-staple to pin the cell on the side of a comb, letting one leg of the staple be sunk in the comb, while the other holds the cell in place. Let the cell be centrally located so there will be no danger of its being chilled.

If you want to rear some queens, break up the dequeened colony into nuclei, using 2 or 3 frames of brood with adhering bees for each nucleus, and giving it a cell.

"La Loque" or Foul Brood

I am a honey-producer myself on a small scale, and I fear that my bees are suffering from "la loque." If so, how would it be seen, and what is the best remedy or treatment for curing same?

CANADA.

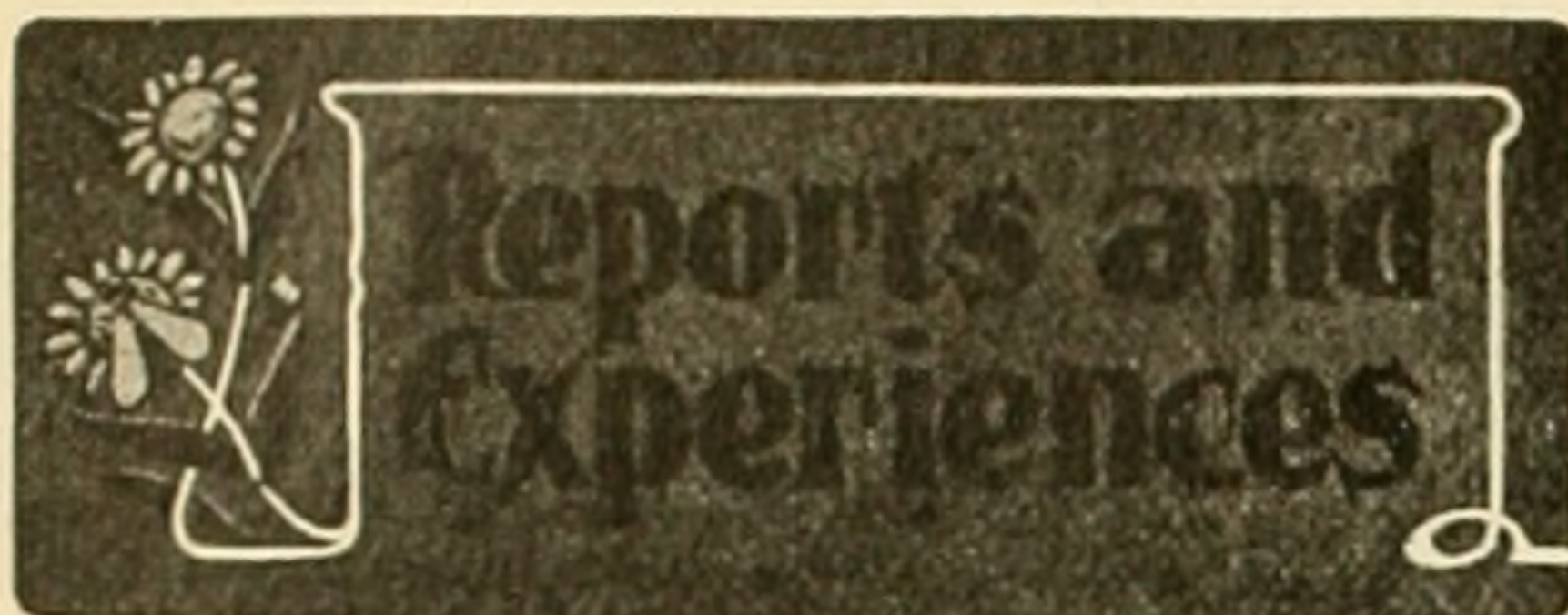
ANSWER.—"La loque" is simply the French name for foul brood. A more or less foul odor accompanies it, and the most marked feature is the stringiness of the dead brood. Thrust a tooth-pick into one of the rotten larvæ, and as you draw it out the decayed matter will stick to the tooth-pick and string out an inch or so before it breaks. The usual cure is to take away all the brood at a time when bees are gathering freely, leaving the bees on frames with shallow starters, taking these away 4 days later and replacing them with frames filled with foundation. This is the American foul brood. European foul brood, or black brood, is not generally so foul-smelling, and there is little or no stringiness. It may have the same treatment as the American variety, and it may also have the Alexander treatment, thus: Kill or remove the queen. In 9 days destroy all queen-cells. On the 20th day after removing the old queen, give a ripe queen-cell or a virgin just hatched, the cell or the virgin being of pure Italian stock. Some have reported success by destroying queen-cells 10 days after the removal of the old queen and giving a virgin at the same time. But remember that the Alexander treatment is no good for the American foul brood.

Queen-Cells Above Queen-Excluders

1. Since my first sight of queen-excluders my enthusiasm for them has been at white heat, but rush of work in spring-time has, until the present, prevented my putting them on just at the opening of the sage bloom, which was about April 20 to 24. I placed one on every hive I have above one super high. For reasons that only concern the writer, I left all brood from the egg to maturity above the excluder. Within the usual time it takes to set them, almost every colony was filled above the excluder with queen-cells. I make a quick job of going through them all and destroying the cells. I noticed before I got to the end of my job that the bees had torn them down in some instances, and in some they had not. What would the result have been if I had not destroyed these queen-cells? Would they have superseded the queens? I frankly acknowledge that the matter puzzled me, and that I am still puzzled.

CALIFORNIA.

ANSWERS.—1. When brood is put over an excluder, the queen being below, the bees sometimes start queen-cells and sometimes they don't. After starting them, sometimes they destroy them and sometimes they don't. In the cases where they do not destroy the cells, if you had not interfered, a young queen would in time have emerged. Then the remaining cells may have been destroyed, or they may have been left and an attempt made to swarm. The young queen or queens being imprisoned above could not get out with the swarm, but the old queen could, and would. In any case the young queen could not get out to be fertilized, and I don't know what would happen then. Perhaps the bees would worry her to death when they found she was not coming up to their expectations; and perhaps she would go to work as a drone-layer.



Prospects All Right for Honey

I have about 20 colonies of bees. The prospects are all right for a good honey-flow here from white clover, which is just beginning to bloom.

JAS. I. ESTE.

Liberty, Mo., May 21.

Hard Spring On Bees

I have 31 colonies of bees left. But this has been a hard spring on them. I have been feeding them so as to keep them strong. I notice this morning that they have commenced to gather pollen again.

Monticello, Mo., May 6. JAS. W. ANTRIM.

Bees Wintered Well

My bees are still alive. We are having some of everything but good weather. Bees came out this spring very well, in view of the honey-dew they had for winter stores. I wintered 26 colonies out of 27, outdoors.

J. C. CUNNINGHAM.

Streator, Ill., May 16.

Bees Hustling Now

My bees are doing nicely. We have had rather peculiar weather until lately, and now the bees are making up for lost time, as the fruit-trees are in full bloom and seem to be yielding some nectar and lots of pollen.

Sheffield, Ont., May 16. TOM COOLEY.

Warm and Then Cold

We had warm weather in March, and it was cold in April and May. The early fruit-bloom is ruined. I divided my heaviest colony April 1st, and bought a queen for one part. The result is 2 good colonies that will be ready for the honey-flow.

Waseca, Minn., May 16. EDWIN EWELL.

Feeding Bees in May

Bees are in a deplorable condition. I have to feed to keep them from starving. Everything was killed by the frost but the clover, which is just beginning to open. I plucked the first heads yesterday, so there is hope for relief from feeding soon. I have about 75 colonies left from 90 put into winter quarters last fall.

A. WICHERTS.

Matteson, Ill., May 24.

Warm Weather Needed.

The prospect for a good honey crop is very favorable. While the spring has been cold and wet it has been favorable to the growth of white clover, as it seems to branch out and grow better with a cool spring. The fruit-bloom was frozen and killed, as was also the black locust bloom. Bees will be in a starving condition unless the weather clears up soon, as there is no bloom to gather from at the present time. Should the weather turn warm there will be plenty of bloom soon.

My bees wintered better than ever here, as I lost only a few colonies, and none were as much weakened as you would expect after as hard a winter as we had.

W. H. SWEARINGIN.

Epworth, Ky., May 9.

Side-Line Bee-Keeping—Home Market

I still think as much of "Forty Years Among the Bees" as ever. I often have occasion to refer to it, and find it full of useful information on bee-keeping. I have kept bees as a side-line of minor importance ever since the year 1867, with varying success. I use mostly the 10-frame Simplicity hive, wired frames. When I get more than 20 or 30 colonies on hand, I simply smother the rest with brimstone in the fall, extract the honey and keep the empty hives over, away from mice, and use them the following season to hive

new swarms, as there is but little demand for bees here; people like the honey well enough, but they dread bee-stings.

I have 23 colonies of Italian and hybrid bees now out of 25, fall count, in chaff and dead-air space hives. I got \$50 worth of comb and extracted honey from 9 colonies, spring count, last season. I sold the best section honey at 13½ and 14 cents per pound, also had enough for family use on the table 2 or 3 times a day all the time. I sold my extracted at 75 cents per 2-quart Mason fruit-jar.

WM. H. MARTIN.

Highland, Mich., April 25.

Not Good Spring for Bees

My bees came through in pretty good shape; I had 3 queenless this spring. These were all I lost out of 68 packed in chaff on the summer stands. Last year I wintered 38 colonies and extracted 4000 pounds of honey, besides an increase of 30 swarms. This spring has not been very good for bees. We have had cold, windy weather most of the time when it is not raining, but I had quite a few good, fat combs of honey, and by putting one on flat right over the brood-nest, I have built up some of the weaker colonies in good shape.

R. RUTHERFORD.

Strange, Ont., May 10.

Bees Facing Starvation

After having a splendid start during March and early April, the bees in this vicinity now face starvation, unless fed heavily. We have had very heavy frost which has killed all fruit-bloom. The only source left is dandelion, and we have practically none of that here. One queen was occupying 5 frames 3 weeks ago; she is laying only in 2 now. The clover came through the winter in splendid condition, and the young clover made a fine start, but although we have had a fine spring since the frost of March, we have not had any rain yet, and the young clover is dying; the old is making no growth, but burning up on the south side of the hills. But we are hoping for the best.

N. P. ANDERSON.

Eden Prairie, Minn., May 8.

Worthless Bee-Census—Foul Brood

If all the rest of the census enumerators did as the one has done here, we won't know any more about the bee-keeping industry than if there had been no census taken at all. Our enumerator personally knows me. He asked the usual questions until it came to my occupation. I gave it as "Apiarist." He did not ask how many colonies I have, nor anything about the crop of honey or beeswax. When I asked him if he wanted that, he said no; that he would not make out a ranch list.

Foul brood has about cleaned up our bees in this county. There are only 23 colonies left in this (8) precinct, of which I am the bee-inspector.

It has been cold and windy, and the bees have been doing poorly. G. H. EVERSOLE.

Flora Vista, New Mex., May 21.

An Unfavorable Spring for Bees

In the spring of 1908 I came out with 50 colonies. It was cold and hard on bees in this northeastern part of Wisconsin, but as soon as the weather warmed up the bees built up quickly, and my crop was 4000 pounds of honey, and the bees had plenty for winter stores. But 1909 was poor. I had that spring 65 colonies that built up nicely for the harvest, but when we thought of getting a crop of honey, and the bees had started nicely to work, it was cut off by drouth, and left us with a very small honey crop of 1200 pounds for 1909, and the bees had to be fed in the fall for winter.

But this spring I have 80 colonies. It is so early that we were from 2 to 3 weeks ahead of other springs. March was so fine that my bees were all out of the cellar on the summer stands on March 21st, and on the 25th bringing in the first pollen. This is earlier than I have seen them do in the 15 years that I have kept bees. The outlook was good, but, oh! April and the first half of May gave them a knock-down, with cold, frost, storm and snow blizzards; the strong colonies held their own, but the weak ones dwindled down to nothing. Now we have fruit-bloom, and we hope to build them up yet to have them ready for a honey crop. Bee-keepers are always hopeful.

C. H. VOIGHT.

Tisch Mills, Wis., May 21.

From 1 Colony to 30 in One Season

May 20, 1900, a friend of mine, Harry Fort, of Washington Co., N. Y., got a strong colony of Italian bees from me; he wanted more, but I said, "No, let us see how many we can get from one colony." To my astonishment, we were able to increase that one to 30 strong colonies, the bees building all their own comb and rearing nearly all their own queens. We did it by dividing. We found it necessary to do some feeding near the close of the season, as the season was a poor one.

In order to give a description of the method followed in making the increase it will be necessary to tell what kind of frames and hives I use. The brood-frame I use is 11½ inches deep, and 11¾ inches long. It is nearly square, and known as the Gallup frame. I consider it the best frame for all purposes ever used. I have used the Langstroth and several other kinds, but do not like them. Bees winter better on the Gallup frames, being deeper. The honey-extractors cost less for this kind of frames, and the combs of honey hang in them the same as they do in the hive, making it easier to extract without much breakage of combs; while with the Langstroth frames very many break out when extracting heavy combs of honey, as they have to stand on end; at least, this has been my experience. Bees build up faster in the spring in Gallup frames, the hives being more compact.

Next is the size of the hive. I use 2 sizes, both of them of my getting up, one an 8-frame hive, which I use when running for increase and to winter bees in. The other 16 frames, being nearly 25 inches long, outside measure, is used for the production of either comb or extracted honey only. This I call my non-swarmer hive, and I never had a colony swarm when the hive was tiered up 3 hives high, and only one swarm when it was tiered 2 high, in 30 years that I know of. I make all of my hives with a half-inch above the frames and a half-inch below the frames. The bees winter much better this way. At the top the bees can readily pass to all the combs because they have plenty of room, and the heat is nearly all up there. I also use a cover with a 1-inch hole bored in the center to let the moisture out of the hive in winter. This is all the upward ventilation a strong colony needs. The hole is covered with wire-cloth. In the picture [See upper picture on the front page.—EDITOR.] you will see the little stones lying over these holes to keep the rain out of the hives. These ideas are original with me. This does away with chaff cushions and cloths of every kind; the bees can be wintered much better without them, as I have tried them and know.

I never use much comb foundation, only starters in the brood-frames and sections. A long time ago I discovered a substantial way of putting starters in the brood-frames without the use of wooden strips. The starter I use and recommend is only ½ inch wide. I like natural combs; they never sag, or at least I never saw it. These bees that I am about to tell you of built all their own combs except the starters.

The queen of the colony Mr. Fort got of me was one of the best layers that I ever saw. On May 20 I went to his place and examined the colony, and found 7 full combs of brood, and one comb full of honey.

Now this is the way I began the increase; I took the best two combs of brood nearest to the hatching and the comb of honey, with plenty of bees on all 3 combs, the queen included, to an empty hive quite a little distance away. I shook the bees from 2 more combs from the old hive into the new, knowing that many of the bees in the hive just made would return to the old hive. I now placed 5 new frames with starters in the hive where the queen was taken from. Note one thing right here, the queen-cells were reared where all the field-workers were. There were none with the queen. One week from this time I made 2 more small colonies from the queenless part, giving each part 2 nice queen-cells. Of course, the old hive with the one comb of brood was fully as strong as any, because most of the field-workers were there. Mr. Fort painted his hives, some of them green, some white, some red. Every young queen mated all right this time, and 4 colonies were soon strong ones. June 26, the hive where the old queen was, was packed full again. I then divided 9 in the same way as I did before, and one week later 2 more were made. July 24 the hive containing the old queen was full again, and I divided it that day, also with quite a number of the old hives, and one week from that time a whole lot were made.

Now we had gotten to a point where we

could go fast, and the yard was soon full. Aug. 28 we divided for the last time. We split 7 of the strongest colonies right in two in the middle as nearly as we could get them that way. Of course, the larger part of the nearest hatching brood was placed in the hives on the new stands with the greater part of the worker-bees; in this case we left the queens at home on the old stands. Of course, all the old field-workers would come back to the old places, and that was just what we wanted, because right here we safely introduced 7 Italian queens. The last colonies divided soon became strong.

When we had done dividing we found we had 31 colonies, but the queen of one of the hives was not laying as well as we thought she ought to, so we killed her and introduced an Italian queen, but failed. We then united this queenless colony with one of the weakest in the yard, which reduced the number to 30 colonies. I verily believe if we had put in young queens in the queenless parts as fast as we divided, we could easily have increased to 50 strong colonies from one.

The parent colony I let Mr. Fort have. I have marked with a point of ink on the cover; you will readily see it in the picture which I send. Mr. Fort's boy is also in the picture.

Twenty-one colonies were packed in dry sawdust, 3 in a box, last fall, in the yard, but fixed so they could fly if the weather was warm enough. The other 9 were put into the cellar to winter. I will send Mr. Fort's letter, and you can see for yourself how they have wintered—almost perfectly. Twenty colonies will be put in non-swarmer hives, and run for extracted honey the coming season, and later I will let you know how we get along. The other colonies will be run for increase.

Only 23 colonies can be seen in the picture.
G. H. ADAMS.
Rensselaer Co., N. Y., March 3.

[The letter referred to by Mr. Adams in the above reads as follows:—EDITOR.]

FRIEND ADAMS:—I was glad to hear that your bees wintered successfully. My bees are all alive except one colony. It was the last box we put the bees in. They all had a good flight, and have been out 4 or 5 days lately. This one I spoke about did not fly, so I thought I would look at it. I found it dead. The bees were all on one side of the hive. The honey was all used up. Some bees were deep in the cells. They had honey in the hive, but it was on the other side of the hive, so I guess they starved to death—too cold to move over to the other side. But I think I have done very well so far. My best colony was out terrible—that pride of mine, you know which one that is. I have quite a few colonies that are strong. I looked at those in the cellar the other night, and I found them all right, except, I think, they will need feeding very soon. I have sent for comb foundation, and expect it this week. Do you think I would better put water out where the bees can get at it, and flour? What kind of flour, if any? When should I take the bees out of the cellar? Have you taken yours out yet? You said you were going to take yours out in March this year. I will make my hives in April. Write as soon as you can because I depend all upon you.

H. FORT.
Washington Co., N. Y., March 10.

[We received the following from Mr. Adams May 7, which contains a further reference to Mr. Fort and his bees.—EDITOR.]

DEAR MR. YORK:—Mr. Fort had a large swarm from one of his colonies a week ago today (April 28). Washington County is one of the northern counties of New York State. I doubt if this ever happened before in all the ages of the past in this northern county. All of Mr. Fort's colonies are very strong—all ready to swarm.

Everything seems to be supernatural—beyond my comprehension. In all my experience I have never seen the like. I have never had a swarm of bees in April, and never had them swarm until the latter part of May.

Twenty of Mr. Fort's colonies will be put in the largest hives known—16 Gallup frames to the hive—and will be tiered 3 hives high, and run for extracted honey. The balance will be run for increase. I will try to keep you informed regarding this superior yard of bees—how much honey they store, and the amount of increase secured.

G. H. ADAMS.
Rensselaer Co., N. Y., May 5.

Wintered Well—Early Season

Nov. 15, 1909, I put 29 colonies of bees into the cellar, and on the morning of March 23d I took them out of the cellar and found that all had wintered in excellent condition. By placing them back on the same stands which they had occupied the previous season, there was no confusion or mixing of the bees. Upon examining the frames after the bees had had their first flight, March 13, I found brood in 1 to 3 frames in every hive, and when I examined them April 9, the brood was increased to 3 frames in the weakest, and 7 in the strongest. If the fine weather continues, bees will have the swarming mania before the middle of May. I am using a bottom-board with a space of 2 inches beneath the frames, and owing to neglect I failed to put false bottoms in place until April 9, and, as a consequence, the bees in the strongest colonies built comb between the bottoms of the frames and the hive-bottom, and the queens were laying eggs in the cells as soon as the cells were anywhere near completed. So, according to the rapidity in which the bees are building up, the weather, pollen, and nectar must be in excellent condition in this part of Illinois. The prospect for a clover crop is fine, the young clovers are plentiful, and I saw a few early clover blossoms April 10. What do you think of that for being early in the season?

C. J. GLENN.
Geneseo, Ill., April 22.

[We think that is altogether too early, especially so as winter seems to have come again. It was snowing hard in Chicago on April 25, at 4 p.m., and was quite cold.—ED.]

Bees Doing Well

My bees are doing as well as I ever saw bees do at this time of the year. I have 78 colonies, 68 strong and fine. I have had 30 swarms, hived 15 in new hives, and turned back the rest.

MRS. CARRIE BRANCH.
Ennis, Tex., May 2.

Reading and Hoping

My 100 colonies of bees are strong and on the *qui vive*. They seem too anxious to work right on through the comet's tail. The land is carpeted with white clover. But, alas! the weather is cloudy and cold. But I am reading the American Bee Journal, and hoping.

J. H. COLLINS.
Bardwell, Ky., May 17.

A Discouraging Prospect

I will say that we are going to experience a very bad year in regard to honey. It will be a totally dry year for our bees this year. I have 135 colonies, and I have to feed all. There are still over half that have to be fed, and if they can make their living until next year they would do very fine. The prospect of storing honey this year in this country has already come to a close. The bees can hardly find enough honey to make their living. No rain.

LOUIS YANNER.
Santa Susanna, Cal., May 14.

Distance for Pure Queen-Mating

Some think that to secure pure mating of queens there must be no other bees within 10 or 12 miles. I think it all depends upon the location. I keep 50 colonies here in a small valley or pocket in the hill, and ½ mile from me, over the hill, there are a few colonies of black bees. As I requeen every 2 years, I replace 25 queens each year; and I have kept a strict account of the mating of my queens, and for a term of 7 years I have 24 out of 25 purely mated. I rear my queens in small nuclei. I place a virgin in the nucleus, a perforated zinc excluder over the entrance to prevent the queen from falling out of the box before she can fly, and when she is 3 days old I remove the zinc to let her take her bridal trip. One day when I removed the zinc the queen came out, and after making a few circles around the hive she flew away. I sat down to watch to see how long she would be gone. In 8 minutes she returned, entered the box, and I could not see any evidence that she had met the drone. She remained in the box one minute, and in 10 minutes I heard her flying, but she did not enter the box. I waited 5 minutes longer, and she returned with plain evidence that she had met the drone, and in 4 days

she was laying, and her bees proved to be well-marked Italians.

When a queen is on the wing she makes a different sound from that of any other bee, so I know I am not mistaken; and as there are no other Italian bees anywhere near me, I believe the queen never left the yard very far. At other times when I have watched queens when released, they would not be gone more than 4 minutes, and would return with evidence of having met the drone, and in due time would be laying. Perhaps the drones go farther from the hive.

J. L. YOUNG.
Manhattan, Kans.

Disagreeable Spring

We have had a very disagreeable spring for queen-rearing. The prospect for a good crop of clover honey is good. White clover is just opening up, and there is also lots of sweet clover. All we want now is fine weather. The last 4 days have been cool and rainy, so bees could not get out. The temperature on several occasions within the past few days has been within 3 degrees of freezing. That's pretty cool for this time of year in this locality. However, we are hoping for better things in the future.

H. G. QUITRIN.
Bellevue, Ohio, June 1.

Early Season—Reading Bee-Papers

I wintered 12 colonies of bees on the summer stands last winter, and sold 3 colonies in March, leaving 9. On examination today I find 8 out of them storing honey in the supers—2 had the supers two-thirds full, 6 had the supers half full, and one had not begun to fill the super yet, so I think I can say that I have good bees, as this is only May 4—in fact, this is the earliest that I ever found my bees storing honey in the supers in my 30 years' experience with bees.

I have been a reader of the American Bee Journal for several years, and believe it is the best bee-paper for the person who handles bees in a small way that I have ever taken. I believe that every person who handles bees ought to take a bee-paper, even if having only one colony to care for. It will pay well in the end.

WELCH BIBBEE.
Cottageville, W. Va., May 4.

A Beginner's Report

Last spring I purchased my first bees (2 colonies), from which I received about 20 pounds of dark comb honey, and one swarm. The colony from which I took the honey (the one that swarmed) died last winter, and its offspring is very weak. Now, the other wintered well, and is in dandy shape for the clover, which is now coming into bloom. The 2 colonies (1½ colonies in one hive, and ½ colony in the other, making 2) have pulled through the winter on the summer stands without any extra protection. Under the conditions given, would they be more apt to be ½ colony each instead of what they are? The bees gathered a great quantity of honey-dew last year, too.

Bees have not wintered very well around here, but the few the winter has spared will, I believe, pay for their keeping, and then some. Here's hoping so, at least.

I gain much information from the American Bee Journal, and also pleasure in reading its contents.

BENJ. C. SHILLING.
Burkett, Ind., May 18.

[Under the circumstances you are to be congratulated that your bees came through as well as they did.—EDITOR.]

Poor Wintering—Swarm Control

Bees did not winter very well here—too much honey-dew. Out of 32 colonies I have only 21 left, including one that is queenless. One neighbor east of me lost all he had; another one, southwest, lost 9 out of 12, and I believe about this percentage of loss holds good throughout this section. I must add, however, that the most of our bee-keepers through this part of the country are from 25 to 50 years behind the up-to-date methods of bee-keeping.

Clover is looking fine—never saw a finer prospect. Fruit-trees of all kinds are loaded with bloom, and the bees have been having a regular picnic all through the spring and summerlike weather we have had during the past few weeks.

I have been reading Dr. Jones' method of swarm control, and am interested in it. However, I notice that the Doctor's experience has all been with 10-frame hives, while

mine are only 8-frame hives. Does he know of any one having 8-frame hives who has been successful with this method? If so, how many frames in each hive should be treated? A short article from Dr. Jones, in the American Bee Journal, relative to the above would be appreciated by myself, and, no doubt, by others of the readers who use 8-frame hives.
E. H. UPSON.
Cromwell, Ind., April 18.

[Dr. Jones is hereby requested to comply with Mr. Upson's request, if he will.—ED.]

The Census of Bee-Keeping

I have noticed in the Report of bee-keeping in Illinois, that there are nearly 55,000 colonies of bees, with a yield of 324,333 pounds of honey per year, and some other years much more in both bees and honey.

The Labor Bureau of Missouri have collected statistics, and give the number of colonies as over 41,000 for this State. I have been almost afraid to give these figures in talking about the bee-industry of Missouri, but I will be more bold after this, since I have seen the statement about Illinois bee-keeping. The figures for Missouri are as follows: Honey 6,015,000 pounds, worth \$760,000, which, with the value of beeswax obtained, would make, perhaps, \$1,000,000 from the bees per year in Missouri. I do not think they did so well last season, but hope they will do as well, if not better, this season. Prospects are for a good honey-flow in this section, although it continues too cold as yet for bees to work much. White clover is abundant, and commencing to bloom a little, and, as we have had plenty of rain, we are hoping for a good season.

I am disappointed in the taking of the census, as I had hoped to have a correct count on bees, but when the census-taker was at our house, he would not list the bees at all, saying that as I lived in the city, and as I could not report sales of garden and other products raised and sold from my place amounting to \$250 or more, his instructions were not to list any. If bees are listed at any place at all, I do not see why they should be left out in other places. If the general census is taken in that way it surely will be unreliable. It would have been a great help to the bee-industry if we could have a correct showing of what it is, and I am sure it can never be taken as easily as it could have been along with the rest of the census. I have seen reports of honey taken by counties, and in this county I have taken nearly as much as was named, and not including any other bee-keeper in the county, so the figures are not nearly what the industry amounts to.
J. W. ROUSE.
Mexico, Mo.

Field-Meeting of the New Jersey Bee-Keepers' Association

The New Jersey Bee-Keepers' Association will hold a summer Field-Meeting at Hackettstown, Warren Co., N. J., on Wednesday, June 29, 1910.

The program arrangements are not complete yet, but will include the following:

"Profitable Spring Manipulation in the Production of Extracted Honey," by Harold Hornor.

"Increasing the Sale of Honey by Systematic Advertising in the Grocery Trade Journals," by F. J. Root, Acting Manager of the American Grocer.

"Suggestions on Foul Brood Inspector's Laws," by John B. Smith, Sc. D., State Entomologist of New Jersey.

"Shall the New Jersey Association join the National Bee-Keepers' Association in a Body?"—a general discussion led by E. G. Carr. A vote will be taken on this proposition.

"Comb Honey," by Ralph Fisher.

All bee-keepers in New Jersey and adjoining States are invited.

Hackettstown is on the D. L. & W. railroad, and can be reached from all points on that line and connecting lines.

Bee-keepers and others are requested to bring along any new or improved appliance relating to apiculture. Bring samples of 1910 crop of comb and extracted honey. Perhaps a premium will be given for the best exhibit.

Programs will be mailed to all our members, and to any others who write the Secretary.

Pittstown, N. J.

ALBERT G. HANN, Sec.

Giant Radish From Japan

"SA-KURA-JIMA"

has been grown by our readers to a weight of 42 pounds and to a size of 10x18 inches

This wonderful radish was introduced from Japan several years ago by the United States Department of Agriculture, and was successfully grown last year by Fruit-Grower readers. We have secured the entire supply of seeds and offer it for testing.

10c—TRIAL PACKET SEEDS—10c

This is a late radish and may be planted August 1st. It should not be planted earlier than July 1st. Send 10c, coin or stamps, at once before seed supply is exhausted, and we will send you free a copy of The Fruit-Grower, the best garden and fruit magazine published. We will offer cash prizes for the largest radishes grown from this seed. Write at once.

THE FRUIT-GROWER, Box 910, Saint Joseph, Mo.

Please mention Am. Bee Journal when writing.

50,000 Copies "Honey as a Health-Food" To Help Increase the Demand for Honey

We have had printed an edition of over 50,000 copies of the 16-page pamphlet on "Honey as a Health-Food." It is envelope size, and just the thing to create a local demand for honey.

The first part of it contains a short article on "Honey as Food," written by Dr. C. C. Miller. It tells where to keep honey, how to liquefy it, etc. The last is devoted to "Honey Cooking Recipes" and "Remedies Using Honey." It should be widely circulated by those selling honey. The more the people are educated on the value and uses of honey as a food, the more honey they will buy.

Prices, prepaid—Sample copy for a 2-cent stamp: 50 copies for 90 cents; 100 copies for \$1.50; 250 copies for \$3.00; 500 for \$5.00; or 1000 for \$9.00. Your business card printed free at the bottom of front page on all orders for 100 or more copies.

Address all orders to

GEORGE W. YORK & CO.,

Chicago, Ill.

BEES, NUCLEI, and QUEENS

For many years I have been selling bees and queens, and guaranteeing satisfaction in every way. I will be in the business more extensively than ever during the season of 1910. I have mailed queen-bees practically all over the world. My prices the coming season will be as follows, for **Italian**

BEES

Full colonies with Tested Queens, in 8-frame Langstroth hive, \$7.00 per col.; in same hive with 10 frames, \$7.50. Colonies in lots of 5 or more, 25 cents per colony less.

NUCLEI

One 3-Hoffman-Langstroth-frame Nucleus, \$2.50; in lots of 6 or more at \$2.25 each; price of queens to be added. Orders for nuclei filled about May 10th to 15th, and thereafter.

QUEENS

Tested Italian, each \$1.50; 6 for \$7.50; or \$13.00 per dozen.

I have 50 choice Italian breeding-queens, either golden or leather-colored, at \$2.50 each. "First come first served."

Untested Queens After May 15

Italian (warranted) 75 cents each; 6 for \$4.00; or \$7.50 per dozen. Carniolan or Caucasian at the same prices.

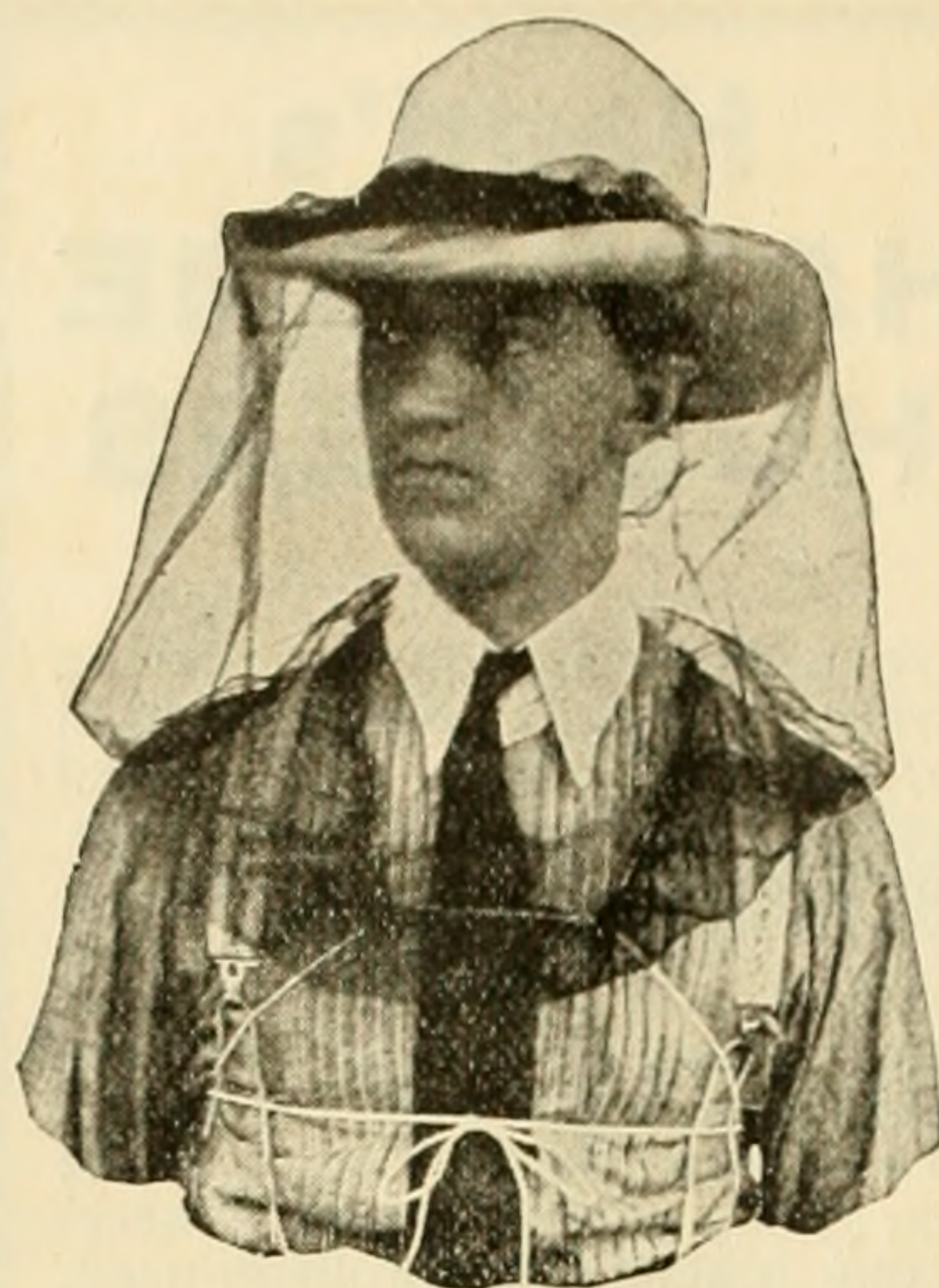
If you have never had any of my Bees or Queens, you should give them a trial. Satisfaction guaranteed. Address all orders to

ARTHUR STANLEY,
DIXON, LEE CO., ILL.

Good Queens

If you are going to want any Queens for increase, or replacing old queens next June, it is time to begin to think about it. I have been breeding leather-colored Italian queens for years, and they are giving excellent satisfaction. If you are interested, write. Good queens; no disease; prompt shipment, and absolute satisfaction guaranteed. Prices: June, one, 90c; three, \$2.50; six, \$4.75; doz., \$9.00; 20 or more at 60c each. 2A9t

S. F. Trego, Swedona, Ills.



ADVANCED BEE-VEIL

—POSTPAID—
All Cotton, 50c; Silk Face, 60c; All Silk, 90c

Made of Imported French Tulle Veiling; cord arrangement which permits wearer to handle bees in shirt-sleeves with no chance of bees crawling up and under veil. With a hat of fair-size brim to carry veil away from face, you are as secure from stings, movements as free and unrestricted, and as cool and comfortable as you would be at a summer resort.

Please send me two more bee-veils. I have tried all kinds, and yours are best of all.—N.E. FRANCE, Platteville, Wis.

Editorial Comment in Bee-Keepers' Review:—The Advanced Bee-Veil is something I have worn with great comfort the past few weeks. The peculiar feature of the veil is, the edges are held down firmly on the shoulders away from the neck. This does away with all chance of stings, and the hot, suffocating, uncomfortable feeling found in other veils that are tucked in close about the neck.—W. Z. HUTCHINSON.

A. G. Woodman Co., Grand Rapids, Mich.

QUEENS Golden, Red Clover, & 3-Banded QUEENS

Untested, 75 cents each; \$4.40 for 6; \$8.75 per dozen. Tested, \$1.00 each. Queens sent by return mail. 6Atf

DANIEL WURTH, Rt. 1, Wapato, Wash.

§ Caucasians, Carniolans, Banats, Cyprians §

Select untested queens, \$1 each; 5 for \$4. Imported breeding queens, \$5 to \$6. Send to original importer and get genuine stock. **FRANK BENTON, Box 17, Washington, D. C.**

QUEENS

AND BEES — an improved, superior strain of Italians is what QUIRIN REARS. All yards winter on summer stands with practically no loss. Our stock is hardy, and will ward off brood diseases.

Last spring we sent fifty nuclei to J. D. Nixon, La Farge, Wis., and on July 20th (same year) he wrote us saying they did just splendid, as at that writing they had already filled their supers, and that he would have to extract them. We have files of testimonials similar to the above.

	Prices before July 1	1	6	12
Select queens.....	\$1 00	\$ 5 00	\$ 9 00	
Tested queens.....	1 50	8 00	15 00	
Select tested queens.....	2 00	10 00	18 00	
Breeders.....	4 00			
Golden 5-band breeders..	6 00			
2-comb nuclei, no queen..	2 50	14 00	25 00	
3-comb nuclei.....	3 50	20 00	35 00	
Full colonies on 8 frames.	6 00	30 00		

Add the price of whatever grade of Queen is wanted with Nuclei and Colonies. No order too large and none too small. Will keep 500 to 1000 queens on hand ready to mail. Safe delivery and pure mating guaranteed. Over 20 years a breeder. Testimonials and Circular free.

QUIRIN-THE-QUEEN-BREEDER,
BELLEVUE, OHIO.

We have a Car of

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which we offer at 6 3/4 cents per pound. Samples on request.

C. C. CLEMONS PROD. CO.

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Please mention Am. Bee Journal when writing.

M. H. HUNT & SON

The best time to buy your goods is during the fall and winter months. We are making **Liberal Discounts for Early Orders**, and would like to quote you **net prices** on your needs for next season.

—BEESWAX WANTED—

LANSING, - MICHIGAN.

! ROOT'S GOODS ! For Pennsylvania

We carry a full line. Send us your orders and we will give you "A Square Deal."

Best Untested Italian Queens, \$1.00.
Best Tested Italian Queens, \$1.50.

REA BEE AND HONEY CO.,
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Scoggins' Strain of Bees

A Cross of Cyprian and Italians. I have been breeding this strain of bees for 7 years for honey, and they are the best honey-gatherers in the world. I have tried them all. If you want honey, try one of my Queens—75c to \$5.00. 6A3t

J. B. SCOGGINS, Fouke, Miller Co., Ark.

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Giant Radish From Japan

"Sa-kura-jima" Grown 10x18 inches. WEIGHT of 42 lbs. Introduced by U. S. Department of Agriculture and recommended by Wm. J. Bryan. We have all the genuine seeds available. **Trial Packet 10c.** May be planted LATE as AUG. 1. Send 10c stamps or coin at once, before supply is gone and will send free copy of The Fruit-Grower, best garden and fruit magazine. Cash prizes for largest radishes. The Fruit-Grower, Box 10, St. Joseph, Mo.

Crown Bone Cutter

Hens fed out green bone lay more eggs. Get a Crown Bone Cutter. Send to-day for catalogue. Wilson Bros., Box 814, Easton, Pa. **BEST MADE Lowest in Price**

Please mention Am. Bee Journal when writing.

American Bee Journal

New England Bee-keepers! **New Stock at Factory Prices**

—: PROMPT DELIVERY:—
Cull & Williams Co.
 Providence, - Rhode Island.
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Italian Bees, Queens and Nuclei



Choice Home-Bred Imported Stock. All Queens reared in Full Colonies.

Prices for July and After
 1 Untested Queen.... \$0.75
 1 Tested " 0.90
 1 Select Tested " 1.10
 1 Breeder Queen 1.65
 1-Comb Nucleus (no queen).... .80

Safe arrival guaranteed.

For price on larger quantities, and description of each grade of Queens—send for Catalog. Send for sample COMB FOUNDATION. 4Atf

J. L. STRONG,
 204 E. Logan St., CLARINDA, IOWA.

Golden Italian Red Clover Queens
Gray Carniolan Queens
BRED FROM IMPORTED STOCK

Prices after June 15th

	I	6	12
Untested.....	\$0.75	\$4.00	\$ 7.50
Selected.....	1.00	5.00	9.00
Tested.....	1.25	6.00	12.00
Selected.....	1.50	8.00	15.00

 Choice Breeders, \$3.00 up to \$5.00.

Choice Italian Queens mated in my Carniolan apiary—First cross, one for 60c; 12 for \$6.50; 25 or more, 50c each.

FIRST CROSS.—We have tested these bees and find them to be real hustlers. We have also had many calls for this very desirable bee. We have decided to offer them to the bee-keepers at the low prices above. Carniolans have many good points to recommend them to the bee-keepers, more especially this first cross. The drones are large and powerfully strong flyers, which gives vigor and strength to the bees. They cap the honey white, which most Italians do not. They resist diseases very much more than any other bees, and are quiet, gentle, and easily handled. 5Atf

CHAS. KOEPPEN,
 1508 Main St., FREDERICKSBURG, VA.

Bee-Supplies

Distributor of Lewis' Bee-Supplies at Factory Prices in Iowa. Also Red Clover and Leather-Colored Italian Queens; and the Folding Berry Boxes, and the old-style Boxes.

Beeswax wanted. Send for Catalog.
W. J. McCARTY, Emmetsburg, Iowa
 Please mention Am. Bee Journal when writing.

Golden and Red-Clover Queens... **From Extra-Selected Mothers**

Untested, 75c; six for \$4.00.
 Selected Untested, \$1.00; six for \$5.00.
 Tested, \$1.50.
 Safe arrival guaranteed. Twenty-one years' experience. Send your orders to

E. A. Simmons, Greenville, Ala.
 Please mention Am. Bee Journal when writing.

IF you need a nice yellow Italian Queen at once, send to **J. L. FAJEN, Alma, Mo.** Untested, only 75c. Tested, \$1.25. 3-frame nucleus with Queen, \$2.75. Full colony, in 8-frame hive, \$5.50. 6A4

Please mention Am. Bee Journal when writing.

Tennessee-Bred Queens!

**All from Extra-Select Mothers,
 Davis' Best, and the
 Best Queens Money Can Buy**

**38 Years' Experience in Queen-Rearing.
 Breed Three-Band Italian Queens Only.**

November 1st to July 1st			July 1 to Nov. 1				
	I	6	12	I	6	12	
Untested.....	\$1.00	\$5.00	\$ 9.00	\$.75	\$4.00	\$7.50	Select Breeder - \$4.00
Select Untested..	1.25	6.50	12.00	1.00	5.00	9.00	Nuclei; no queen 1 fr 2.00
Tested.....	1.75	9.00	17.00	1.50	8.00	15.00	" " " 2 " 3.00
Select Tested....	2.50	13.50	25.00	2.00	10.00	18.00	" " " 3 " 4.00
							Colony, " " 8 " 8.00

Select queen wanted and add price to price of nucleus or full colony.
 For queens to be exported, add 20 percent to these prices, except to Canada, Cuba or Mexico.

JOHN M. DAVIS,
 Dealer in, Importer and Breeder of
ITALIAN QUEEN-BEES

Depot, Telegraph and Express Offices,
 Ewell Station on L. & N. R. R. **SPRING HILL, TENN.**

Please mention Am. Bee Journal when writing.

HONEY AND BEESWAX

When consigning, buying,
 or selling, consult

R. A. BURNETT & CO.

199 South Water St. Chicago, Ill

Please mention Am. Bee Journal when writing.

EXTRACTING MADE EASY

by using

MILLER AUTOMATIC DECAPPERS

\$5 to \$35. Catalog Free.

APICULTURAL MANUFACTURING CO.,
 Providence, R. I. 7Atf

Please mention Am. Bee Journal when writing.

MARSHFIELD BEE-GOODS

FRIEND BEE-KEEPER—We are prepared to fill your orders for **Sections**. A large stock on hand. Also a **Full Line of Bee-Supplies**. We make prompt shipments.

MARSHFIELD MFG. CO.,

Marshfield, Wis.

IOWA—J. W. Bittenbender, Knoxville, Gregory & Son, Ottumwa.
 KANSAS—S. C. Walker & Son, Smith Center.
 MICHIGAN—Lengst & Koenig, 127 South 13th St., Saginaw, E. S.
 S. D. Buell, Union City.
 NEBRASKA—Collier Bee-Supply Co., Fairbury.
 CANADA—N. H. Smith, Tilbury, Ont.

ARIZONA—H. W. Ryder, Phoenix.
 MINNESOTA—Northwestern Bee-Supply Co., Harmony.
 ILLINOIS—D. L. Durham, Kankakee.
 OHIO—F. M. Hollowell Harrison.
 TEXAS—White Mfg. Co., Blossom.
 WISCONSIN—S. W. Hines Mercantile Co., Cumberland.
 J. Gobeli, Glenwood.



Root's Goods in Chicago

Last April we moved to this location. We were unable then to arrange our stock as we desired as the busy season was upon us. April, 1910, finds us in better shape than we have ever been since the opening of this office.

Our stock is now conveniently arranged, hence no confusion in filling orders. We now have on display in our show-room a complete line of our supplies. Call and see them. From this date we will have cars from the factory about every 10 days.

Have you received our catalog for 1910? If not, we want you to have it. A postal card request will bring one.

Gleanings in Bee-Culture

If you have not seen a late copy of our paper, which is issued twice each month, you can't tell from a brief description how much valuable information each issue of it contains. Each issue is fully illustrated. Our writers are the very best. A trial subscription of six months (12 different copies) will cost you only 25 cents.

Alexander's Writings

Mr. Alexander was one of the largest, if not the largest, bee-keeper in the United States, and what he has told of his methods must necessarily be of interest to large bee-keepers. He kept bees for over 40 years, and produced honey by the carload. His writings are practical, and what he has done others may do if they care to follow his teachings. Here is what a prominent bee-keeper says of his book:

"Alexander's Writings are the best thing I ever read; practical, enthusiastic, sympathetic, encouraging. I predict an enormous sale of the book. Why not get out an edition with cloth cover? It's worth while. Wish you could print more such books." WM. BAYLEY.

43 N. Brighton Ave., East Orange, N. J.

This Book is Sold only in combination with Gleanings

From now until January 1, 1911, we offer one copy of the Alexander book with every yearly subscription

to GLEANINGS, new or renewal. You get BOTH for subscription rate alone, which is only \$1.00.

Canadian postage, 30 cts.; foreign postage, 60 cts. per year extra.

Power Extractors

We believe all of our extractors are about as near perfect as it is possible to make them. For large apiaries one of our power machines is a great advantage. A circular of these will be sent upon request.

Read what a large producer says:

LANG, CALIF., Sept. 26, 1909.

Gentlemen:—Owing to the fact that power extractors are not in general use at the present time, it may be of interest to you to know that I used a Gilson engine "I H. P." together with the latest model of the 6-frame automatic extractors, "Roots," for this season's extracting. I was surprised and delighted with the work done. In extracting our heavy white-sage honey it not only cleans out the combs much cleaner than can be done by hand-power, but does it at a minimum of expense. The cost of gasoline and oil used being only 16¢ per ton of honey extracted. It takes the place of a man at \$40 per month and board, so one can readily see that it much more than paid for itself in the one season, besides doing much better work than could be otherwise. The above cost of extracting is given on the basis of gasoline at 25¢ per gallon, which is the cost here.

Truly,

H. A. SLAYTON.

Our Aim for the Season of 1910

This year we aim to give our customers the very best possible service. Remember, for low freight-rates and quick delivery, Chicago is as well located as any city in the United States.

Our Location and How to Reach It

The A. I. Root Co. INSTITUTE PLACE. 213-231

One block north of Chicago Ave., cor. Franklin St. Take any car going north on Wells St. Get off at Institute Place, ½ block west to Jeffery Bldg. Take elevator to 6th floor. Or take N. W. Elevated to Chicago Ave. and walk ½ block north on Franklin St. Tel. North 1484.

Elkhart Buggies

are the best made, best grade and easiest riding buggies on earth for the money.

FOR THIRTY-SEVEN YEARS

we have been selling direct and are **The Largest Manufacturers in the World** selling to the consumer exclusively.

We ship for examination and approval, guaranteeing safe delivery, and also to save you money. If you are not satisfied as to style, quality and price you are nothing out.

May We Send You Our Large Catalogue?

Elkhart Carriage & Harness Mfg. Co.
Elkhart, Indiana



Save
\$30

BETTER FRUIT

The best fruit growers' illustrated monthly published in the world. Devoted exclusively to modern and progressive fruit growing and marketing. Northwestern methods get fancy prices, and growers net \$200 to \$1000 per acre. One Dollar per year. Sample copies free.

Better Fruit Publishing Co. HOOD RIVER, OREGON.

W. H. Laws

BEEVILLE, TEX.

Is again ready with his Italian Queens. There is no mistake but the Red-clover Italians are the best bees known. Letters coming in nearly every day verify this claim. Just read this one:

DEAR SIR:—The bees from the queens you sent me last spring are breeding finely, gathering honey, and are NOT swarming. If all your reds equal or approach these they are the *best bees in the world*. If you can not fill my order at once that you have booked I am willing to wait, as I want none but yours. W. LEGETTE, D.D.S.
Taylorsville, N. C.

I have not dared to advertise until the present, nor reduce prices, as I should be swamped with orders. From the time this ad. reaches you I shall be in a position to fill all orders promptly, but always appreciate a few days' notice before orders are to be filled. PRICES—Single Queen, \$1; six for \$5.00; Breeders, \$5.00.

W. H. Laws, Beeville, Bee Co., Tex.

American Bee Journal

CAPON TOOLS



CAPONS bring the largest profits—100 per cent more than other poultry. Caponizing is easy and soon learned. Progressive poultrymen use **PILLING CAPONIZING SETS** Postpaid \$2.50 per set with free instructions. The convenient, durable, ready-for-use kind. Best material. We also make Poultry Marker 25c, Gape Worm Extractor 25c, French Killing Knife 50c. Capon Book Free. G. P. Pilling & Son Co., Philadelphia, Pa.

Line-Bred Queens!

Line breeding is scientific inbreeding, and it is the only way we can ever expect to reach perfection or have stock that will reproduce itself. As honey-gatherers I will put my strain up against any other strain or race in existence. Send 10 cts. for sample cage of bees and Booklet which contains information on rearing Long-Lived, Prolific Queens, Improvement of Stock, etc. Prices of Queens—Untested, \$1.00; Select Untested, \$1.25. I can furnish either Red Clover or Golden Italian Queens. My Queens are mated to Select Drones. I guarantee a well-pleased customer.

W. M. PARRISH,
Queen-Breeder,
Lawrence, - Kansas
Please mention Am. Bee Journal when writing.

PRIZE TAKERS

Pharr's Golden took first prize at 3 exhibits in Texas in 1907. We will furnish Golden, Carniolan, Caucasian, and 3-band Italian Queens, untested, \$1.00 till June 1, then 75 cents. Tested, \$1.50 till June 1, then \$1.00. For large quantities, write. Our 3-band Breeders from W. O. Victor and Grant Anderson strains; other races from the best obtainable. "Prompt service and satisfaction," is our motto. Address, 5Atf

NEW CENTURY QUEEN-REARING CO.
or **JOHN W. PHARR,**
Berclair, - Texas

Again to the Front with The Famous Banats



Having moved my Banat Apiaries from Sabinal to San Benito, Texas, I am now better prepared to furnish High Quality **QUEENS** and guarantee them purely mated. Prices: Untested Queens, each, 75c; per doz., \$8.00. Tested Queens each \$1.25; per doz., \$12.00.

My stock is pure and free from disease—the gentlest bees on earth.
GRANT ANDERSON,
2Atf SAN BENITO, TEXAS.

NORWOOD'S—Texas-Bred—QUEENS
Three-banded Queen-Bees bred for business. Try them, then you'll know. Untested, \$1.00; six, \$5.00. Write us. 5Atf **E. B. NORWOOD, Del Valle, Tex.**

"If goods are wanted quick, send to Pouder"
ESTABLISHED 1880.

BEE-SUPPLIES

Standard Hives with latest improvements; Danzenbaker Hives, Sections, Foundation, Extractors, Smokers, Veils, and a complete stock of

Root's Standard Goods at Factory Prices

My equipment, my stock of goods, and my shipping facilities, cannot be excelled, and I ship goods to every State in the Union. Illustrated and descriptive catalog mailed free.

Finest White Clover Honey

on hand at all times. **I Buy Beeswax.**



Walter S. Pouder, Indianapolis, Ind.

859 Massachusetts Ave.

Please mention Am. Bee Journal when writing.

HAND-MADE SMOKERS



Extracts from Catalogs—1907:

Chas. Dadant & Son, Hamilton, Ill.—This is the Smoker we recommend above all others.

α. B. Lewis Co., Watertown, Wis.—We have sold these Smokers for a good many years and never received a single complaint.

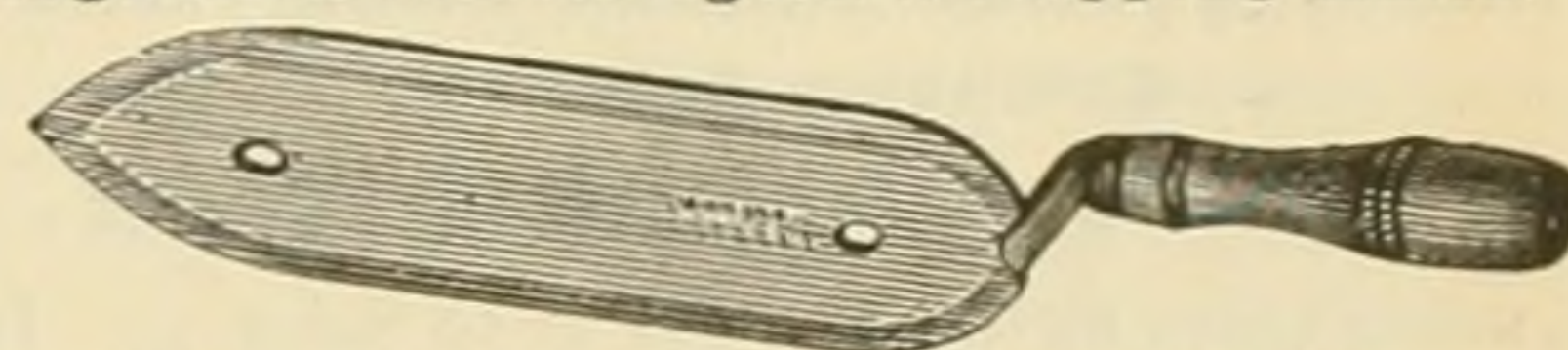
A. I. Root Co., Medina, Ohio.—The cone fits inside of the cup so that the liquid creosote runs down inside of the smoker.

All Bingham Smokers are stamped on the tin, "Patented 1878, 1892, and 1903," and have all the new improvements.

Smoke Engine—largest smoker made.....	\$1.50—4	inch stove
Doctor—cheapest made to use	1.10—3½	"
Conqueror—right for most apiaries	1.00—3	"
Large—lasts longer than any other.....	.90—2½	"
Little Wonder—as its name implies65—2	"

The above prices deliver Smoker at your post-office free. We send circular if requested.
Original Bingham & Hetherington Uncapping-Knife.

T. F. BINGHAM, Alma, Mich.



Patented, May 20, 1879. **BEST ON EARTH.**

Please mention Am. Bee Journal when writing.



DOOLITTLE'S

"Scientific Queen-Rearing"



This is G. M. Doolittle's master-piece on rearing the best of queens in perfect accord with Nature's way. It is for the amateur and the veteran in bee-keeping. The A. I. Root Co., who ought to know, say this about Doolittle's queen-rearing book:

"It is practically the only comprehensive book on queen-rearing now in print. It is looked upon by many as the foundation of modern methods of rearing queens wholesale."

Mr. Doolittle's book also gives his method of producing comb honey, and the care of same; his management of swarming, weak colonies, etc. It is a book of 126 pages, and is mailed at the following prices: Bound in cloth, \$1.00; bound in leatherette, .75 cents.

Special Clubbing Offer

We offer a cloth-bound copy of this book with the American Bee Journal one year—both for \$1.50; or a copy of the leatherette-bound edition, with the American Bee Journal one year—both for \$1.25. The cloth-bound book given free for getting 3 new subscribers at \$1. each; or the leatherette-bound copy given for 2 new subscribers.

Every bee-keeper should have a copy of Mr. Doolittle's book, as he is one of the standard authorities of the world on the subject of queen-rearing and everything else connected with bee-keeping and honey-production.

George W. York & Co.,

Chicago, Ill.

LEWIS BEEWARE — Shipped Promptly

—SEND FOR NEW CATALOG—

Extracted Honey for Sale.

Beeswax Wanted.

(Ask for Prices.)

28c Cash—31c Trade.

ARND HONEY & BEE-SUPPLY CO. NOT INC.

(Successors to the York Honey & Bee-Supply Co.)

H. M. ARND, Proprietor.

148 West Superior St., CHICAGO, ILL.

Please mention Am. Bee Journal when writing.

Established 1885



We carry an up-to-date
Line of

Bee-Keepers' Supplies

Prices the lowest in the West. Write us for our 50-page catalog, ready to mail you. Free for the asking. We can fill your orders promptly and satisfactorily. Our old customers know what we handle; to new ones we can say that we have

The Best Make of Supplies

hence there is nothing to fear as to quality.

Send us your rush orders and get your goods before swarming time arrives.

Bees and Queens in their season. Beeswax taken in exchange for supplies or cash.

John Nebel & Son Supply Co.

High Hill, Montg. Co., Mo.

Please mention Am. Bee Journal when writing.

ITALIAN QUEENS DIRECT FROM ITALY

— Extensive Apiaries —

E. PENNA, BOLOGNA, ITALY.

I send Queens from May 15 to Sept. 30. In Italy we have only Italian bees, so all my Queens are warranted quite pure and rightly mated. One fertile Queen, \$1.40; twelve, \$12.00; one Breeding Queen, \$3.00. Cash with orders. Queens sent postpaid. Safe arrival guaranteed. 5A1

Please mention Am. Bee Journal when writing.

Of Interest

FOR the past 50 years New England bee-keepers have purchased Bees, Queens, Bee-hives, Supers, Section-boxes, Comb Foundation, Smokers, Honey-jars, and other necessary bee-supplies, of the Reliable and long-established firm of W. W. Cary & Son.

I have recently purchased the above business, and will continue it at the same place as before. I have been associated with the firm for the past eight years, and have had experience in all branches of the business.

I have a fresh supply of the A. I. Root Co.'s goods, which I am able to supply you upon short notice. Send in your orders early and I will give them my best attention. 4A6t

Send for Bee-Supply Catalog.

EARL M. NICHOLS,

(Successor to W. W. Cary & Son)

Lyonsville, Massachusetts

Please mention Am. Bee Journal when writing.

Write Us To-Day

for our 1910 Catalog and let us tell you all about

DITTMER'S COMB FOUNDATION

and

WORKING Your WAX for You.

Write us for **Estimate** on full **Line** of **Supplies**. It will pay you, and costs nothing.

RETAIL and WHOLESale.

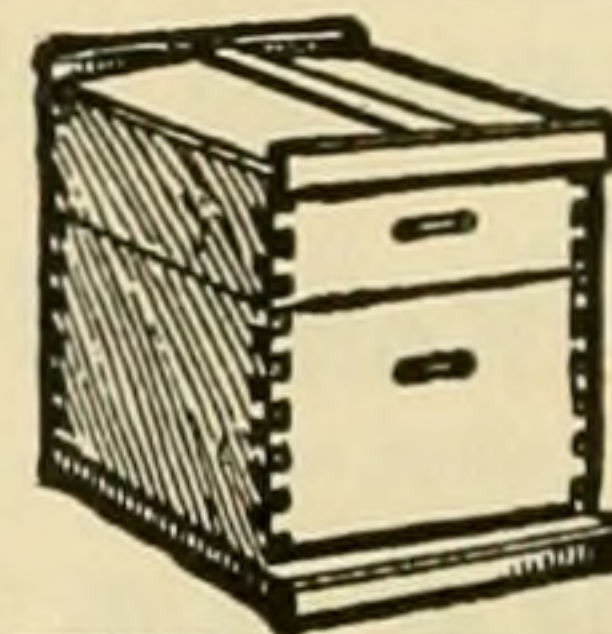
Gus Dittmer Company, - Augusta, Wisconsin.

BARNES' Foot-Power Machinery



Read what J. I. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter. 50 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

Address, **W. F. & JOHN BARNES,**
995 Ruby St., Rockford, Ill.



Latest Improved Hives & Supplies. Disc't on early order. Catalog free. Send 25 cts. for 00-page Bee-Book for beginners.

J. W. ROUSE,
3Atf MEXICO, MO.

"Established in 1878"

The Oldest, the Largest and Best Equipped Queen-Breeding Apiaries in the North.

Every Queen Guaranteed Pure Mated. Italian and Caucasian. Circular Free.

A. D. D. WOOD, Box 61, Lansing, Mich.
Please mention Am. Bee Journal when writing.

CRANE CELLULAR CASES

Mr. H. W. Coley, of Westport, Conn., writes us :

"I am using your Corrugated Paper Cases for shipping comb honey in, this year, and like them. On one shipment last year of six wooden cases packed in a carrier with a straw cushion, the greater part were ruined. This year the same quantity shipped to the same place in your cases went through without a broken comb."

1. The first cost of the Paper Cases is less.
2. He saved the cost of the carriers.
3. He saved the time of making the carriers.
4. He saved the weight of the carriers.
5. The Paper Cases weigh less than wooden ones.
6. They can be assembled in one-half the time it requires to set up a wooden case.

Send for our Circulars and let us tell you what some of the other large producers and dealers say.

Do not take our word for the value of this new Case. Plan to order early. Some were disappointed last year.

J. E. Crane & Son, Middlebury, Vt.

Honey and Beeswax

CHICAGO, May 27.—The stock of fancy comb honey is about exhausted. When sales are made of it, it continues to bring 17@18c. The other grades are from 1@5c lower. Beeswax continues to be in good demand at 32c for clean yellow. Extracted, white, 7@8c; amber 6@7c, according to quality and flavor.
R. A. BURNETT & Co.

CINCINNATI, May 27.—The market on comb honey is bare. The market on extracted honey is brisk, white sage, in 60-pound cans, two to a case, bringing 8½c; amber, in barrels, 6½@6¾c. The demand for beeswax is only fair at \$33 per 100 pounds. These are our selling prices, not what we are paying.
C. H. W. WEBER & Co.

INDIANAPOLIS, May 27.—There is a good demand for best grades of honey, but none is now being offered by producers. Dealers are fairly well supplied with one grade of comb, which is fancy white, mostly from Michigan, and 18c is the price asked. Finest white clover extracted is being sold by dealers in cases of two 60-pound cans at 10c per pound. Producers of beeswax are receiving 30c cash, or 32c in exchange for goods.
WALTER S. POWDER.

NEW YORK, May 27.—Stocks of choice white comb honey well cleaned up, with a fair demand. New crop is now beginning to arrive from the South, and finds ready sale at 13@15c, according to quality. Dark honey and off grades are not in demand. The demand for extracted is fair. Quite a little stock on hand of California last year's stock, but judging from the reports we are receiving from the Coast, this year's crop will be very short, and consequently what is held over is held at firm prices. West Indies honey is arriving regularly, and finds ready sale.

New crop from the South just about beginning to come in. We quote: California white sage, 9@10c; light amber, 8c; amber, 6½@7c. Southern, average quality, 70@75c per gallon; fancy, 6½@7½c a pound. Beeswax steady at 30@31c. HILDRETH & SEGELKEN.

BOSTON, May 23.—Fancy white comb honey at 16@17c; No. 1, 15@16c. White, extracted, 8@9c; light amber, 7@8c; amber, 6@7c. Beeswax, 30@32c.
BLAKE, LEE CO.

ZANESVILLE, OHIO, May 31.—There is about a normal demand for honey, with market rather bare. At this season of the year but little is offered. Best grades of white clover comb, which is what the trade here demands, should bring first-hand 14½@15½c, with wholesale prices about as last quoted. Producers should receive for beeswax 27@28c cash, 30@32c in trade, according to quality.
EDMUND W. PEIRCE.

KANSAS CITY, MO., May 27.—There is no comb honey on this market now, and has been none for some time; the demand is good, and we think No. 1 white comb in 24-section cases would sell at \$3.50 to \$3.75 per case. Demand and receipts on extracted are both fair, and we quote white at 6¾@7c per pound. Beeswax at 25@28c.
C. C. CLEMONS PRODUCE CO.

HURT-CAIN CO., Inc., Receivers and Shippers of Comb and Extracted Honey. Refiners of Beeswax.

Consignments Solicited.
We make a specialty of SOUTHERN HONEY.
5A3t 37 Vance Ave., Memphis, Tenn.

Cook's Honey-Jar.

With patent AIR-TIGHT SANITARY STOPPER is the Best and Cheapest Honey-Jar made. Sold only by

J. H. M. Cook, 70 Cortlandt St., N. Y. City.

Send 10 cents (half postage) for sample Jar, and catalog of WELL-BRED BEES, QUEENS, HIVES, etc.

The oldest Bee-Supply Store in the East.

FALCON FOUNDATION

Years of experience in the manufacture of

FALCON COMB FOUNDATION

have made it PERFECT.

Bees like it, and the foremost

Honey-Producers Use It.

It helps materially to increase the

Honey Crop

(Send for our new Catalog.)

Ship us your

BEESWAX

to FALCONER, N. Y.

Will send shipping-tags, when you write asking for quotations.

We pay highest market prices.

W. T. FALCONER MFG. CO.

JAMESTOWN, N. Y.

SUPERIOR BEE-SUPPLIES

Specially made for Western bee-keepers by G. B. Lewis Co. Sold by Colorado Honey-Producers' Association, DENVER, COLO.

June Shipments The month of white clover is here; and at the time we write this announcement the prospect is better for a magnificent flow from clover than we have had for many years.

Many times bee-keepers have been caught with a lack of Sections or Comb Foundation on the eve of a heavy honey-flow, believing that their present stock is large enough, or not knowing what really wonderful flows occasionally occur. When an apiary is in good condition it takes only a moderate number of colonies to store a ton of honey in a single day, and some of the best yields ever recorded have been the result of big flows from clover or basswood lasting a comparatively short time. Do not lose half a ton of honey by being short a thousand sections. It is much better to have a few sections to carry over than to be the loser by not having them.

Sections I handle the best grade of Sections made. If you want a hundred or ten thousand or a hundred thousand, I can fill your order promptly with goods which are bound to please. You may judge of the popularity of the Sections I sell when I tell you that the manufacturers made upward of twenty-five million of them last season.

Foundation There is nothing more important to the up-to-date bee-keeper than to have Foundation just when he needs it, and of the best quality. I sell nothing but Weed-Process Foundation, the recognized standard of the world. The bees appreciate the good points of this Foundation, and every bee-keeper knows that it is best. All grades and sizes constantly on hand. A pound or a ton, just as you like.

Shipping Whether you are ordering in ample season or whether you have put off until the last moment, you may rest assured that our service will give you delivery of goods at a minimum of expense and time. Having so many years' experience in this work, we know the best routes, and we have the best facilities for serving you. Just tell us your needs briefly, and send us definite orders, and we will demonstrate what we can do for you.

Power Honey-Extractors A thirty-two page booklet that has a lot of valuable information for the bee-keeper who produces extracted honey. A copy free on request. Catalog and price-list of the best bee-supplies made, for the asking.

C. H. W. Weber & Co.

2146 Central Avenue,

Cincinnati, Ohio

BEE-KEEPERS OF THE NORTH

BEE-KEEPERS OF THE WEST

Be Sure to get our **PRICES** on

B E E S W A X

Before selling your season's Wax
or
Let us send to you our prices for
Working your Wax into

DADANT'S FOUNDATION

Many large Honey-Producers prefer our Foundation to other makes, because the bees like it best.

We can use almost an unlimited quantity of BEESWAX, and we are buying at all times of the year at **highest cash and trade prices.**

During the season of 1909 we handled over 175,000 pounds of Beeswax.

BEE-SUPPLIES OF ALL KINDS.

We Keep Only the Best.

Let us Figure on
Your Season's Supplies

1910 CATALOG

Now Ready,

and Free for the Asking.

BEE-KEEPERS OF THE EAST

DADANT & SONS, Hamilton, Illinois.

BEE-KEEPERS OF THE SOUTH

Established 1864

Bee-Keepers' Supplies

☞ We manufacture and furnish everything needed in practical, up-to-date BEE-Culture at the very lowest prices. We make the celebrated **DOVETAILED HIVES** and the famous **MASSIE HIVES**. These are the most practical, up-to-date Bee Hives made and our extremely low prices place them within the reach of all bee-keepers. Our **HONEY EXTRACTORS** and **BEE SMOKERS** are the very best that can be had anywhere. *We guarantee satisfaction to every customer or refund your money and pay the transportation charges both ways. This means that you can send back to us any goods you buy from us that are not satisfactory. We will exchange them or refund your money instantly without a question.*

☞ If you haven't one of our **CHAMPION SMOKERS** you don't know what a good one is until you get one, (sample by mail \$1.00).

☞ Write today for our large illustrated catalog — it is free; it is one of the easiest catalogs to order from that you ever saw. *Remember our guarantee of entire satisfaction.*

☞ Write us for prices on any orders. *We can save you money.*

Kretchmer Mfg. Co., Council Bluffs, Iowa